

# Shortform Catalog

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# Contents

Corporate Profile .....	7
Analog Product Highlights .....	9
Power Management Selection Guide .....	10
Single LDOs .....	10
Dual LDOs .....	13
Multi-Channel LDOs .....	15
LDO Controllers .....	15
HELDO® (High Efficiency LDO).....	15
Voltage Regulator DC-to-DC Topologies .....	16
Step-Down Switching Regulators (Internal Switches) .....	18
Step-Down Switching Regulators (External Switches) .....	19
Multiple Output - Step-Down Switching Regulator (Internal Switches).....	20
Multiple Phase - Step-Down Switching Regulator (External Switches) .....	20
Step-Up Switching Regulators (Internal Switches) .....	21
Step-Up Switching Regulators (External Switches).....	21
Flyback/Forward Converters/Push-Pull Controllers for Isolated Applications.....	22
Step-Down Switching Regulators (Internal Switches + Internal Inductor) .....	22
Power Management ICs (PMIC).....	23
Sub-Power Management ICs (Sub-PMIC).....	23
Battery Chargers .....	24
DDR Terminators .....	24
SCSI Terminators.....	24
Electroluminescent (EL) Drivers .....	25
LED Backlight Drivers.....	25
High Brightness LED Drivers .....	25
Linear LED Drivers .....	26
Display Drivers .....	26
Latched Drivers .....	26
Un-Latched Driver Arrays .....	26
I/O Expanders.....	26
Half-Bridge MOSFET Drivers .....	27
Low-Side MOSFET Drivers .....	27
High-Side MOSFET Drivers.....	28
High or Low-Side MOSFET Drivers.....	28
Single High-Side Load Switches .....	30
Dual High-Side Load Switches .....	30
General Purpose Power Distribution (USB) Switches .....	31
USB Power Switches Supporting ACPI S0/S3 State Transitions .....	33
USB Transceivers .....	33
PC Card/PCMCIA/CardBus Power Distribution Switches .....	33
Fan Control.....	34
Temperature Sensors .....	34
Voltage Monitors and Supervisors .....	35
Dual Voltage Monitors and Supervisors .....	35
Under and Over-Voltage Supervisors .....	35
Hot Swap Power Controllers Selection Guide .....	36
Low Voltage (>16V) .....	36
High Voltage (<16V) .....	36
Compact-PCI/PCI-X/PCI-Express .....	36

Linear ICs Selection Guide.....	37
Comparators.....	37
Comparators with Internal Reference.....	37
Operational Amplifiers.....	37
References.....	38
Timers.....	38
RF Wireless ICs Selection Guide.....	39
Encoders.....	39
Transmitters.....	39
Receivers.....	39
Transceivers.....	39
Ethernet Product Highlight.....	40
LAN Solutions Selection Guide.....	41
PHYs.....	41
Controllers.....	42
Switches.....	43
IEEE-1588 Ethernet.....	44
ARM Based Ethernet SOC.....	44
Power Over Ethernet (POE).....	44
Automotive (AEC-Q100 Qualified) Selection Guide.....	45
Power Management.....	45
LAN Solutions.....	45
High BandWidth Product Highlights — ClockWorks™ Family.....	46
High-Speed Clock and Data Distribution Selection Guide.....	47
Fanout Buffers.....	47
Clock Dividers.....	49
Translators.....	50
Multiplexers.....	51
Crosspoint Switches.....	52
Backplane and Cable Management Solutions.....	52
Recievers/Buffers/Drivers.....	53
Skew Management (Delay Lines).....	53
Registers and Flip-Flops.....	54
Gates.....	54
Latches.....	54
Compact (2mm x 2mm) Products.....	55
Super 300K (Fairchild Semiconductor Second Source).....	56
High Speed Clock Generation Selection Guide.....	57
Clock Generators.....	57
Ultra-Low Jitter Clock Synthesizers.....	57
Communications Product Highlights — Lowest Power SFP.....	58
Communications and Fiber Optic ICs Selection Guide.....	59
CDRs with Integrated Clock Synthesis.....	59
Multiplexer/Demultiplexer.....	59
Optical Module Controllers.....	60
Fiber Optic Single-Chip Transceivers.....	60
Fiber Optic Laser Diode Drivers.....	60
Fiber Optic Post Amplifiers.....	61
Ethernet Part Identification.....	62
High Bandwidth Part Identification.....	62
Analog Part Identification.....	63
Worldwide Sales Offices and Distributors.....	66





## Corporate Profile

Micrel Inc. is a leading global manufacturer of IC solutions for the worldwide Analog, Ethernet and High Bandwidth markets. The Company's products include advanced mixed-signal, analog and power semiconductors; high performance communication, clock management, Ethernet switch and physical layer transceiver ICs. Company customers include leading manufacturers of enterprise, consumer, industrial, mobile, telecommunications, automotive, and computer products. Corporation headquarters and state-of-the-art wafer fabrication facilities are located in San Jose, CA with regional sales and support offices and advanced technology design centers situated throughout the Americas, Europe and Asia. In addition, the Company maintains an extensive network of distributors and reps worldwide. Web: <http://www.micrel.com>.

Founded in 1978, Micrel maintains a portfolio of world class wafer fabrication processes that enable the Company to produce new products faster than the competition. The Company uses, singularly or in combination, CMOS, Bipolar and DMOS technologies in its analog products. With the acquisition of Synergy Semiconductor in 1998, Micrel has high-speed bipolar capability in the form of ASSET™ (All Spacer Separated Element Transistor) process. This proprietary, patented bipolar technology employs a narrow deep-trench isolation technique allowing for electrical isolation between adjacent circuit elements. This means the Company can place multiple analog and digital functions on the same IC without the various functions causing interference typically found when alternate techniques are utilized.

### Ethernet ICs

Micrel is an established leader in wired Ethernet networking with more than 300 million ports shipped. The Company's Ethernet products are widely used in Digital Home devices (IP-STB, IP-TV, etc.), routers, access points, VoIP, Automotive, Industrial and Power over Ethernet (PoE) applications, to name a few. There are a wide range of field-proven, multi-port products in a variety of packages, including Physical Layer Transceivers (PHYs), Embedded Controllers, Unmanaged and Managed Switches and System-on-Chip (SoC) ICs with an integrated processor. Micrel's comprehensive portfolio of Ethernet products operate over commercial, industrial and extended temperature ranges, and are available in a variety of environmentally friendly, lead-free packaging options.

### High-BandWidth and Communication Solutions

Micrel's High-BandWidth and Communication products include PMD (Physical Media Device) ICs such as multi-rate (up to 4.25Gbps) Laser drivers, post amplifiers and optical module management controllers for all types of fiber optical module applications. It also includes physical layer ICs such as 155Mbps and multi-rate (up to 2.7Gbps) CDRs (Clock and Data Recovery), and MUX/DeMUX ICs for Access and Telecommunications applications. This growing family of devices leads the industry in design innovation and flexibility. The ICs often exceed stringent industry requirements.

### Precision Edge® Products

Micrel's Precision Edge® product family includes precision frequency synthesizers, clock distribution and translation, multiplexers, crosspoint switches, and high-speed gates — all aimed at meeting the most rigorous, timing-critical applications. All Precision Edge® products are designed to provide the lowest skew and jitter IC solutions available.

### Low-Dropout Voltage Regulators

Micrel has gained a reputation as a leading supplier of LDO regulators and is a major global supplier to the mobile phone and computing industries. The Company maintains a very broad portfolio of LDO regulators ranging from 10mA devices in Teeny™ SC-70-5 packages to 7.5A power devices and LDO controllers for even higher current applications. Input voltages up to 120V are supported.

### Radio Frequency Products

Micrel's RF offering consists of two product groups: QwikRadio® receivers and transmitters for actuation devices such as remote controls and remote keyless entry; and RadioWire® transceivers for connectivity applications such as wire replacement in industrial control and security systems.

### Universal Serial Bus and PCMCIA

As a recognized leader of USB and PC Card power distribution solutions, Micrel's extensive selection of ICs are consistently used by many of the leading PC and peripheral OEMs.

### Hot Swap Controllers

Micrel's hot swap power controllers support the industry requirement for high availability (24/7/365) operation in servers, telecom and datacom equipment, and enterprise storage networks. These products allow customers to upgrade or replace system boards without having to power down the entire system. Offering products for primary- and secondary-side applications, Micrel's family of hot swap power controllers offers customers a wide range of product choices uniquely suited to these applications. This product portfolio includes the award-winning MIC2590B, the industry's most integrated dual-slot hot swap power controller for PCI and CompactPCI® applications. Leveraging Micrel's expertise in power control and distribution, the MIC2590B was designed to support Intel's Itanium® 64-bit server platforms. To address the next generation, more dual-slot power controllers are in development. For primary-side applications, the Company continues to add innovative products to the high-voltage

hot swap product portfolio, addressing power control applications for the telecommunications, data communications, and data storage equipment markets.

### MOSFET Drivers

Micrel offers a broad range of MOSFET drivers, ranging from IttyBitty® devices in SOT-23 packaging to 12A high-power devices. "New" device families offer thermally enhanced exposed pad SOIC, MSOP and space saving efficient MLF® 2x2mm, 3x3mm and 4x4mm package options.

### Switch-Mode Power Supply Products

Micrel has a rapidly expanding portfolio of switching regulator products serving the mobile device, portable computer, telecommunications and industrial markets. All products combine Micrel's advanced processes with the Company's strong design expertise to produce best-in-class products. These products address step-up, step-down and multi-output systems (PMICs), all offering designers speed and efficiency advantages. Micrel also offers an expanding line of DC/DC Regulators with internal MOSFETs and Inductors.

### System/Thermal Management Products

Thermal management is an increasingly critical function in today's portable and high performance systems. Micrel's proprietary technology enables more functionality in smaller packages and superior, real-world accuracy in temperature measurement via embedded thermal diodes. Thermal diodes are increasingly used to monitor the die temperature of high-performance integrated circuits such as Intel® and AMD® microprocessors, Xilinx Virtex®, FPGAs, and ASICs. Micrel's family of products include the world's first and only IttyBitty® SOT-23 thermal diode supervisor IC and the smallest three-zone thermal supervisor. All together, Micrel offers a complete family of one, two, and three-zone thermal supervisor ICs as well as both analog and digital fan controllers.

### Operational Amplifiers and Comparators

The Company has a broad range of high and low voltage op amps and comparators. These ICs range from general purpose to high speed devices. Of particular note is the MIC86x family of ICs which are, by far, the lowest power consumption op amps of their type on the market. The advanced features of these products make them ideally suited for all forms of battery-powered equipment.

### Other Product Lines

- Voltage references
- Voltage supervisors
- Miniature MOSFETs
- Serial and parallel-input latched drivers
- Display drivers
- Latched drivers
- Custom and semi-custom products

### Big Technology, Small Package Innovation

In response to increasing demands for smaller and smaller footprint solutions, Micrel leads the industry in packaging innovation with IC packaging options, including MLF® technology, down to .85mm x .85mm and smaller CSP packages.

### Quality Assurance

Micrel first achieved ISO 9001 registration on March 31, 1997 and on December of 2004, the Company's wafer fabrication facility was certified to ISO14001:1996, the International Environmental Management System Standard. The goal of the environmental management system is to ensure regulatory compliance and to reduce environmental impact through waste reduction and recycling. Micrel is committed to delivering products and services that meet or exceed our customers' expectations — error free, on-schedule, and at a competitive price. Micrel maintains a culture of continuous improvement that runs through all disciplines in the company and includes the activities of its suppliers.

### Commitment to Customer Satisfaction

Micrel remains committed to contributing to its customers' success. Internal processes have been developed with flexibility in mind, so the Company can quickly react to changing requirements. Micrel's outstanding sales, customer service and technical support organizations are set up to address customer needs and requirements.





# Analog Product Highlights

## MIC26601/901/1201 - SuperSwitcher II™ Buck Regulators MIC26603/903/1203 - SuperSwitcher IIG™ Buck Regulators

The Micrel SuperSwitcher II™ and SuperSwitcher IIG™ families comprise synchronous buck regulators featuring a unique adaptive on-time control architecture. These devices operate over an input supply range of 4.5V to 28V and provide up to 12A of output current. The output voltage is adjustable down to 0.8V with a guaranteed accuracy of  $\pm 1\%$ .

Micrel's Hyper Speed Control™ architecture allows for ultra-fast transient response while reducing the output capacitance and also makes (High  $V_{IN}$ )/(Low  $V_{OUT}$ ) operation possible. This adaptive  $t_{ON}$  ripple control architecture combines the advantages of fixed-frequency operation and fast transient response.

Micrel's HyperLight Load® architecture provides the same high-efficiency and ultra-fast transient response as the Hyper Speed Control™ architecture under medium to heavy loads, but also maintains high efficiency under light load conditions by transitioning to variable-frequency, discontinuous-mode operation.

The family offers a full suite of protection features to ensure protection of the IC during fault conditions. These include undervoltage lockout to ensure proper operation under power-sag conditions, internal soft-start to reduce inrush current, foldback current limit, "hiccup" mode short-circuit protection and thermal shutdown.

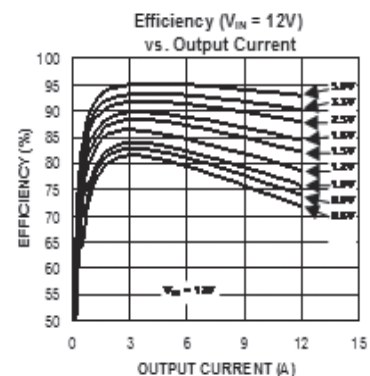
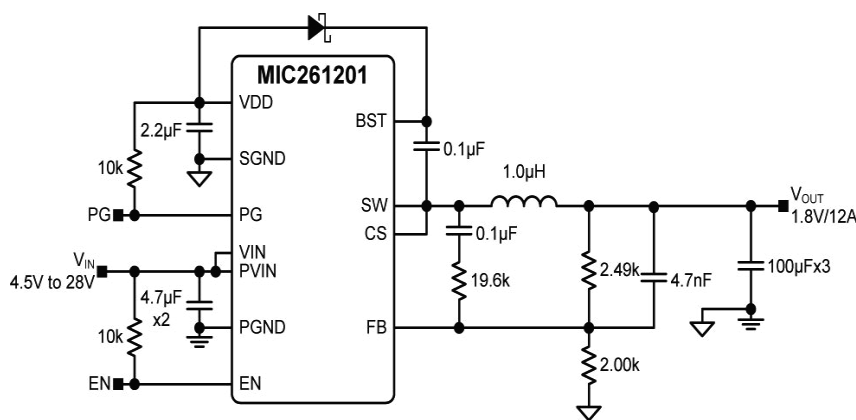
P/N	Hyper Speed Control™	HyperLight Load®	Max Input Voltage	Max Output Current
MIC26601	X		28V	6A
MIC26901	X		28V	9A
MIC261201	X		28V	12A
MIC26603	X	X	28V	6A
MIC26903	X	X	28V	9A
MIC261203	X	X	28V	12A

### Features

- Hyper Speed Control™ architecture (MIC26x01) enables:
  - High Delta V operation ( $V_{IN} = 28V$  and  $V_{OUT} = 0.8V$ )
  - Small output capacitance
  - Excellent transient response
- HyperLight Load® (MIC26x03) maximizes light load efficiency:
  - Up to 80% at 10mA
- Input voltage range: 4.5V to 28V
- 6A-12A output current capability
- High full-load efficiency: up to 95%
- Adjustable output voltage from 0.8V to 5.5V
- $\pm 1\%$  FB accuracy
- Any Capacitor™ stable - zero-to-high ESR
  - Zero-ESR to high-ESR output capacitors
- Power Good (PG) output
- Foldback current-limit and "hiccup" mode short-circuit protection
- Safe start-up into pre-biased loads
- Available in: 28-pin (5mm x 6mm) MLF® package

### Applications

- Distributed power systems
- Communications/networking infrastructure
- Set-top box, gateways and routers
- Printers, scanners, graphics and video cards



# Power Management Selection Guide

## Single LDOs

Bold = New P/N	I <sub>OUT</sub>	V <sub>IN</sub>		V <sub>OUT</sub> (V)	V <sub>D-OUT</sub> Typ (mV)	I <sub>GND</sub> Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V <sub>OUT</sub> ≤1.2V	μCap	* = Reduced height package Package
		Min (V)	Max (V)										
MIC5231	10mA	3.5	12	2.75, 3.0, 3.3, 5.0	150	650nA	50					X	SOT23-5
MIC5232	10mA	2.7	7.0	1.2, 2.5, 2.8, 3.3	100	1.8μA	55					X	SOT23-5*, 2x2
MAQ5280	25mA	4.5	120	Adj	1,100	31μA	80		X			X	eSOIC-8
<b>MIC5281</b>	25mA	6.0	120	3.3, 5.0, Adj	2,000	6μA	90	X				X	eMSOP-S, MSOP-S
MIC5280	25mA	4.5	120	Adj	1,100	31μA	80		X			X	eSOIC-8
<b>MIC5282</b>	50mA	6.0	120	3.3, 5.0, Adj	2,000	6μA	90	X				X	eMSOP-8, MSOP-8
MIC5203	80mA	2.5	16	2.6, 2.8, 3.0, 3.3, 3.6, 3.8, 4.0, 4.5, 5.0	300	180μA	60		X			X	SOT23-5, SOT143
MIC5213	80mA	2.5	16	2.5, 2.6, 2.7, 2.8, 3.0, 3.3, 3.6, 5.0	280	180μA	60		X			X	SC70-5
LP2951	100mA	2.0	30	4.8, 5.0, Adj	380	100μA	70			X			SOIC-8, PDIP-8
LP2951	100mA	2.0	30	4.8, 5.0, Adj	380	100μA	70			X			SOIC-8, PDIP-8
MIC5200	100mA	2.5	26	3.0, 3.3, 4.8, 5.0	230	130μA	70		X				MSOP, SOIC, SOT223
MIC5233	100mA	2.3	36	1.8, 2.5, 3.0, 3.3, 5.0, Adj	270	18μA	50		X			X	SOT23-5, SOT143
MIC5253	100mA	2.7	5.5	1.5, 1.8, 1.85, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3	165	75μA	70					X	SC70-5
MIC5270	100mA	-2.0	-16	-3.0, -4.1, -5.0, Adj	500	35μA	50					X	SOT23-5
MIC5271	100mA	-3.3	-16	-3.0, -5.0, Adj	500	25μA	50					X	SOT23-5
MIC2950	150mA	2.0	30	5.0	300	120μA	65	X	X	X			TO92
MIC2950	150mA	2.0	30	5.0	300	120μA	66	X	X	X			TO92
MIC2951	150mA	2.0	30	3.3, 5.0	320	120μA	67	X	X	X			MSOP-8, SOIC-8, PDIP-8
MIC2951	150mA	2.0	30	5.0	300	120μA	68	X	X	X			MSOP-8, SOIC-8, PDIP-8
MIC5205	150mA	2.5	16	2.5, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3, 3.6, 3.8, 4.0, 5.0, Adj	165	80μA	75		X				SOT23-5
MIC5206	150mA	2.5	16	2.5, 2.7, 3.0, 3.2, 3.3, 3.6, 3.8, 4.0, 5.0, Adj	165	1.3mA	75		X	X			MSOP-8, SOT23-5
MIC5225	150mA	2.3	16	1.5, 1.8, 2.5, 2.7, 3.0, 3.3, 5.0, Adj	310	29μA	35		X			X	SOT23-5
MIC5235	150mA	2.3	24	1.5, 1.8, 2.5, 2.7, 3.0, 3.3, 5.0, Adj	310	18μA	35		X			X	SOT23-5
MIC5236	150mA	2.3	30	2.5, 3.0, 3.3, 5.0, Adj	300	20μA	55	X	X	X		X	MSOP-8, SOIC-8
MIC5238	150mA	1.5	6.0	1.0, 1.1, 1.3	310	23μA	50				X	X	SOT23-5, SOT23-5*
MIC5247	150mA	2.7	6.0	1.5, 1.6, 1.8, 1.85, 2.0, 2.1, 2.2, 2.4	150	85μA	60			X		X	SOT23-5, SOT23-5*, 2x2
MIC5248	150mA	2.7	6.0	1.2		100μA	63			X	X	X	SOT23-5, 2x2
MIC5252	150mA	2.7	6.0	1.8, 2.5, 2.8, 2.85, 3.0, 4.75	135	90μA	60					X	SOT23-5, 2x2
MIC5255	150mA	2.7	6.0	2.5, 2.6, 2.7, 2.75, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3, 3.5	135	90μA	60					X	SOT23-5, SOT23-5*, 2x2
MIC5256	150mA	2.7	6.0	1.5, 1.8, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.3	135	90μA	60			X		X	SOT23-5, SOT23-5*
MIC5258	150mA	2.7	6.0	1.2		85μA				X	X	X	SOT23-5
MIC5265	150mA	2.7	5.5	1.5, 1.8, 1.85, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.2, 3.3	210	75μA	64					X	SOT23-5*
MIC5268	150mA	2.7	6.0	1.2		110μA				X	X	X	SOT23-5
MIC5295	150mA	2.3	24	3.0, 3.3, 5.0, Adj	310	18μA	50		X			X	TO252-5
MIC5301	150mA	2.3	5.5	1.3, 1.5, 1.8, 2.1, 2.5, 2.6, 2.8, 2.85, 2.9, 3.0, 3.3, 4.6, Adj	40	85μA	75					X	SOT23-5*, 1.6x1.6*, 1.6x1.6
MIC5302	150mA	2.3	5.5	1.3, 1.5, 1.8, 2.1, 2.5, 2.6, 2.8, 2.85, 2.9, 3.0, 3.3, 4.6	50	85μA	65					X	1.2x1.6*
MIC5304	150mA	2.3	5.5	3.15/1.85, 3.15/1.875, 3.2/1.8	85	24μA	65					X	1.6x1.6*
MIC5305	150mA	2.25	5.5	1.5, 1.8, 2.0, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.3, 4.6, 4.75, Adj	60	90μA	85					X	2x2, 2x2*, SOT23-5*
MIC5306	150mA	2.25	5.5	1.8, 2.5, 2.6	45	16μA	62					X	SOT23-5*
MIC5308	150mA	1.6	5.5	1.2, 1.5, 1.8, Adj	45	23μA	90				X	X	SOT23-6*, 1.6x1.6*

# Power Management Selection Guide

Part Number	$I_{OUT}$	$V_{IN}$ Min (V)	$V_{IN}$ Max (V)	$V_{OUT}$ (V)	$V_{D-OUT}$ Typ (mV)	$I_{GND}$ Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	$V_{OUT} \leq 1.2V$	$\mu Cap$	* = Reduced height package Package
MIC5326	150mA	2.3	5.5	2.8	85	24 $\mu A$	60					X	1.2x1.6*
MIC5365	150mA	2.5	5.5	1.0, 1.2, 1.3, 1.5, 1.8, 2.0, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.3	155	32 $\mu A$	80				X	X	SC70-5, 1x1*
MIC5366	150mA	2.5	5.5	1.0, 1.2, 1.3, 1.5, 1.8, 2.0, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.3	155	32 $\mu A$	80				X	X	SC70-5, 1x1*
MIC5375	150mA	2.5	5.5	2.8	120	29 $\mu A$	60					X	SC70-5, 1x1*
MIC5376	150mA	2.5	5.5	2.8	120	29 $\mu A$	60					X	SC70-5, 1x1*
MIC5377	150mA	2.5	5.5	Adj	120	29 $\mu A$	60					X	SC70-5, 1.2x1.2*
MIC5378	150mA	2.5	5.5	Adj	120	29 $\mu A$	60					X	SC70-5, 1.2x1.2*
MIC5207	180mA	2.5	16	1.8, 2.5, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 4.0, 5.0, Adj	165	80 $\mu A$	75		X				SOT23-5, SOT23-5*
MIC5201	200mA	2.5	26	3.0, 3.3, 4.8, 5.0, Adj	270	130 $\mu A$	75	X	X				SOIC-8, SOT223
MIC5367	200mA	2.5	5.5	1.2, 1.5, 3.3	180	29 $\mu A$	65				X	X	1.6x1.6*
MIC5368	200mA	2.5	5.5	1.2, 1.5, 3.3	180	29 $\mu A$	65				X	X	1.6x1.6*
MIC2954	250mA	2.0	30	5.0, Adj	375	140 $\mu A$		X		X			SOIC-8, SOT223, TO220-3
MIC2954	250mA	2.0	30	5.0, Adj	375	140 $\mu A$		X		X			SOIC-8, SOT223, TO220-3
MIC5249	300mA	2.7	6.0	1.8, 2.5, 2.8, 2.85, 3.0, 3.3	340	85 $\mu A$	65			X		X	MSOP-8
MIC5259	300mA	2.7	6.0	1.5, 1.8, 2.1, 2.5, 2.8, 2.85, 3.0, 3.3	300	105 $\mu A$	70					X	2x2, SOT23-5*
MIC5303	300mA	2.3	5.5	1.5, 1.8, 2.1, 2.5, 2.6, 2.8, 2.85, 2.9, 3.0, 3.3	100	85 $\mu A$	65					X	1.2x1.6*
MIC5307	300mA	2.4	5.5	1.5, 1.8, 2.8, 3.0	120	20 $\mu A$	62					X	2x2, SOT23-5*
MIC5309	300mA	1.7	5.5	1.2, 1.5, 1.8, Adj	100	23 $\mu A$	90				X	X	SOT23-6*, 1.6x1.6*
MIC5318	300mA	2.3	6.0	1.5, 1.8, 2.5, 2.8, 3.3, Adj	110	85 $\mu A$	75					X	SOT23-5*, 1.6x1.6*, 1.6x1.6
MIC5327	300mA	2.3	5.5	1.8, 2.8	180	24 $\mu A$	60					X	1.2x1.6*
MIC5337	300mA	2.3	5.5	1.8, 2.8	180	24 $\mu A$	65					X	1.2x1.6*
MIC29201	400mA	2.0	26	3.3, 4.8, 5.0, 12	400	140 $\mu A$	70	X		X			TO220-5, SOIC-8
MIC29202	400mA	2.0	26	Adj	400	140 $\mu A$	70	X					TO220-5, TO263-5
MIC29204	400mA	2.0	26	5.0, Adj	400	140 $\mu A$	70	X					SOIC-8, PDIP-8
MIC2920A	400mA	2.0	26	3.3, 4.8, 5.0, 12	400	140 $\mu A$	70	X					SOT223, TO220
MIC5325	400mA	1.7	5.5	1.2, 1.5, 1.8, 3.6	110	35 $\mu A$	65				X	X	2x2*
MIC5325	400mA	1.7	5.5	1.2, 1.5, 1.8, 3.6	110	35 $\mu A$	65				X	X	2x2*
MIC47050	500mA	1.0	3.6	1.2, 1.8, Adj	44	6 $\mu A$	50			X	X	X	2x2*, 2x2
MIC5209	500mA	2.5	16	1.8, 2.5, 3.0, 3.3, 3.6, 4.2, 5.0, Adj	350	8mA	75		X				SOIC-8, SOT223, TO263-5, 3x3
MIC5216	500mA	2.5	12	2.5, 3.3, 3.6, 5.0	300	8mA	75		X	X			SOT23-5, MSOP-8
MIC5219	500mA	2.5	12	2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.1, 3.3, 3.6, 5.0, Adj	350	12mA	75		X				SOT23-5, MSOP-8, 2x2*, 2x2
MIC5237	500mA	2.5	16	2.5, 3.3, 5.0	300	8mA	75		X				TO220-3, TO263-3
MIC5239	500mA	2.3	30	1.5, 1.8, 2.5, 3.0, 3.3, 5.0, Adj	350	23 $\mu A$	50		X	X		X	MSOP-8, SOIC-8, SOT223
MIC5319	500mA	2.5	5.5	1.375, 1.8, 1.85, 2.5, 2.6, 2.7, 2.8, 2.85, 2.9, 3.0, 3.3, 5.0, Adj	200	90 $\mu A$	70					X	SOT23-5*, 2x2
<b>MIC5353</b>	500mA	2.6	6.0	1.8, 2.5, 2.6, 2.8, 3.0, 3.3, Adj	160	90 $\mu A$	60					X	1.6x1.6
MIC29371	750mA	4.3	26	3.3, 5.0, 12	370	160 $\mu A$		X	X	X			TO220-5, TO263-5
MIC29372	750mA	4.3	26	Adj	370	160 $\mu A$		X	X				TO220-5, TO263-5
MIC2937A	750mA	4.3	26	3.3, 5.0, 12	370	160 $\mu A$		X	X				TO220-3, TO263-3
MIC3775	750mA	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.0, 3.3, Adj	280	6.5mA	60			X		X	MSOP-8
MIC3975	750mA	2.25	16	1.65, 1.8, 2.5, 3.0, 3.3, 5.0, Adj	300	7.5mA	55			X		X	MSOP-8
MIC37100	1.0A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	280	400 $\mu A$	50		X			X	SOT223
MIC37101	1.0A	2.25	6.0	1.5, 1.65, 1.8, 2.1, 2.5, 3.3	280	400 $\mu A$	50		X	X		X	SOIC-8
MIC37102	1.0A	2.25	6.0	Adj	280	400 $\mu A$	50		X			X	SOIC-8, SPAK-5

# Power Management Selection Guide

Bold = New P/N	I <sub>OUT</sub>	V <sub>IN</sub>		V <sub>OUT</sub> (V)	V <sub>D-OUT</sub> Typ (mV)	I <sub>GND</sub> Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V <sub>OUT</sub> ≤1.2V	μCap	* = Reduced height package Package
		Min (V)	Max (V)										
MIC39100	1.0A	2.25	16	1.8, 2.5, 3.3, 5.0	410	6.5mA	55		X				SOT223
MIC39101	1.0A	2.25	16	1.8, 2.5, 3.3, 5.0	410	6.5mA	55		X	X			SOIC-8
MIC39102	1.0A	2.25	16	Adj	410	6.5mA	55		X				SOIC-8
MIC47100	1.0A	1.0	3.6	0.8, 1.0, 1.2, Adj	80	350μA	80				X	X	eMSOP-8, 2x2
MIC69101	1.0A	1.65	5.5	1.8	215	11mA	55			X	X	X	3x3
MIC69103	1.0A	1.65	5.5	Adj	215	11mA	55			X	X	X	3x3
MIC2940A	1.25A	2.0	26	3.3, 5.0, 12	400	35mA		X	X				TO220-3, TO263-3
MIC2941A	1.25A	2.0	26	Adj	400	35mA		X	X				TO220-5, TO263-5
MIC29150	1.5A	2.25	26	3.3, 5.0, 12	350	22mA		X	X				TO220-3, TO263-3
MIC29151	1.5A	2.25	26	3.3, 5.0, 12	350	22mA		X	X	X			TO220-5, TO263-5
MIC29152	1.5A	2.25	26	Adj	350	22mA		X	X				TO220-5, TO252-5
MIC29153	1.5A	2.25	26	Adj	350	22mA		X	X	X			TO220-5, TO263-5, TO263-5
MIC35152	1.5A	2.25	6.0	Adj	365	11mA	45					X	TO252-5
MIC37139	1.5A	2.25	6.0	1.8, 2.5	500	17mA	50		X			X	SOT223
MIC37150	1.5A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	325	17mA	45		X			X	SPAK-3
MIC37151	1.5A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	325	17mA	45		X	X		X	SPAK-5, eSOIC-8
MIC37152	1.5A	2.25	6.0	Adj	325	17mA	45		X			X	SPAK-5, SOIC-8
MIC37153	1.5A	2.25	6.0	Adj	325	17mA	45		X	X		X	eSOIC-8
MIC39150	1.5A	2.25	16	1.65, 1.8, 2.5	375	17mA	53		X				TO220-3, TO263-3
MIC39151	1.5A	2.25	16	1.65, 1.8, 2.5	375	17mA	53		X	X			TO220-5, TO263-5
MIC39152	1.5A	2.25	16	Adj	375	17mA	53		X				TO252-5, TO263-5
MIC47150	1.5A	1.4	6.5	Adj	280	15mA	55				X	X	TO252-5
MIC49150	1.5A	1.4	6.5	0.9, 1.2, 1.5, 1.8, Adj	280	15mA	57				X	X	MSOP-8, SPAK-5
MIC59150	1.5A	1.0	3.8	Adj	100	12.5mA	60				X	X	eSOIC-8
MIC61150	1.5A	1.1	3.6	1.0, Adj	75	7.6mA	50				X	X	eMSOP-10, 3x3
MIC69151	1.5A	1.65	5.5	1.8	250	20mA	55			X	X	X	eSOIC-8, 3x3
MIC69153	1.5A	1.65	5.5	Adj	250	20mA	55			X	X	X	eSOIC-8, 3x3
MIC49200	2.0A	1.4	6.5	1.0, 1.8, Adj	400	15mA	83				X	X	SPAK-5
MIC68200	2.0A	1.65	5.5	1.2, 1.5, 1.8, 2.5, 3.3, Adj	300	42mA	60			X	X	X	3x3
MIC37252	2.5A	3.0	6.0	Adj	550	40mA	50					X	SPAK-5, TO263-5
MIC29300	3.0A	2.25	26	3.3, 5.0, 12	370	37mA		X	X				TO220-3, TO263-3
MIC29301	3.0A	2.25	26	3.3, 5.0, 12	370	37mA		X	X	X			TO220-5, TO263-5
MIC29302	3.0A	2.25	26	Adj	370	37mA		X	X				TO220-5, TO263-5
MIC29303	3.0A	2.25	26	Adj	370	37mA		X	X	X			TO220-5, TO263-5
MIC29310	3.0A	2.3	16	3.3, 5.0	600	60mA		X	X				TO220-3, TO263-3
MIC29311	3.0A	2.3	8.0	5.1	600	60mA		X	X	X			TO220-5
MIC29312	3.0A	2.3	16	Adj	600	60mA		X	X				TO220-5, TO263-5
MIC35302	3.0A	2.25	6.0	Adj	370	20mA	50		X			X	TO252-5
MIC37300	3.0A	2.25	6.0	1.5, 1.65, 1.8, 2.5, 3.3	300	27mA	50					X	SPAK-3
MIC37301	3.0A	2.25	6.0	1.5, 1.8, 2.5, 3.3	300	27mA	50			X		X	SPAK-5, eSOIC-8
MIC37302	3.0A	2.25	6.0	Adj	300	27mA	50					X	SPAK-5, TO263-5
MIC37303	3.0A	2.25	6.0	Adj	300	27mA	50			X		X	eSOIC-8
MIC39300	3.0A	2.25	16	1.8, 2.5	385	45mA		X					TO220-3, TO263-3
MIC39301	3.0A	2.25	16	1.8, 2.5	385	45mA		X	X				TO220-5, TO263-5
MIC39302	3.0A	2.25	16	Adj	385	45mA		X					TO263-5
MIC47300	3.0A	1.4	6.5	Adj	230	25mA						X	TO252
MIC49300	3.0A	1.4	6.5	0.9, 1.2, 1.5, 1.8, Adj	280	25mA					X	X	SPAK-5

# Power Management Selection Guide

Bold = New P/N	I <sub>OUT</sub>	V <sub>IN</sub>		V <sub>OUT</sub> (V)	V <sub>D-OUT</sub> Typ (mV)	I <sub>GND</sub> Typ	PSRR (dB)	Load Dump	Rev Bat	PWR Good	V <sub>OUT</sub> ≤1.2V	μCap	* = Reduced height package Package
		Min (V)	Max (V)										
MIC59300	3.0A	1.0	3.8	1.2V, Adj	205	30mA	65				X	X	TO263-5, eSOIC-8
<b>MIC61300</b>	3.0A	1.1	3.6	1.0, Adj	150	7.6mA	55				X	X	eMSOP-10, 3x3
MIC69301	3.0A	1.65	5.5	1.2	275	32mA	55			X	X	X	SPAK-5, eSOIC-8, TO263-5
MIC69302	3.0A	1.65	5.5	Adj	275	32mA	55				X	X	SPAK-5, TO263-5
<b>MIC69303</b>	3.0A	1.65	5.5	Adj	275	32mA	55			X	X	X	eSOIC-8, 4x4
MIC68400	4.0A	1.65	5.5	1.8, Adj	360	90mA	50			X	X	X	4x4
MIC29500	5.0A	2.25	26	3.3, 5.0, 12	370	70mA		X	X				TO220-3
MIC29501	5.0A	2.25	26	3.3, 5.0, 12	370	70mA		X	X	X			TO220-5, TO263-5
MIC29502	5.0A	2.25	26	Adj	370	70mA		X	X				TO220-5, TO263-5
MIC29503	5.0A	2.25	26	Adj	370	70mA		X	X	X			TO220-5, TO263-5
MIC29510	5.0A	2.3	16	3.3, 5.0	700	100mA		X	X				TO220-3
MIC29512	5.0A	2.3	16	Adj	700	100mA		X	X				TO220-5
MIC37501	5.0A	2.3	6.0	1.5, 1.65, 1.8, 2.5, 3.3	330	57mA				X		X	SPAK-7
MIC37502	5.0A	2.3	6.0	Adj	330	57mA						X	SPAK-7, TO263-5
MIC39500	5.0A	2.25	16	1.8, 2.5	400	70mA	30		X			X	TO220-3, TO263-3
MIC39501	5.0A	2.25	16	1.8, 2.5	400	70mA	30		X	X		X	TO220-5, TO263-5
MIC49500	5.0A	1.4	6.0	0.9, 1.2, Adj	290	55mA	75				X	X	SPAK-7, TO263-7
MIC69502	5.0A	1.65	5.5	Adj	250	54mA	52				X	X	SPAK-5
MIC29710	7.5A	2.3	16	3.3, 5.0	700	250mA							TO220-3
MIC29712	7.5A	2.3	16	Adj	700	250mA							TO220-5
MIC29750	7.5A	2.5	26	3.3, 5.0	425	120mA		X	X				TO247-3
MIC29751	7.5A	2.5	26	3.3, 5.0	425	120mA		X	X	X			TO247-5
MIC29752	7.5A	2.5	26	Adj	425	120mA		X	X				TO247-5

## Dual LDOs

Bold = New P/N	I <sub>OUT</sub>		V <sub>IN</sub>		V <sub>OUT</sub> (V)	V <sub>D-OUT</sub> Typ (mV)	I <sub>GND</sub> Typ	PSRR (dB)	Rev Bat	PWR Good	V <sub>OUT</sub> ≤1.2V	μCap	By- Bias Cap	* = Reduced height pkg Package
	#1	#2	Min (V)	Max (V)										
MIC5208	50mA	50mA	2.5	16	3.0/3.0, 3.3/3.3, 3.6/3.6, 4.0/4.0, 5.0/5.0	250	180μA		X			X		MSOP-8
MIC5211	80mA	80mA	2.5	16	1.8/1.8, 1.8/2.5, 1.8/3.3, 2.5/2.5, 2.5/3.3, 2.5/5.0, 2.7/2.7, 2.8/2.8, 3.0/3.0, 3.3/3.3, 5.0/5.0	250	90μA		X			X		SOT23-6
MIC5202	100mA	100mA	2.5	26	3.0/3.0, 3.3/3.3, 4.8/4.8, 5.0/5.0	225	170μA		X					SOIC-8
MIC5210	150mA	150mA	2.5	16	2.7/2.7, 2.8/2.8, 2.8/3.0, 2.9/2.9, 3.0/3.0, 3.3/3.3, 3.6/3.6, 4.0/4.0, 5.0/5.0	165	80μA	75	X				X	MSOP-8
MIC5310	150mA	150mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3	35	85μA	70			X	X	2x2	
MIC5320	150mA	150mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.4/1.5, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3, 4.6/2.8	35	85μA	65			X		1.6x1.6*, 1.6x1.6, SOT23-6*	
MIC5321	150mA	150mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3, 4.6/2.8	35	85μA	75			X	X	1.6x1.6*, 1.6x1.6, SOT23-6*	
MIC5322	150mA	150mA	2.3	5.5	2.8/1.5, 2.8/1.8, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0	35	150μA	75			X	X	1.6x1.6*	
MIC5370	150mA	150mA	2.3	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 3.0/1.8, 3.0/2.6, 3.0/2.8, 3.0/3.0, 3.3/1.8, 3.3/2.6, 3.3/2.8, 3.3/3.0, 3.3/3.3	155	32μA	60			X		1.6x1.6*	

# Power Management Selection Guide

## Dual LDOs

Bold = New P/N	I <sub>OUT</sub>		V <sub>IN</sub>		V <sub>OUT</sub> (V)	V <sub>D-OUT</sub> Typ (mV)	I <sub>GND</sub> Typ	PSRR (dB)	Rev Bat	PWR Good	V <sub>OUT</sub> ≤1.2V	μCap	By- Bias Cap	* = Reduced height pkg Package
	#1	#2	Min (V)	Max (V)										
MIC5371	150mA	150mA	2.5	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.5, 2.8/1.8, 2.8/2.8, 3.0/2.8, 3.0/3.0, 3.3/1.8, 3.3/1.8, 3.3/3.0, 3.3/3.3	155	32μA	60				X		1.6x1.6*
MIC5380	150mA	150mA	2.5	5.5	1.8/1.2, 2.6/2.0, 2.7/2.7, 2.8/1.2, 2.8/1.8, 3.0/3.0, 3.3/3.3	155	32μA	60				X		1x1*
MIC5381	150mA	150mA	2.5	5.5	1.8/1.2, 2.8/1.2, 2.8/1.8, 3.0/3.0, 3.3/3.3	155	32μA	60				X		1x1*
MIC5264	150mA	150mA	2.7	5.5	2.5/1.8, 2.6/1.8, 2.6/2.6, 2.8/1.5, 2.8/1.8, 2.8/2.5, 2.8/2.6, 2.8/2.8, 2.85/1.8, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.6, 2.9/2.6, 3.0/1.8, 3.0/2.5, 3.0/2.8, 3.0/3.0, 3.3/3.0, 3.3/1.8, 3.3/2.5, 3.3/3.3	210	75μA	64				X	X	2.5x2.5
MIC5254	150mA	150mA	2.7	6.0	3.3/2.5	135	96μA	60		X		X		MSOP-10
<b>MIC5388</b>	200mA	200mA	2.5	5.5	3.3/1.8, 2.8/2.8, 2.8/2.7, 2.8/1.8, 2.8/1.2, 1.8/1.2	175	32μA	73			X			CSP-6 (1.5x1)
<b>MIC5389</b>	200mA	200mA	2.5	5.5	3.3/1.8, 2.8/2.8, 2.8/2.7, 2.8/1.8, 2.8/1.2, 1.8/1.2	175	32μA	73			X			CSP-6 (1.5x1)
MIC2210	150mA	300mA	2.25	5.5	1.5/2.8, 1.8/3.3, 2.8/1.6, 2.8/3.0, 3.0/3.3, 3.3/3.3	124/240	48/60μA	60				X	X	3x3
MIC2211	150mA	300mA	2.25	5.5	1.5/1.8, 1.5/2.8, 1.5/2.85, 1.5/2.9, 1.5/3.1, 1.6/2.8, 1.6/2.9, 1.6/3.3, 1.8/2.5, 1.8/2.6, 1.8/2.8, 1.8/2.9, 1.8/3.0, 1.8/3.3, 1.9/2.8, 2.0/3.0, 2.5/1.8, 2.5/1.9, 2.5/2.8, 2.5/3.0, 2.5/3.3, 2.6/1.8, 2.6/2.85, 2.6/3.0, 2.7/1.8, 2.7/3.0, 2.8/1.5, 2.8/1.6, 2.8/1.8, 2.8/2.5, 2.8/2.8, 2.8/3.0, 2.8/3.3, 2.85/2.85, 2.85/3.3, 2.9/1.5, 2.9/2.9, 3.0/1.6, 3.0/2.7, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.0/3.3, 3.3/1.8, 3.3/2.8, 3.3/3.3, 3.6/3.6, Adj/Adj	124/240	48/60μA	60				X	X	3x3
MIC2212	150mA	300mA	2.25	5.5	1.6/2.8, 1.6/3.3, 1.8/2.6, 1.8/2.7, 1.8/2.8, 1.8/3.3, 1.85/2.85, 1.85/2.9, 2.5/3.3, 2.6/2.8, 2.6/2.85, 2.7/2.8, 2.7/2.9, 2.7/3.0, 2.8/2.6, 2.8/2.8, 2.8/3.0, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.0/3.3, 3.3/1.8, 3.3/2.5, 3.3/2.8, 3.3/3.6	124/240	48/60μA	60		X		X	X	3x3
MIC2213	150mA	300mA	2.25	5.5	1.8/2.85, 2.5/3.3, Adj/Adj	124/240	48/60μA	60		X		X	X	3x3, 4x4
MIC2214	150mA	300mA	2.25	5.5	1.5/2.8, 1.6/2.8, 1.6/3.0, 1.6/3.3, 1.8/2.6, 1.8/2.7, 1.8/2.8, 1.8/2.9, 1.8/3.0, 1.8/3.3, 1.85/2.6, 1.85/2.65, 1.85/2.7, 1.85/2.85, 1.85/2.9, 2.5/1.8, 2.5/2.8, 2.5/3.0, 2.5/3.1, 2.6/2.6, 2.6/2.8, 2.6/2.85, 2.6/3.0, 2.7/2.8, 2.7/3.0, 2.8/2.8, 2.8/3.0, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.3, 3.0/1.6, 3.3/1.8, 3.3/2.8, 3.3/1.6, Adj/Adj	124/240	48/60μA	60		X		X	X	3x3, 4x4
MIC2219	150mA	300mA	2.25	5.5	3.0/3.3	120	48μA	60				X	X	3x3
MIC5311	300mA	300mA	2.5	5.5	1.8/2.8, 1.85/2.6, 2.85/2.7	120	28μA	60				X	X	3x3
MIC5312	300mA	300mA	2.5	5.5	1.8/2.8, 1.85/2.6	120	28μA	60		X		X	X	3x3
MIC5313	300mA	300mA	1.7	5.5	1.5/1.0, 1.5/1.1, 1.5/1.2, 1.5/1.3, 1.5/1.4, 1.5/1.5, 1.8/1.2, 1.8/1.8	85	30μA	65			X	X	X	2x2*
MIC5314	300mA	300mA	1.7	5.5	1.5/1.0, 1.5/1.1, 1.5/1.2, 1.5/1.3, 1.5/1.4, 1.5/1.5, 1.8/1.2, 1.8/1.8	85	30μA	65		X	X	X	X	2.5x2.5*
MIC5315	300mA	300mA	1.7	5.5	1.5/(1.2/1.0), 1.5/(1.3/1.0), 1.8/(1.6/1.1), 1.8/(1.8/1.0)	85	30μA	65			X	X	X	2x2*
MIC5316	300mA	300mA	1.7	5.5	1.5/(1.2/1.0), 1.5/(1.3/1.0), 1.8/(1.6/1.1), 1.8/(1.8/1.0)	85	30μA	65		X	X	X	X	2.5x2.5*
MIC5330	300mA	300mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3	75	85μA	70				X	X	2x2
MIC5331	300mA	300mA	2.3	5.5	1.8/1.2, 2.5/1.2, 2.8/2.8, 2.8/2.85, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0	120	40μA	65				X		2x2*
MIC5332	300mA	300mA	2.3	5.5	1.8/1.2, 2.5/1.2, 2.8/2.8, 2.8/2.85, 2.85/2.85, 3.0/2.8, 3.0/2.85, 3.0/3.0	120	40μA	65		X		X		2x2*
MIC5333	300mA	300mA	2.3	5.5	2.5/1.2, 2.8/2.8, 2.8/2.85, 2.85/2.85, 3.0/2.85, 3.0/3.0	120	40μA	65		X		X		2.5x2.5*
MIC5335	300mA	300mA	2.3	5.5	1.8/1.5, 1.8/1.8, 1.8/1.6, 2.5/1.8, 2.5/2.5, 2.6/1.85, 2.6/1.8, 2.7/2.7, 2.8/1.5, 2.8/1.8, 2.8/2.6, 2.8/2.8, 2.85/1.85, 2.85/2.6, 2.85/2.85, 2.9/1.5, 2.9/1.8, 2.9/2.9, 3.0/1.8, 3.0/2.5, 3.0/2.6, 3.0/2.8, 3.0/2.85, 3.0/3.0, 3.3/1.5, 3.3/1.8, 3.3/2.5, 3.3/2.6, 3.3/2.7, 3.3/2.8, 3.3/2.85, 3.3/2.9, 3.3/3.0, 3.3/3.2, 3.3/3.3	75	90μA	65				X		1.6x1.6*
MIC5338	300mA	300mA	2.5	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.8, 3.3/2.8	220	38μA	55			X	X		1.6x1.6*
MIC5339	300mA	300mA	2.5	5.5	1.2/1.0, 1.8/1.2, 2.8/1.2, 2.8/1.8, 3.3/2.8	220	38μA	55			X	X		1.6x1.6*
<b>MIC5350</b>	300mA	500mA	2.6	5.5	2.8/1.8, 2.8/2.8, 3.0/1.8, 3.3/1.8, 3.3/2.8	75/125	95μA	50				X	X	2x2*

# Power Management Selection Guide

## Dual LDOs

Bold = New P/N	I <sub>OUT</sub>		V <sub>IN</sub>		V <sub>OUT</sub> (V)	V <sub>D-OUT</sub> Typ (mV)	I <sub>GND</sub> Typ	PSRR (dB)	Rev Bat	PWR Good	V <sub>OUT</sub> ≤1.2V	μCap	By- Bias Cap	* = Reduced height pkg Package
	#1	#2	Min (V)	Max (V)										
MIC5212	500mA	500mA	4.0	16	3.3/2.5	350	1.5mA	75				X		SOIC-8
<b>MIC5355</b>	500mA	500mA	2.5	5.5	1.8/1.2, 2.5/1.8, 3.3/1.0, 3.3/1.2, 3.3/1.8	350	38μA	55				X		eMSOP-8
<b>MIC5356</b>	500mA	500mA	2.5	5.5	1.8/1.2, 2.5/1.8, 3.3/1.0, 3.3/1.2, 3.3/1.8	350	38μA	55				X		eMSOP-8
<b>MIC5357</b>	500mA	500mA	2.6	5.5	1.8/1.5, 2.8/1.8, 3.3/1.8, 3.3/2.8	130	95μA	70				X	X	eMSOP-8
MIC68220	2.0A	2.0A	1.65	5.5	Adj/Adj	300	15mA	40		X	X	X		4x5

## Multi-Channel LDOs

Bold = New P/N	I <sub>OUT</sub>				V <sub>IN</sub>		V <sub>OUT</sub> (V)	V <sub>D-OUT</sub> Typ (mV)	I <sub>GND</sub> Typ	PSRR (dB)	PWR Good	V <sub>OUT</sub> ≤1.2V	μCap	By- Bias Cap	* = Reduced height pkg Package
	#1	#2	#3	#4	Min (V)	Max (V)									
MIC5385	150mA	150mA	150mA		2.5	5.5	3.3/1.8/1.5	180	32μA/LDO	70			X		2x2*
MIC5387	150mA	150mA	150mA		2.5	5.5	1.8/2.8/1.8, 1.8/2.8/2.8, 3.3/1.8/1.2, 3.3/1.8/1.5	180	32μA/LDO	70			X		1.6x1.6*
MIC2215	250mA	250mA	250mA		2.25	5.5	2.8/2.8/2.8, 3.0/2.8/2.8, 3.0/3.0/2.8, 3.0/3.0/1.8, 3.0/3.0/3.0, Adj/Adj/Adj	100	110μA/LDO	70			X	X	4x4
MIC5373	200mA	200mA	200mA		1.7	5.5	2.8/1.8/1.2	170	32μA/LDO	55	X	X	X		2.5x2.5*
MIC5383	200mA	200mA	200mA		1.7	5.5	2.8/1.8/1.2	170	32μA/LDO	55	X	X	X		2.5x2.5*
MIC5374	200mA	200mA	200mA	1mA	1.7	5.5	3.3/2.5/1.8/1.0	170	10μA/LDO	55	X	X	X		2.5x2.5*
MIC5384	200mA	200mA	200mA	1mA	1.7	5.5	2.8/1.8/1.2/1.2	170	10μA/LDO	55	X	X	X		2.5x2.5*

## LDO Controllers

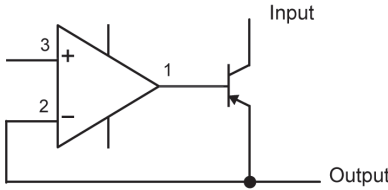
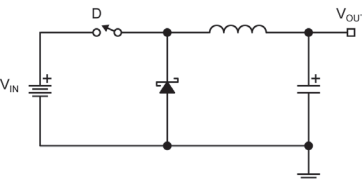
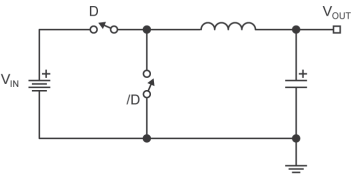
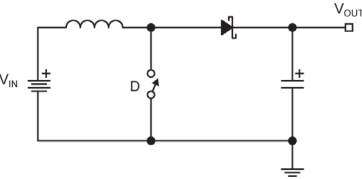
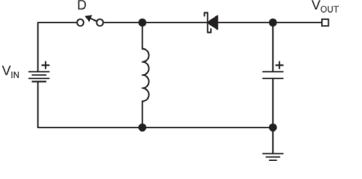
Bold = New P/N	I <sub>OUT</sub>	V <sub>IN</sub>		V <sub>OUT</sub> (V)	I <sub>GND</sub> Typ (mA)	Vdropout (Typ)	Tol (Typ) %	Power Good	V <sub>OUT</sub> ≤1.2V	μCap	Internal Charge Pump	External N-Ch MOSFET	Vref (V)	Comments	Package
		Min (V)	Max (V)												
MIC5156	Adj	3.0	36.0	3.3, 5.0, Adj	2.7	Very Low	±1	X				X	1.235		PDIP-8, SOIC-8
MIC5157	Adj	3.0	36.0	3.3, 5.0, 12	4.5	Very Low	±1	X			X	X	1.235		PDIP-8, SOIC-8
MIC5158	Adj	3.0	36.0	5.0, Adj	4.5	Very Low	±1	X			X	X	1.235		PDIP-8, SOIC-8
MIC5159	Adj	1.65	5.5	1.8, 3.0, Adj	10	Very Low	±1			X		X	1.235		SOT23-6
MIC5190	Adj	0.9	5.5	Adj down to 0.5V	15	<25mV	±1		X	X		X	0.5	>40dB PSRR @ 500KHz	MSOP-10, 3x3
MIC5191	Adj	1.0	5.5	Adj down to 1.0V	15	<25mV	±1		X	X		X	1.0	>40dB PSRR @ 500KHz	MSOP-10, 3x3

## HELDO® (High Efficiency LDO)

Bold = New P/N	I <sub>OUT</sub>	V <sub>IN</sub>		V <sub>OUT</sub> (V)	Output Noise	PSRR [dB]	Vdropout (Typ)	Comments	Package
		Min (V)	Max (V)						
MIC38150	1.5A	3.0	5.5	Adj. to 1V	2mV @ 1.5A	70	0.85V	Sync Buck w/ Internal Inductor + Post Regulating LDO, Low Noise, easy to use	4x6
MIC38300	2.2A	3.0	5.5	Adj. to 1V	2mV @ 1.5A	70	0.85V	Sync Buck w/ Internal Inductor + Post Regulating LDO, Low Noise, easy to use	4x6

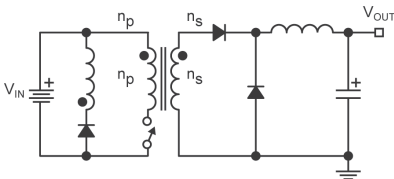
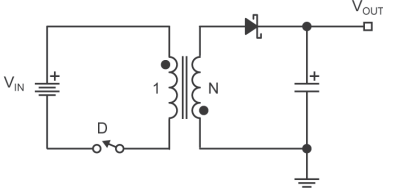
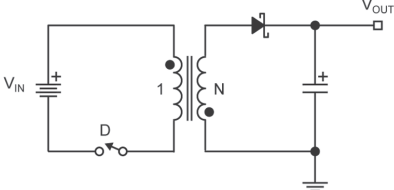
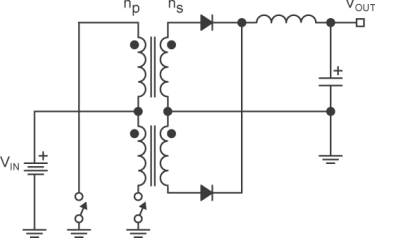
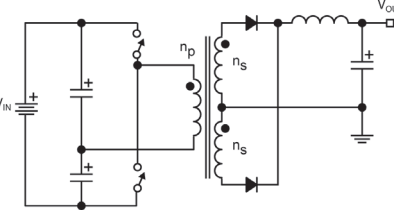
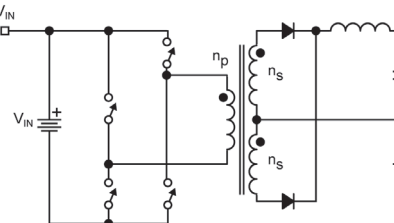


# Voltage Regulator DC-to-DC Topologies

	Pros	Cons
 <p><b>Linear Regulator</b></p>	<p>Only Steps Down (<math>V_{OUT} &lt; V_{IN}</math>)</p> <ul style="list-style-type: none"> <li>- Inexpensive</li> <li>- Very Small</li> <li>- Low Noise/EMI</li> <li>- Ideal for:               <ul style="list-style-type: none"> <li>- 3.3V to 2.5V</li> <li>- 2.5V to 1.8V</li> <li>- 1.8V to 1.2V</li> </ul> </li> </ul>	<p>Inefficient at high input-to-output voltage differential</p> <p><math>Eff = V_{OUT}/V_{IN}</math></p> <p>Note: If a linear regulator gets too hot, then use a buck switching regulator instead of the new HELDO® MIC38300.</p>
 <p><b>Buck Regulator</b></p>	<p>Only Steps Down (<math>V_{OUT} &lt; V_{IN}</math>)</p> <ul style="list-style-type: none"> <li>- Lowest Peak Current</li> <li>- Only One Switch Voltage Drop</li> <li>- Low-Ripple Current In</li> <li>- Output-Filter Capacitor</li> <li>- Simple Inductor</li> <li>- Low Switch-Stress Voltage</li> </ul> <p>Eff ≈ +85%</p>	<p>High-Side Switch</p> <p><math>I_{SW} (Avg) \approx I_{OUT}</math></p> <p><math>DC \approx \frac{V_{OUT}}{V_{IN} \times Eff}</math></p>
 <p><b>Synchronous Buck Regulator</b></p>	<p>(Internal Switch)</p> <ul style="list-style-type: none"> <li>- Highest Efficiency (+90%)</li> <li>- Highest Efficiency Step Down</li> <li>- Pros are the same as Buck</li> <li>- High Output Current (up to 20A)</li> </ul>	<p>Two Switches</p> <p><math>I_{SW} (Avg) \approx I_{OUT}</math></p> <p><math>DC \approx \frac{V_{OUT}}{V_{IN} \times Eff}</math></p>
 <p><b>Boost</b></p>	<p>Only Steps Down (<math>V_{OUT} &lt; V_{IN}</math>)</p> <ul style="list-style-type: none"> <li>- Low Peak Current</li> <li>- Low-Side Switch</li> <li>- Simple Inductor</li> <li>- Low Switch-Stress Voltage</li> </ul> <p>Eff ≈ 85%</p>	<p>Output can't be completely turned off. No short-circuit protection.</p> <p><math>I_{SW} (Avg) \approx \frac{I_{OUT}}{1 - DC}</math></p> <p><math>DC \approx \frac{V_{OUT} - (V_{IN} \times Eff)}{V_{OUT}}</math></p>
 <p><b>Inverter/Buck-Boost</b></p>	<p>Negative Output Only</p> <ul style="list-style-type: none"> <li>- Simple Inductor</li> </ul> <p>Eff ≈ 85%</p>	<p>High-Side Switch High Peak Currents</p> <p><math>I_{SW} (Avg) \approx \frac{I_{OUT}}{1 - DC}</math></p> <p><math>DC \approx \frac{V_{OUT}}{V_{OUT} + (V_{IN} \times Eff)}</math></p>



# Voltage Regulator DC-to-DC Topologies

	Pros	Cons
 <p><b>Forward</b></p>	<p>Step Up and Down</p> <ul style="list-style-type: none"> <li>- Isolated Outputs</li> <li>- Low Side Switch</li> </ul> <p>Low Input/Output Ripple Eff ≈ 90%</p>	$I_{SW} (Avg) \approx \frac{n_s}{n_p} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{(Eff \times V_{IN})} \times \frac{n_p}{n_s}$
 <p><b>Flyback Applications</b></p>	<p>Step Up and Down</p> <ul style="list-style-type: none"> <li>- Isolated Outputs</li> <li>- Multiple Outputs</li> <li>- Negative Output</li> <li>- High Output Voltage</li> <li>- Low-Side Switch</li> </ul> <p>Eff ≈ 80%</p>	<p>Transformer instead of Inductor. High Peak Current. High Switch-Stress Voltage.</p> $I_{SW} (Avg) \approx \frac{I_{OUT}}{1 - DC}$ $DC \approx \frac{V_{OUT}}{V_{OUT} + N \cdot V_{IN} \cdot Eff}$
 <p><b>SEPIC</b></p>	<p>Step Up and Down</p> <ul style="list-style-type: none"> <li>- Low-Side Switch</li> </ul> <p>Eff ≈ 80%</p>	<p>High Peak Currents 2 inductors or coupled inductor. High Switch-Stress Voltage.</p> $I_{SW} (Avg) \approx \frac{V_{OUT} \times I_{OUT} + I_{OUT}}{V_{OUT} \times Eff}$ $DC \approx \frac{V_{OUT}}{V_{OUT} + (V_{IN} \times Eff)}$
 <p><b>Push-Pull</b></p>	<p>Step Up and Down</p> <ul style="list-style-type: none"> <li>- Isolated Outputs</li> <li>- Low Side Switches</li> </ul> <p>Low Input/Output Ripple Eff ≈ 94%</p>	$I_{SW} (Avg) \approx \frac{n_s}{n_p} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{2(Eff \times V_{IN})} \times \frac{n_p}{n_s}$
 <p><b>Half-Bridge</b></p>	<p>Step Up and Down</p> <ul style="list-style-type: none"> <li>- Isolated Outputs</li> <li>- Low FET Stress</li> <li>- Low Transformer Leakage</li> </ul> <p>Eff ≈ 95%</p>	$I_{SW} (Avg) \approx \frac{n_s}{n_p} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{2(Eff \times V_{IN})} \times \frac{n_p}{n_s}$
 <p><b>Full-Bridge</b></p>	<p>Step Up and Down</p> <ul style="list-style-type: none"> <li>- Isolated Outputs</li> <li>- High Power</li> <li>- Low FET Stress</li> </ul> <p>Eff ≈ 95%</p>	$I_{SW} (Avg) \approx \frac{n_s}{n_p} \times I_{OUT}$ $DC \approx \frac{V_{OUT}}{2(Eff \times V_{IN})} \times \frac{n_p}{n_s}$

# Power Management Selection Guide

## Step-Down Switching Regulators (Internal Switches)

Bold = New P/N	VIN			V <sub>OUT</sub> (V)	V <sub>fb</sub> (V)	V <sub>OUT</sub> Max (V)	Synch- ronous	HLL Mode	LOWQ Mode	Skip Mode	Sync Pin	Pwr Good	Soft Start	Tol (Typ) %	Freq (Hz)	Duty Cycle Max	* = Reduced height package Package
	I <sub>OUT</sub> (A)	Min (V)	Max (V)														
MIC23030	0.4	2.7	5.5	1.0, 1.2, 1.5, 1.8, Adj	0.62	.80*Vin	X	X						±2.5	8.0M	80%	1.6x1.6
MIC23031	0.4	2.7	5.5	1.0, 1.2, 1.5, 1.8, Adj	0.62	.89*Vin	X	X						±2.5	4.0M	89%	1.6x1.6
MIC23050	0.6	2.7	5.5	1.0, 1.2, 1.8, 3.3			X	X						±2.5	4.0M	89%	2x2
MIC23051	0.6	2.7	5.5	1-1.2, 1-1.8, 1.15-1.4, 0.95-1.25			X	X				X		±2.5	4.0M	89%	2x2
MIC23150	2.0	2.7	5.5	1.0, 1.2, 1.35, 1.8, 3.3		5.5	X	X				X		±2.5	4.0M	80%	2x2
MIC23153	2.0	2.7	5.5	1.8, Adj	0.62	.89*Vin	X	X				X	X	±2.5	4.0M	80%	2.5x2.5
<b>MIC23155</b>	2.0	2.7	5.5	1.8, Adj	0.62		X	X				X	X	±2.5	3.0M		2.5X2.5
MIC2245	0.5	2.7	5.5	Adj	1.0	5.5	X		X					±2	4M	100%	3x3
MIC2285	0.5	2.7	5.5	Adj	1.0	5.5	X		X					±2	8.0M	100%	3X3
MIC2205	0.6	2.7	5.5	Adj, 1.58	1.0	5.5	X		X					±2	2.0M	100%	3x3
MIC2206	0.6	2.7	5.5	1.2, 1.8	1.0	5.5	X		X					±2	2.0M	100%	3x3
MIC2285A	0.6	2.7	5.5	Adj	1.0	5.5	X		X					±2	8.0M	100%	3X3*
MIC2203	0.3	2.3	5.5	Adj	0.5	5.5	X				X			±2.5	1.0M	100%	3X3
MIC2202	0.6	2.3	5.5	Adj	0.5	Vin	X				X			±2.5	1.6M-2.5M	100%	MSOP-10, 3x3
MIC2204	0.6	2.3	5.5	Adj	1.0	5.5	X				X			±2	2.0M	100%	MSOP-10, 3x3
LM2574	0.5	4.0	40	3.3, 5.0, 12, Adj	1.23	37								±1	52K	98%	DIP-8
LM2575	1.0	4.0	40	3.3, 5.0, 12, Adj	1.23	37								±1	52K	98%	DIP-16, TO220-5, TO263-5, SOP-24
LM2576	3.0	4.0	40	3.3, 5.0, 12, Adj	1.23	37								±1	52K	98%	TO220-5, TO263-5
MIC4574	0.5	4.0	24	3.3, 5.0, Adj	1.23	20								±3	200K	95%	DIP-8
MIC4575	1.0	4.0	24	3.3, 5.0, Adj	1.23	20								±3	200K	95%	TO220-5, TO263-5
MIC4576	3.0	4.0	24	3.3, 5.0, Adj	1.23	20								±3	200K	95%	TO220-5, TO263-5
MIC4680	1.3	4.0	34	3.3, 5.0, Adj	1.23	.97*Vin								±1	200K	97%	SOIC-8
MIC4690	1.3	4.0	34	Adj	1.23	.93*Vin								±1	500K	93%	SOIC-8
MIC4681	2.0	4.0	30	3.3, 5.0, Adj	1.25	.95*Vin								±1	400K	95%	SOIC-8
MIC4682	2.0	4.0	34	3.3, 5.0, Adj	1.23	.95*Vin								±1	200K	95%	SOIC-8
MIC4684	2.0	4.0	30	Adj	1.24	.94*Vin								±2	200K	94%	SOIC-8
MIC4685	3.0	4.0	30	3.3, 5.0, Adj	1.24	.94*Vin								±2	200K	94%	SPAK-7
MIC2179	1.5	4.5	16.5	3.3, 5.0, Adj	1.245	16.5	X			X	X	X		±3	200K	100%	SSOP-20
MIC4721	1.5	2.7	5.5	Adj	1.0	5.5						X	X	±2	2.0M	100%	MSOP-10
MIC4720	2.0	2.7	5.5	Adj	1.0	5.5						X	X	±2	2.0M	100%	eMSOP-10, 3x3
MIC4722	3.0	2.7	5.5	Adj	1.0	5.5						X	X		2.7M	100%	3x3
MIC4723	3.0	2.7	5.5	Adj	1.0	5.5						X	X	±2	2.0M	100%	eMSOP-10, 3x3
MIC4724	3.0	3.0	6.0	Adj	1.0	5.5						X	X	±2	2.0M	100%	eMSOP-10
MIC2177	2.5	4.5	16.5	3.3, 5.0, Adj	1.245	16.5	X			X	X			±3	200K	100%	WSOIC-20
MIC2178	2.5	4.5	16.5	3.3, 5.0, Adj	1.245	16.5	X			X	X	X		±3	200K	100%	WSOIC-20
<b>MIC2267</b>	2.0	3.0	5.5	Adj	1.0	5.5	X					X	X	±2	400K-1.5M	100%	3x3
MIC2207	3.0	2.7	5.5	Adj	1.0	5.5	X					X	X	±2	2.0M	100%	3X3
MIC2208	3.0	2.7	5.5	Adj	1.0	5.5	X					X		±1	1.0M	100%	3x3
MIC22200	2.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	800K-1.2M	100%	3x3
MIC22205	2.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	800K-1.2M	100%	3x3
MIC22400	4.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±1	300K-4M	100%	eTSSOP-20, 3x4
<b>MIC22405</b>	4.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±1	300K-4M	100%	eTSSOP-20, 3x4
MIC22600	6.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±1	1.0M	100%	eTSSOP-24, 4x4
MIC22601	6.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±1	4.0M	100%	4x4
MIC22602	6.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	1.0M	100%	4x4
MIC22700	7.0	2.6	5.5	Adj	0.7	5.5	X					X	X	±2	1.0M	100%	4x4
<b>MIC22705</b>	7.0	2.9	5.5	Adj	0.7	5.5	X					X	X	±2	1.0M	100%	4x4

# Power Management Selection Guide

## Step-Down Switching Regulators (Internal Switches)

Bold = New P/N	VIN				V <sub>OUT</sub> (V)	Vfb (V)	V <sub>OUT</sub> Max (V)	Synch-ronous	HLL Mode	LOWQ Mode	Skip Mode	Sync Pin	Pwr Good	Soft Start	Tol (Typ) %	Freq (Hz)	Duty Cycle Max	* = Reduced height package
	I <sub>OUT</sub> (A)	Min (V)	Max (V)	Adj														
MIC22950	10	2.6	5.5	Adj		0.7	5.5	X					X	X	±2	400K-2M	100%	5x5
MIC26400	5.0	4.5	26	Adj		0.8	5.5	X						X	±1	300K	87%	5x6
MIC26600	7.0	4.5	26	Adj		0.8	5.5	X						X	±1	300K	87%	5x6
MIC26950	12	4.5	26	Adj		0.8	5.5	X						X	±1	300K	87%	5x6
<b>MIC26601</b>	6.0	4.5	28	Adj		0.8	5.5	X					X	X	±1	600K	82%	5x6
<b>MIC26901</b>	9.0	4.5	28	Adj		0.8	5.5	X					X	X	±1	600K	82%	5x6
<b>MIC261201</b>	12	4.5	28	Adj		0.8	5.5	X					X	X	±1	600K	82%	5x6
<b>MIC26603</b>	6.0	4.5	28	Adj		0.8	5.5	X	X				X	X	±1	600K	82%	5x6
<b>MIC26903</b>	9.0	4.5	28	Adj		0.8	5.5	X	X				X	X	±1	600K	82%	5x6
<b>MIC261203</b>	12	4.5	28	Adj		0.8	5.5	X	X				X	X	±1	600K	82%	5x6
MIC27600	7.0	4.5	36	Adj		0.8	5.5	X						X	±1	300K	87%	5x6
MIC28500	4.0	30	75	Adj		0.8	5.5	X						X	±1	100-500K	82%	5x6

## Step-Down Switching Regulators (External Switches)

Bold = New P/N	VIN				Vfb (V)	V <sub>OUT</sub> Max (V)	Synch-ronous	HLL Mode	LOWQ Mode	Skip Mode	Sync Pin	Pwr Good	Soft Start	Tol (Typ) %	Freq (Hz)	Duty Cycle Max	* = Reduced height package
	Min (V)	Max (V)	V <sub>OUT</sub> (V)	Adj													
MIC2124	3.0	18		Adj	0.8	5.1	X					X	±1	300K	93%	MSOP-10	
MIC2130-1	8.0	40		Adj	0.7		X				X	X	±2	150K	92%	TSSOP-16, 4x4	
MIC2130-4	8.0	40		Adj	0.7		X				X	X	±2	400K	80%	TSSOP-16, 4x4	
MIC2131-1	8.0	40		Adj	0.7		X				X	X	±2	150K	92%	TSSOP-16, 4x4	
MIC2131-4	8.0	40		Adj	0.7		X				X	X	±2	400K	80%	TSSOP-16, 4x4	
MIC2164	3.0	28		Adj	0.8	5.5	X					X	±1	300K	87%	MSOP-10	
MIC2164-2	3.0	28		Adj	0.8	5.5	X					X	±1	600K	74%	MSOP-10	
MIC2164-3	3.0	28		Adj	0.8	5.5	X					X	±1	1.0M	66%	MSOP-10	
MIC2164C	3.0	28		Adj	0.8	5.5	X					X	±3	270K	87%	MSOP-10	
MIC2165	4.5	28		Adj	0.8	5.5	X				X	X	±1	600K	82%	MSOP-10	
MIC2166	4.5	28		Adj	0.8	5.5	X				X	X	±1	600K	82%	MSOP-10	
MIC2174-1	3.0	40		Adj	0.8	5.5	X					X	±1	300K	87%	MSOP-10	
MIC2174C-1	3.0	40		Adj	0.8	5.5	X					X	±3	270K	87%	MSOP-10	
<b>MIC2176-1</b>	4.5	75		Adj	0.8	-	X					X	±1	100K	96%	MSOP-10	
<b>MIC2176-2</b>	4.5	75		Adj	0.8	-	X					X	±1	200K	93%	MSOP-10	
<b>MIC2176-3</b>	4.5	75		Adj	0.8	-	X					X	±1	300K	89%	MSOP-10	
MIC2182	4.5	32	3.3, 5.0,	Adj	1.245	6.0	X		X	X		X	±1	300K	86%	SOIC-16, SSOP-16	
MIC2183	2.9	14		Adj	1.245	12	X				X	X	±1	400K	100%	SOP-16, QSOP-16	
MIC2184	2.9	14		Adj	1.245	12	X				X	X	±1	400K	100%	SOP-16, QSOP-16	
MIC2193	2.9	14		Adj	1.245		X						±1	400K	100%	SOIC-8	
MIC2198	4.5	32		Adj	0.8	6.0	X						±1	500K	76%	4x4	
MIC2199	4.5	32		Adj	0.8	6.0	X						±1	300K	85%	4x4	

# Power Management Selection Guide

## Multiple Output - Step-Down Switching Regulator (Internal Switches)

Bold = New P/N	# of Outputs	I <sub>OUT</sub> (A)	VIN		V <sub>OUT</sub> (V)	V <sub>fb</sub> (V)	V <sub>OUT</sub> Max (V)	Synchronous	HLL Mode	Sync Pin	Pwr Good	Soft Start	Tol (Typ) %	Freq (Hz)	Duty Cycle Max	* = Reduced height package Package
			Min (V)	Max (V)												
MIC4742	2	2/2	2.9	5.5	Adj/Adj	0.6	5.5						±2	2.0M	100%	3x3, SSOP*
MIC4744	2	2/2	2.9	5.5	Adj/Adj	0.6	5.5						±2	4.0M	100%	3x3, SSOP*
MIC4782	2	2/2	3.0	6.0	Adj/Adj	0.607	6						±3	1.8M	100%	3x3
MIC2238	2	0.8/0.8	2.5	5.5	1.28/1.28, 1.8/1.2, 1.8/1.545, 1.8/1.575, 1.8/3.3, 1.8/1.6, 2.5/1.2, 3.3/1.2, 3.3/3.3, Adj/Adj	0.8	5.5	X			X	X	±2	2.5M	100%	3x3
MIC23250	2	0.4/0.4	2.7	5.5	Adj/Adj	0.72	.86*Vin	X	X			X	±2.5	4.0M	86%	2x2*, 2.5x2.5*
MIC23254	2	0.4/0.4	2.5	5.5	0.9/1.1, 1.2/1.0, 1.2/1.6, 1.2/1.8, 1.2/3.3, 1.575/1.8, 2.6, 3.3, Adj/Adj		.86*Vin	X	X			X	±2.5	4.0M	86%	2x2*
<b>MIC25400</b>	2	2/2	4.5	13.2	1.0/1.8	0.7	9.24				X	X	±2	1.0M	70%	4x4

## Multiple Phase - Step-Down Switching Regulator (External Switches)

Bold = New P/N	# of Outputs	# of Phases	I <sub>OUT</sub>	VIN		V <sub>OUT</sub> (V)	V <sub>fb</sub> (V)	V <sub>OUT</sub> Max (V)	Synchronous	Sync Pin	Pwr Good	Soft Start	Tol (Typ) %	Freq (Hz)	Duty Cycle Max	* = Reduced height package Package
				Min (V)	Max (V)											
<b>MIC2150</b>	2	2	20A/Phase	4.5	14.5	Adj/Adj	0.7	12.03	X		X	X	±1	500K	80%	4x4
<b>MIC2151</b>	2	2	20A/Phase	4.5	14.5	Adj/Adj	0.7	12.03	X		X	X	±1	300K	83%	4x4
MIC2155	1	2	40A	4.5	14.5	Adj/Adj	0.7	3.6	X	X	X	X	±1	500K	80%	5x5
MIC2156	1	2	40A	4.5	14.5	Adj/Adj	0.7	3.6	X	X	X	X	±1	300K	80%	5x5

# Power Management Selection Guide

## Step-Up Switching Regulators (Internal Switches)

P/N	Topology				Peak SW (A)	V <sub>IN</sub>		V <sub>OUT</sub>		Synchronous	Int Diode	Soft Start	Tol (Typ) %	Freq (Hz)	OVP	Dithered	Package
	Boost	SEPIC	CUK	Fly Back		Min (V)	Max (V)	Min (V)	Max (V)								
MIC2141	X	X		X		2.2	14	2.8	20				±18	330K			SOT23-5
MIC2171	X			X	2.50	3.0	40	3.6	65				±2	100K			TO263
MIC2172	X	X		X	1.25	3.0	40	3.6	65				±2	100K			SOIC-8
<b>MIC2250</b>	X				0.90	2.5	5.5	3.0	32			X	±3	Var		X	2x2
<b>MIC2251</b>	X				0.8	2.5	5.5	3.0	37				±3	Var		X	SOT23-5*, 2x2
MIC2253-06	X				3.50	2.5	10	3.0	30			X	±3	1.0M	X		3x3
MIC2288	X				1.20	2.5	10	3.6	34				±1	1.2M	X		SOT23-5, 2x2
MIC2290	X	X		X	0.50	2.5	10	3.0	34		X		±1	1.2M	X		2x2
MIC2295	X	X	X	X	1.20	2.5	10	3.0	34				±1	1.2M	X		SOT23-5, 2x2
MIC2296	X	X	X	X	1.20	2.5	10	3.0	34				±1	600K	X		SOT23-5, 2x2
MIC2570	X				1.30	1.3	15	0.22	36				±5.5	20K			SOIC-8
MIC2571	X				0.8	0.9	15	0.8	36				±5.5	20K			
MIC2601	X				1.20	4.5	20	5.0	40			X	±2	1.2M	X		2x2
MIC2602	X				1.20	4.5	20	5.0	40			X	±2	2.0M	X		2x2
MIC2605	X				0.50	4.5	20	5.0	40		X	X	±2	1.2M	X		2x2
MIC2606	X				0.50	4.5	20	5.0	40		X	X	±2	2.0M	X		2x2
MIC2619	X				0.35	2.8	6.5	2.8	35				±3	1.2M	X		SOT23-6*
MIC3172	X	X	X	X	1.25	3.0	40	3.6	65				±1.6	100K			SOIC-8, DIP8

## Step-Up Switching Regulators (External Switches)

P/N	Topology				Peak SW (A)	V <sub>IN</sub>		V <sub>OUT</sub>		Synchronous	Skip Mode	Soft Start	Tol (Typ) %	Freq (Hz)	OVP	Package
	Boost	SEPIC	CUK	Fly Back		Min (V)	Max (V)	Min (V)	Max (V)							
MIC2185	X	X	X		Ext	2.9	14			X	X	X	±2	400K		SOIC-16, QSOP-16
MIC2186	X	X	X		Ext	2.9	14				X	X	±1	100/200/400K		SOIC-16, QSOP-16
MIC2196	X	X	X		Ext	2.9	14						±1	400K		SOIC-8

# Power Management Selection Guide

## Flyback/Forward Converters/Push-Pull Controllers for Isolated Applications

Bold = New P/N	V <sub>IN</sub>		Gate Drive (A)	V <sub>START</sub> (V)	V <sub>STOP</sub> (V)	Start-Up Current Max (μA)	Duty Cycle (Max)	Topology	Frequency	Package
	Min (V)	Max (V)								
MIC9130	9.0	180	1.0	9.0			50%	Forward/Flyback	Adj. to 1.5MHz	SOIC-16, QSOP-16
MIC9131	9.0	180	1.0	9.0			75%	Forward/Flyback	Adj. to 1MHz	SOIC-16, QSOP-16
MIC3808	8.3	15	0.5	12.5	8.3	130	50%	Push-Pull	Adj. to 1MHz	SOIC-8, MSOP-8
MIC3809	4.1	15	0.5	4.3	4.1	130	50%	Push-Pull	Adj. to 1MHz	SOIC-8, MSOP-8
MIC3838	8.3	15	0.5	12.5	8.3	130	50%	Push-Pull	Adj. to 1MHz	MSOP-10
MIC3839	4.1	15	0.5	4.3	4.1	130	50%	Push-Pull	Adj. to 1MHz	MSOP-10
MIC38C42	15.5	20	0.5	14.5	9.0	200	96%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, MSOP-8, SOIC-8, -14
MIC38C43	9.0	20	0.5	8.4	7.6	200	96%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, MSOP-8, SOIC-8, -14
MIC38C44	15.5	20	0.5	14.5	9.0	200	50%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, MSOP-8, SOIC-8, -14
MIC38C45	9.0	20	0.5	8.4	7.6	200	50%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, MSOP-8, SOIC-8, -14
MIC38HC42	15.5	20	1.0	14.5	9.0	200	96%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, SOIC-8, -14
MIC38HC43	9.0	20	1.0	8.4	7.6	200	96%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, SOIC-8, -14
MIC38HC44	15.5	20	1.0	14.5	9.0	200	50%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, SOIC-8, -14
MIC38HC45	9.0	20	1.0	8.4	7.6	200	50%	Forward/Flyback	Adj. to 500kHz	PDIP-8, -14, SOIC-8, -14
MIC38C42A (1)	15.5	20	0.5	14.5	9.0	200	96%	Forward/Flyback	Adj. to 500kHz	SOIC-8, MSOP-8
MIC38C43A (1)	9.0	20	0.5	14.5	9.0	200	96%	Forward/Flyback	Adj. to 500kHz	SOIC-8, MSOP-8
MIC38C44A (1)	15.5	20	0.5	14.5	9.0	200	50%	Forward/Flyback	Adj. to 500kHz	SOIC-8, MSOP-8
MIC38C45A (1)	9.0	20	0.5	14.5	9.0	200	50%	Forward/Flyback	Adj. to 500kHz	SOIC-8, MSOP-8

(1) Recommended for new designs

## Step-Down Switching Regulators (Internal Switches + Internal Inductor)

Bold = New P/N	I <sub>OUT</sub> (A)	VIN		V <sub>OUT</sub> (V)	V <sub>fb</sub> (V)	V <sub>OUT</sub> Max (V)	Synchronous	HLL Mode	LOWQ Mode	Pwr Good	Soft Start	Tol (Typ) %	Freq (Hz)	Duty Cycle Max	* = Reduced height package Package
		Min (V)	Max (V)												
MIC33030	0.4	2.7	5.5	1.2, 1.8, Adj	0.62	3.6	X	X				±2.5	8.0M	90%	2.5x2.0
MIC33050	0.6	2.7	5.5	1.0, 1.2, 1.8, 3.3, Adj	0.40	3.3	X	X				±2.5	4.0M	89%	3x3
MIC33153	1.2	2.7	5.5	1.2, Adj	0.62	3.6	X	X		X	X	±2.5	4.0M	80%	3x3.5
MIC3385	0.6	2.7	5.5	1.5, Adj	1.0	5.5	X		X			±1	8.0M	100%	3x3.5
MIC38150	1.5	3.0	5.5	Adj	1.0	V <sub>in</sub> -85	X					±2.5	~2.0M		4x6
MIC38300	3.0	3.0	5.5	Adj	1.0	V <sub>in</sub> -85	X					±2.5	~2.0M		4x6

# Power Management Selection Guide

## Power Management ICs (PMIC)

<b>Bold = New</b> P/N	DC/DC (mA)	I <sub>OUT</sub> LDO (mA)	V <sub>IN</sub> Min (V)	V <sub>IN</sub> Max (V)	DC/DC	V <sub>OUT</sub> LDO	HLL Mode	LOWQ Mode	Comments	* = Reduced height package Package
MIC2225	600	300	2.7	5.5	down to 1.0V	down to 0.8V			Digital Power Management IC, 2MHz DC/DC converter with LDO and independent enable, >95% efficiency.	2x2*
MIC23060	600	300	2.7	5.5	1.8V/3.3V	1.2V	X		4MHz 600mA DC/DC Regulator and 300mA LDO Regulator with flexible sequencing feature. DC/DC features HyperLight Load™. >95% efficiency.	2.5x2.5*
MIC2800	600	300/300	2.7	5.5	1.8V/3.3V	LDO1: 0.8V to (VDC/DC-VDD), LDO2: 0.8V to 3.6V		X	Digital Power Management IC, 2MHz DC/DC converter with two Linear Regulators. LDO1 is directly connected to the output of the DC/DC converter. POR/Power Good pin and LOWQ mode.	3x3
MIC2807	600	200/30	2.7	5.5	DAC cntrl, 0.3V to Vin	2.85V/2.85V			RF Power Management IC, 600mA DC/DC converter with DAC controlled output to power amplifier. 200mA RF LDO output current (provides bias voltage supply for PA), 30mA PA LDO (provides highly accurate PA reference voltage).	2.5x2.8
MIC2808	600	200/30	2.7	5.5	DAC cntrl, 0.3V to Vin	2.85V/2.85V			RF Power Management IC, 600mA DC/DC converter with DAC controlled output to power amplifier. 200mA RF LDO output. Reduced package size and LDO dropout compared to MIC2807.	2x2.5*
MIC2810	600	300/300	2.7	5.5	1.0V/2.0V	0.8V to 3.6V		X	Digital Power Management IC, 2MHz with two Linear Regulators. LDO1 has a separate VIN pin and can either post-regulate the DC/DC converter or be connect directly to the main input supply. POR/Power Good pin.	3x3
MIC2811	600	300/300	2.7	5.5	1.0V/2.0V	LDO1,2: 0.8V to 3.6V, LDO3: 1.0V to 3.9V			Digital Power Management IC, 2MHz DC/DC converter with 3 LDOs. Bypass cap for improved noise performance on LDO1 and LDO2. LDO1 and LDO2 have separate VIN pins. Separate enable pins.	3x3
MIC2821	600	300/300/300	2.7	5.5	1.0V/2.0V	LDO1,2: 0.8V to 3.6V, LDO3: 1.0V to 3.9V			Digital Power Management IC, 2MHz DC/DC converter with 3 LDOs. LDO1 and 2 have separate VIN pins. Independent enable for all four regulators.	3x3
MIC2826	500	150/150/150	2.7	5.5	I2C and Dynamic Scaling from 0.8V to 1.8V	I2C and Dynamic Scaling from 0.8V to 3.3V	X		4MHz DC/DC HyperLight Load™ converter with 1.8V to DVIN Adj. via I2C & Dynamic Voltage Scaling 3 LDOs. Fast-mode (400kHz) I2C Control for Startup, Enables and Output Voltages. Optional Default Startup Sequence and Voltages. Fault Monitoring Flag (IRQb).	2.5x2.5*
MIC2827	500	150/150	2.7	5.5	I2C and Dynamic Scaling from 0.8V to 1.8V	I2C and Dynamic Scaling from 0.8V to 3.3V	X		4MHz DC/DC HyperLight Load™ converter with Dynamic Voltage Scaling and 2 LDOs. Fast-mode (400kHz) I2C Control for Startup, Enables and Output Voltages. Optional Default Startup Sequence and Voltages. Fault Monitoring Flag (IRQb).	2.5x2.5
MIC2829	1000/300/600/ 600/800/800	11x200	2.7	5.5	DC/DCs: 0.8V to 1.8V	0.8V to 3.3V			Highly integrated PMIC for 3G/4G wireless data and portable applications. 6 buck regulators, 5 general purpose LDOs, 6 low noise regulators, SIM card level shifter, and PGOOD indicator with adjustable delay.	LGA-76, FBGA-85 (5.5x5.5mm)

\* Contact factory for additional voltage output options

## Sub-Power Management ICs (Sub-PMIC)

<b>Bold = New</b> P/N	Comments	Package
<b>MIC4555</b>	SIM Card Interface + Level Shifter with 50mA LDO	3x3

# Power Management Selection Guide

## Battery Chargers

Bold = New P/N	Charge Cell Type	Charge Voltage	Gate Voltage Accuracy	$V_{IN}$		$I_{GND}$ (Typ)	$I_{GND}$ Shutdown Typ ( $\mu A$ )	Vdropout +25°C (Typ) (mV)	Vdropout @ Tmax (mV)	Package
				Min (V)	Max (V)					
MIC79050	Li-Ion, 1 cell	4.2V	$\pm 0.75\%$	2.5	16	85 $\mu A$	3.0	380	600	MSOP, Power SOIC, SOT223
MIC79110	Li-Ion	4.2V, Adj.	$\pm 0.75\%$	2.5	16	2mA	0.1	375	550	3x3

## DDR Terminators

Bold = New P/N	$I_{OUT}$	$V_{IN}$		$V_{OUT}$ (V)	PWR Good	VTT Accuracy	External Transistor	Sync Buck	Freq	$\mu CaP$	Comments	Package
		Min (V)	Max (V)									
MIC5162	to 7A	1.35	6.0	1/2 of $V_{in}$		0.4mV	X			X		MSOP-10
MIC5163	to 7A	0.75	6.0	1/2 of $V_{in}$		0.4mV	X			X	Low Voltage	MSOP-10
MIC5164	to 7A	1.35	6.0	1/2 of $V_{in}$	X	0.4mV	X			X		MSOP-10
MIC5165	to 7A	0.75	6.0	1/2 of $V_{in}$	X	0.4mV	X			X	Low Voltage	MSOP-10
<b>MIC5167</b>	$\pm 6A$	2.6	5.5	Adj down to 0.35V	X	0.004		X	1MHz	X	High Efficiency Integrated Sync Buck	4x4

## SCSI Terminators

Bold = New P/N	Description	Package
MIC5204	$\pm 1\%$ , 500mA SCSI-II Terminator	SOIC-8, SOT223



# Power Management Selection Guide

## Electroluminescent (EL) Drivers

Bold = New P/N	V <sub>IN</sub>		Operating			Frequency	Features	* = Reduced height package Package
	Min (V)	Max (V)	V <sub>OUT</sub> (V <sub>pp</sub> )	I <sub>q</sub> (μA)	I <sub>q</sub> (μA)			
MIC4826	1.8	5.5	160	21	21	60Hz-1KHz	EL panels up to 3 sq in2	MSOP-8
MIC4827	1.8	5.5	180	21	21	60Hz-1KHz	EL panels up to 3 sq in2	MSOP-8
MIC4830	1.8	5.5	180	45	45	60Hz-1KHz	EL panels up to 4 sq in2 Lowest Audible Noise	MSOP-8, 3x3
MIC4832	1.8	5.5	220	45	45	60Hz-1KHz	EL panels up to 3 sq in2 Lowest Audible Noise	MSOP-8, 3x3
MIC4833	2.3	5.8	220	152	152	100Hz-1.5KHz	Independent control of two EL elements, up to 4 in2	3x3
MIC4834	2.3	5.8	220	152	152	100Hz-1.5KHz	For Two EL elements in parallel, up to 3 in2	MSOP-10, 3x3

## LED Backlight Drivers

Bold = New P/N	V <sub>IN</sub>		I <sub>lim</sub> (A)	V <sub>IN</sub> (Typ)	I <sub>q</sub> (Typ)	Int Diode	V <sub>fb</sub> (V)	Tol (%)	V <sub>OUT</sub> (V)	Duty Cycle (%)	Freq (Hz)	Comments	* = Reduced height package Package
	Min (V)	Max (V)											
MIC2142	2.2	16		85μA	1.28		±2	22	57%	330K			TSOT23-5
MIC2145	2.4	16	0.900	200μA	1.08		±2	16		450K	Hysteretic		MSOP-8, 3x3
MIC2282	0.9	15	0.750	120μA	0.220		±10	35	67%	200K	Single AA Boost		MSOP-8
MIC2287	2.5	10	0.750	2.5mA	0.095		±5	34	90%	1.2M			TSOT23-5, 2x2
MIC2287C	2.5	10	0.750	2.5mA	0.095		±5	34	90%	1.2M			TSOT23-5, 2x2
MIC2289	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	1.2M			2x2
MIC2289C	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	1.2M			2x2
MIC2291	2.5	10	1.20	2.8mA	0.095		±5	34	90%	1.2M	Photo Flash Mode		TSOT23-5, 2x2
MIC2292	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	1.6M			2x2
MIC2292C	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	1.6M			2x2
MIC2293	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	2.0M			2x2
MIC2293C	2.5	10	0.750	2.5mA	X	0.095	±10	34	90%	2.0M			2x2
MIC2297	2.5	10	1.70	4.0mA	0.200		±5	42	93%	600K	Current Mode		2.5x2.5
MIC2298	2.5	10	4.75	15mA	0.200		±8	30	90%	1.0M	Photo Flash & Torch Mode		3x3
MIC2299	2.5	10	4.75	15mA	0.200		±8	30	90%	2.0M	10W Flash driver and Torch Mode.		3x3
MIC3223	4.5	20	9.0	2.1mA	0.200		±5	37	90%	1.0M	Boost High Power LED Driver, Integrated FET and PWM Dimming.		eTSSOP-16
MIC3263	6.0	40	2.40	6.5mA	2.36			40	0.9	400K-1.8M	Six-Channel WLED Driver for Backlighting Applications with Flicker-free Dimming. Internal & Ext dimming modes		4x4
MIC3287	2.8	5.5	0.350	2.1mA	0.250		±7.5	36	90%	1.2M			TSOT23, 2x2
MIC3289	2.5	6.5	0.750	1.4mA	X	0.250	±5	24	90%	1.2M	Dig 1-Wire		TSOT23-6, 2x2
<b>MIC3291</b>	2.5	6.5	0.750	2.0mA	X	0.250	±5	25	90%	1.2M	Dig 1-Wire		TSOT23-6, 2x2

## High Brightness LED Drivers

Bold = New P/N	Type		V <sub>IN</sub>		# of White LEDs	Dimming	I <sub>q</sub> (mA)	Switching Frequency	Switching Mosfet	Dithered	ILED Accuracy	V <sub>fb</sub> (mV)	* = Reduced height package Package
	Buck	Boost	Min (V)	Max (V)									
MIC3201	X		6.0	20	Up to 4	PWM to 20KHz	1.2	Hyst to 1.0MHz	Internal 1A		±5%	200	eSOIC-8
<b>MIC3202</b>	X		6.0	37	Up to 8	PWM to 20KHz	1.2	Hyst to 1.0MHz	Internal 1A	X	±5%	200	eSOIC-8
<b>MIC3202-1</b>	X		6.0	37	Up to 8	PWM to 20KHz	1.2	Hyst to 1.0MHz	Internal 1A			200	eSOIC-8
MIC3203	X		4.5	42	Up to 9	PWM to 20KHz	1.0	Hyst to 1.5MHz	External	X	±5%	200	SOIC-8
MIC3203-1	X		4.5	42	Up to 9	PWM to 20KHz	1.0	Hyst to 1.5MHz	External			200	SOIC-8
<b>MAQ3203 (1)</b>	X		4.5	42	Up to 9	PWM to 20KHz	1.0	Hyst to 1.5MHz	External	X	±5%	200	SOIC-8
MIC3230		X	6.0	45	Up to 20 or more	PWM to 500Hz	3.2	400KHz-1.8MHz	External		3%	250	eTSSOP-16, 3x3
MIC3231		X	6.0	45	Up to 20 or more	PWM to 500Hz	3.2	100KHz-1MHz	External	X	3%	250	eTSSOP-16, 3x3
MIC3232		X	6.0	45	Up to 20 or more	PWM to 500Hz	3.2	400KHz	External		3%	250	MSOP-10

(1) AEC-Q100 Qualified.

# Power Management Selection Guide

## Linear LED Drivers

Bold = New P/N	V <sub>IN</sub>		# of White LEDs	Dimming	I <sub>q</sub> (mA)	LED		Extra LDOs	V <sub>dropout</sub> (mV)	LDO (μA)	Comments	* = Reduced height package Package
	Min (V)	Max (V)				V <sub>dropout</sub> @ 20mA	I <sub>LED</sub> Matching					
MIC2841A	3.0	5.5	4 @ 20mA	PWM (200Hz-500kHz)	1.4	40mV	±1.5%				DAM™	2x2*
MIC2842A	3.0	5.5	4 @ 20mA	1-Wire, 32-Steps	1.4	40mV	±1.5%				DAM™	2x2*
MIC2843A	3.0	5.5	6 @ 20mA	PWM (200Hz-500kHz)	1.4	40mV	±1.5%				DAM™	2x2*
MIC2844A	3.0	5.5	6 @ 20mA	1-Wire, 32-Steps	1.4	40mV	±1.5%				DAM™	2x2*
MIC2845A	3.0	5.5	6 @ 20mA	PWM (200Hz-500kHz)	1.4	40mV	±1.5%	2	150	35		2.5x2.5*
MIC2846A	3.0	5.5	6 @ 20mA	1-Wire, 32-Steps	1.4	40mV	±1.5%	2	150	35		2.5x2.5*
<b>MIC2860-2D</b>	3.0	5.5	2 @ 30.2mA	1-Wire, 32-Steps	0.7	52mV	±0.5%					SC70-6, SOT-23-6*
<b>MIC2860-2P</b>	3.0	5.5	2 @ 30.2mA	PWM down to 250Hz	0.7	52mV	±0.5%					SC70-6, SOT-23-6*
<b>MIC4801</b>	3.0	5.5	1 @ 600mA	PWM (200Hz-500kHz)	2.2	130mV @ 400mA					±1% Accuracy	SOIC-8
<b>MIC4802</b>	3.0	5.5	1 @ 800mA	PWM (200Hz-500kHz)	4.1	280mV @ 800mA					±1% Accuracy	eSOIC-8
<b>MIC4811</b>	3.0	5.5	6 @ 50mA	PWM (200Hz-500kHz)	1.7	100mV @ 50mA	±1.0%					MSOP-10
<b>MIC4812</b>	3.0	5.5	6 @ 100mA	PWM (200Hz-500kHz)	3.2	190mV @ 100mA	±1.0%					eMSOP-10

## Display Drivers

Bold = New P/N	V <sub>IN</sub>		Sink Current (mA)	Segments	LEDs	Description	Package
	Min (V)	Max (V)					
MIC5400	4.75	5.5	30		2 banks of 8	Driving Large LED Array in Signs	SOIC-28
MM5450	4.75	11.0	15	34		7-Segment LED Driver with EN	PDIP-40, PLCC-44
MM5451	4.75	11.0	15	35		7-Segment LED Driver	PDIP-40, PLCC-44

## Latched Drivers

Bold = New P/N	Input	# of Channels	Max Output Voltage	Nominal Sink Current (mA)	Nominal Source Current (mA)	Thermal, UVLO, Overcurrent Protection		Package
MIC5800	Parallel	4	50V	400				SOIC-14, PDIP-14
MIC5801	Parallel	8	50V	400				SOIC-24, PDIP-22, PLCC-28, CerDIP-22 (1)
MIC58P01	Parallel	8	80V	400			X	SOICW-24, PDIP-22, PLCC-28
MIC5821	Serial	8	50V / 35V	400				PDIP-16
MIC5822	Serial	8	80V / 50V	400				PDIP-16
MIC5841	Serial	8	50V / 35V	400				SOIC-18, PDIP-18, PLCC-20
MIC5842	Serial	8	80V / 50V	400				SOIC-18, PDIP-18, PLCC-20
MIC58P42	Serial	8	80V / 50V	400			X	SOIC-18, PDIP-18, PLCC-20
MIC5891	Serial	8	50V		400			SOICW-16, PDIP-16
MIC59P50	Parallel	8	80V	400			X	SOICW-24, PDIP-24, PLCC-28

(1) SMD (military) 5962-8764001WA

## Un-Latched Driver Arrays

Bold = New P/N	Input	# of Channels	Max Output Voltage	Input Signal	Package
MIC2981	Parallel	8	50V	5V-TTL or 5V-to-15V CMOS or PMOS	PDIP-18, WSOIC-18
MIC2982	Parallel	8	50V	5V-TTL or 5V-to-15V CMOS or PMOS	PDIP-18, WSOIC-18

## I/O Expanders

Bold = New P/N	Description	V <sub>IN</sub>		# Of Outputs	V <sub>out</sub> Max	Max Sink Current Per Pin	Supply Current TYP	Package
		Min (V)	Max (V)					
MIC74	2-wire SMBus™, I2C™ I/O Expander and Fan Controller	2.7	3.6	8	5.5V	10mA	2μA	QSOP-16

# Power Management Selection Guide

## Half-Bridge MOSFET Drivers

Bold = New P/N	$V_{IN}$		Boot strap Max Volts	Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	tr/ff	tpd (input rise/fall)	Package	Comments
	Min (V)	Max (V)									
MIC4100	9.0	16	100V	Dual	Non-Inverting (CMOS)	2A/2A	2.5Ω/2.5Ω	10ns into 1000pF	27ns into 1000pF	SOIC-8	Hysteresis on input pins for noisy or slow signals.
MIC4101	9.0	16	100V	Dual	Non-Inverting (TTL)	2A/2A	2.5Ω/2.5Ω	10ns into 1000pF	27ns into 1000pF	SOIC-8	Level shift between $V_{IN}$ signal and $V_{DD}$ supply voltage.
MIC4102	9.0	16	100V	Dual	Non-Inverting (TTL)	3A/2A	1.5Ω/2.5Ω	10ns/6ns into 1000pF	27ns into 1000pF	SOIC-8	Embedded Anti-Shoot through Protection, PWM Input.
MIC4103	9.0	16	100V	Dual	Non-Inverting (CMOS)	3A/2A	1.25Ω/2.5Ω	10ns/6ns into 1000pF	27ns into 1000pF	SOIC-8	
MIC4104	9.0	16	100V	Dual	Non-Inverting (TTL)	3A/2A	1.25Ω/2.5Ω	10ns/6ns into 1000pF	27ns into 1000pF	SOIC-8	

## Low-Side MOSFET Drivers

Bold = New P/N	$V_{IN}$		Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	tr/ff	tpd (input rise/fall)	Package	Comments
	Min (V)	Max (V)								
MIC4416	4.5	18	Single	Non-Inverting	1.2A	7.6Ω/7.8Ω	24ns/28ns into 1,000pF	42ns into 1000pF	SOT-143	
MIC4417	4.5	18	Single	Inverting	1.2A	7.6Ω/7.8Ω	24ns/28ns into 1,000pF	37ns into 1000pF	SOT-143	
MIC4467	4.5	18	Quad	Non-inverting NAND Inputs	1.2A	5Ω	14ns/13ns into 470pF	30ns/45ns into 470pF	WSOIC-16, PDIP-14	MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to -5V.
MIC4468	4.5	18	Quad	Non-inverting NAND Inputs	1.2A	5Ω	14ns/13ns into 470pF	30ns/45ns into 470pF	WSOIC-16, PDIP-14	MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to -5V.
MIC4469	4.5	18	Quad	Inverting + Non-Inverting NAND Inputs	1.2A	5Ω	14ns/13ns into 470pF	30ns/45ns into 470pF	WSOIC-16, PDIP-14, CerDIP-14	MOSFET: 400pF to 3,000pF; Latch-up Protected; Input to -5V. SMD (Military) 5962-9459403MCA.
MIC4126	4.5	20	Dual	Inverting	1.5A	6Ω	13ns/15ns into 1000pF	37ns/40ns into 1000pF	eSOIC-8, eMSOP-8,	MIC4426 upgrade; Higher input voltage; Input pulse down to 50ns.
MIC4127	4.5	20	Dual	Non-Inverting	1.5A	6Ω	13ns/15ns into 1000pF	37ns/40ns into 1000pF	eSOIC-8, eMSOP-8, 3x3	MIC4427 upgrade; Higher input voltage; Input pulse down to 50ns.
MIC4128	4.5	20	Dual	Inverting + Non-Inverting	1.5A	6Ω	13ns/15ns into 1000pF	37ns/40ns into 1000pF	eSOIC-8, eMSOP-8,	MIC4428 upgrade; Higher input voltage; Input pulsedown to 50ns.
MIC4426	4.5	18	Dual	Inverting	1.5A	6Ω	18ns/15ns into 1000pF	17ns/23ns into 1000pF	SOIC-8, MSOP-8, PDIP-8	MIC4126 is recommended upgrade. SMD (Military) 5962-8850307PA.
MIC4427	4.5	18	Dual	Non-inverting	1.5A	6Ω	18ns/15ns into 1000pF	17ns/23ns into 1000pF	SOIC-8, MSOP-8, PDIP-8, CerDIP-8	MIC4127 is recommended upgrade. SMD (Military) 5962-8850309PA.
MIC4428	4.5	18	Dual	Inverting + Non-Inverting	1.5A	6Ω	18ns/15ns into 1000pF	17ns/23ns into 1000pF	SOIC-8, MSOP-8, PDIP-8, CerDIP-8	MIC4128 is recommended upgrade. SMD (Military) 5962-8850309PA.
MIC4123	4.5	20	Dual	Inverting	3A	2.2Ω	23ns/25ns into 1,800pF	44ns/59ns into 1,800pF	eSOIC-8, 4x4	MIC4423 upgrade; Higher input voltage; Input pulse down to 50ns.
MIC4124	4.5	20	Dual	Non-Inverting	3A	2.2Ω	23ns/25ns into 1,800pF	44ns/59ns into 1,800pF	eSOIC-8, 4x4	MIC4424 upgrade; Higher input voltage; Input pulse down to 50ns.
MIC4125	4.5	20	Dual	Inverting + Non-Inverting	3A	2.2Ω	23ns/25ns into 1,800pF	44ns/59ns into 1,800pF	eSOIC-8, 4x4	MIC4425 upgrade; Higher input voltage; Input pulse down to 50ns.
<b>MAQ4123</b>	4.5	20	Dual	Inverting	3A	2.2Ω	11ns into 1,800pF	40ns into 1,800pF	eSOIC-8	Automotive Qualified, Input pulse down to 50ns.
<b>MAQ4124</b>	4.5	20	Dual	Non-Inverting	3A	2.2Ω	11ns into 1,800pF	40ns into 1,800pF	eSOIC-8	Automotive Qualified, Input pulse down to 50ns.
<b>MAQ4125</b>	4.5	20	Dual	Inverting + Non-Inverting	3A	2.2Ω	11ns into 1,800pF	40ns into 1,800pF	eSOIC-8	Automotive Qualified, Input pulse down to 50ns.
MIC4423	4.5	18	Dual	Inverting	3A	3.8Ω/3.5Ω	23ns/25ns into 1,800pF	33ns/38ns into 1800pF	SOIC-8, WSOIC-16, PDIP-8	
MIC4424	4.5	18	Dual	Non-inverting	3A	3.8Ω/3.5Ω	23ns/25ns into 1,800pF	33ns/38ns into 1800pF	SOIC-8, WSOIC-16, PDIP- 8, CerDIP-8	SMD (Military) 5962-8850305PA.
MIC4425	4.5	18	Dual	Inverting + Non-Inverting	3A	3.8Ω/3.5Ω	23ns/25ns into 1,800pF	33ns/38ns into 1800pF	SOIC-8, WSOIC-16, PDIP-8	
MIC4223	4.5	18	Dual	Inverting	4A		15ns/15ns into 2000pF	25ns/35ns into 2000pF	8-pin SOIC, eMSOP-8	MOSFET Drivers with Enable.
MIC4224	4.5	18	Dual	Non-Inverting	4A		15ns/15ns into 2000pF	25ns/35ns into 2000pF	8-pin SOIC, eMSOP-8	MOSFET Drivers with Enable.
MIC4120	4.5	20	Single	Non-Inverting	6A	1.5Ω	12ns/13ns into 2500pF	45ns/50ns into 2,500pF	eSOIC-8, 3x3	MIC4420 upgrade; Recommended for new designs; Higher input voltage; Input pulse down to 50ns.

# Power Management Selection Guide

## Low-Side MOSFET Drivers

Bold = New P/N	V <sub>IN</sub>		Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	tr/ff	tpd (input rise/fall)	Package	Comments
	Min (V)	Max (V)								
MIC4225	4.5	18	Dual	Complimentary	4A		15ns/15ns into 2000pF	25ns/35ns into 2000pF	8-pin SOIC, eMSOP-8	MOSFET Drivers with Enable.
MIC4420	4.5	18	Single	Non-Inverting	6A	1.7Ω/1.5Ω	12ns/13ns into 2500pF	18ns/48ns into 2500pF	SOIC-8, MSOP-8, PDIP-8, TO-220-5, CerDIP-8	SMD (Military) 5962-8877003PA.
MIC4129	4.5	20	Single	Inverting	6A	1.5Ω	12ns/13ns into 2500pF	45ns/50ns into 2,500pF	eSOIC-8, 3x3	MIC4429 upgrade; Recommended for new designs; Higher input voltage; Input pulse down to 50ns.
MIC4429	4.5	18	Single	Inverting	6A	1.7Ω/1.5Ω	12ns/13ns into 2500pF	18ns/48ns into 2500pF	SOIC-8, MSOP-8, PDIP-8, TO-220-5	
MIC44F18	4.5	13.2	Single	Non-Inverting (TTL)	6A	2Ω	10ns/10ns into 1000pF	15ns/13ns into 1000pF	eMSOP-8, 2x2	High Speed; small, thermally efficient package with enable.
MIC44F19	4.5	13.2	Single	Inverting (TTL)	6A	2Ω	10ns/10ns into 1000pF	15ns/13ns into 1000pF	eMSOP-8, 2x2	High Speed; small, thermally efficient package with enable.
MIC44F20	4.5	13.2	Single	Inverting (TTL)	6A	2Ω	10ns/10ns into 1000pF	15ns/13ns into 1000pF	eMSOP-8, 2x2	High Speed; small, thermally efficient package with enable.
MIC4421	4.5	18	Single	Inverting	9A	0.8Ω/0.6Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	MIC4421A is recommended upgrade. Latch-Up Protected; Input to -5V
MIC4421A	4.5	18	Single	Inverting	9A	0.8Ω/0.6Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	Recommended upgrade to MIC4421.50ns minimum input pulse width.
MIC4422	4.5	18	Single	Non-Inverting	9A	0.8Ω/0.6Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	MIC4422A is recommended upgrade. Latch-Up Protected; Input to -5V
MIC4422A	4.5	18	Single	Non-Inverting	9A	0.8Ω/0.6Ω	20ns/24ns into 10nF	15ns/35ns into 10nF	PDIP-8, SOIC-8, TO-220-5	Recommended upgrade to MIC4422. 50ns minimum input pulse width
MIC4451	4.5	18	Single	Inverting	12A	0.8Ω/0.6Ω	20ns/24ns into 15nF	15ns/35ns into 15nF	SOIC-8, PDIP-8, TO-220-5	Latch-up Protected; Input to -5V
MIC4452	4.5	18	Single	Non-Inverting	12A	0.8Ω/0.6Ω	20ns/24ns into 15nF	30ns/35ns into 15nF	SOIC-8, PDIP-8, TO-220-5	Latch-up Protected; Input to -5V.
MIC5020	11	50	Single	Non-Inverting			1.1μs into 1,500pF		SOIC-8	Current Sense (50mV nominal).

## High-Side MOSFET Drivers

Bold = New P/N	V <sub>IN</sub>		Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	tr/ff	tpd (input rise/fall)	Package	Comments
	Min (V)	Max (V)								
MIC5021	12	36	Single	Non-Inverting			0.9μs into 1,500pF		SOIC-8, PDIP-8	Current Sense (50mV nominal)
MIC5060	2.75	30	Single	Non-Inverting			90μs into 1,000pF		3x3	Rev Bat and Load Dump Protected

## High or Low-Side MOSFET Drivers

Bold = New P/N	V <sub>IN</sub>		Type	Logic	Sink/Source Peak Output	Sink/Source Output Impedance	tr/ff	tpd (input rise/fall)	Package	Comments
	Min (V)	Max (V)								
MIC5011	4.5	32	Single	Non-Inverting			60μs into 1,000pF		SOIC-8, PDIP-8	External Charge Pump.Capacitors (opt.)
MIC5013	7.0	32	Single	Non-Inverting			60μs into 1,000pF		SOIC-8, PDIP-8	Current Sense, Fault
MIC5014	2.75	30	Single	Non-Inverting			90μs into 1,000pF		SOIC-8, PDIP-8	
MIC5015	2.75	30	Single	Inverting			90μs into 1,000pF		SOIC-8, PDIP-8	
MIC5018	2.7	9.0	Single	Non-Inverting			2.1ms into 3,000pF		SOT143	
MIC5021	12	36	Single	Non-Inverting			400ns into 1500pF		SOIC-8, PDIP-8	Current Sense (50mV Nominal)
MIC5060	2.75	30.0	Single	Non-Inverting			90μs into 1.000pF		3x3	

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# Power Management Selection Guide

## Single High-Side Load Switches

Bold = New P/N	V <sub>IN</sub>		Max SW Current (A)	RDS ON @5V (mΩ)	Soft Start (μS)	Load Discharge (Ω)	Enable Logic	V <sub>EN</sub> (V)	Input Pull-Up Resistor	Reverse Current Blocking	* = Reduced height package Package
	Min (V)	Max (V)									
MIC94030	2.7	13.5	1.0	750			Low True	1.40		X	SOT143-4
MIC94031	2.7	13.5	1.0	750			Low True	1.40	X	X	SOT143-4
MIC94040	1.7	5.5	3.0	28			High True	1.20			1.2x1.2
MIC94041	1.7	5.5	3.0	28		250	High True	1.20			1.2x1.2
MIC94042	1.7	5.5	3.0	28	100		High True	1.20			1.2x1.2
MIC94043	1.7	5.5	3.0	28		250	High True	1.20			1.2x1.2
<b>MIC94044</b>	1.7	5.5	3.0	28	900		High True	1.20			1.2x1.2
<b>MIC94045</b>	1.7	5.5	3.0	28	900	200	High True	1.20			1.2x1.2
MIC94050	1.8	5.5	1.8	125			Low True	1.20		X	SOT143-4
MIC94051	1.8	5.5	1.8	125			Low True	1.20	X	X	SOT143-4
MIC94052	1.8	5.5	2.0	70			Low True	1.20			SC70-6
MIC94053	1.8	5.5	2.0	70			Low True	1.20	X		SC70-6
MIC94060	1.7	5.5	2.0	77			High True	1.20			SC70-6, 1.2x1.6*
MIC94061	1.7	5.5	2.0	77		200	High True	1.20			SC70-6, 1.2x1.6*
MIC94062	1.7	5.5	2.0	77	800		High True	1.20			SC70-6, 1.2x1.6*
MIC94063	1.7	5.5	2.0	77	800	200	High True	1.20			SC70-6, 1.2x1.6*
MIC94064	1.7	5.5	2.0	77	115		High True	1.20			SC70-6, 1.2x1.6*
MIC94065	1.7	5.5	2.0	77	115	200	High True	1.20			SC70-6, 1.2x1.6*
MIC94070	1.7	5.5	1.2	120			High True	1.20			SC70-6, 1.2x1.6*
MIC94071	1.7	5.5	1.2	120		200	High True	1.20			SC70-6, 1.2x1.6*
MIC94072	1.7	5.5	1.2	120	800		High True	1.20			SC70-6, 1.2x1.6*
MIC94073	1.7	5.5	1.2	120	800	200	High True	1.20			SC70-6, 1.2x1.6*
MIC94080	1.7	5.5	2.0	67			High True	1.25			0.85x0.85*
MIC94081	1.7	5.5	2.0	67		250	High True	1.25			0.85x0.85*
MIC94082	1.7	5.5	2.0	67	800		High True	1.25			0.85x0.85*
MIC94083	1.7	5.5	2.0	67	800	250	High True	1.25			0.85x0.85*
MIC94084	1.7	5.5	2.0	67	120		High True	1.25			0.85x0.85*
MIC94085	1.7	5.5	2.0	67	120	250	High True	1.25			0.85x0.85*
MIC94090	1.7	5.5	1.2	130			High True	1.25			SC70-6, 1.2x1.2*
MIC94091	1.7	5.5	1.2	130		250	High True	1.25			SC70-6, 1.2x1.2*
MIC94092	1.7	5.5	1.2	130	790		High True	1.25			SC70-6, 1.2x1.2*
MIC94093	1.7	5.5	1.2	130	790	250	High True	1.25			SC70-6, 1.2x1.2*
MIC94094	1.7	5.5	1.2	130	120		High True	1.25			SC70-6, 1.2x1.2*
MIC94095	1.7	5.5	1.2	130	120	250	High True	1.25			SC70-6, 1.2x1.2*

## Dual High-Side Load Switches

Bold = New P/N	V <sub>IN</sub>		Max SW Current (A)	RDS ON @5V (mΩ)	Soft Start (μS)	Load Discharge (Ω)	Enable Logic	V <sub>EN</sub> (V)	Input Pull-Up Resistor	Reverse Current Blocking	Package
	Min (V)	Max (V)									
MIC94066	1.7	5.5	2.0	85			High True	1.20			2x2
MIC94067	1.7	5.5	2.0	85		200	High True	1.20			2x2
MIC94068	1.7	5.5	2.0	85	800		High True	1.20			2x2
MIC94069	1.7	5.5	2.0	85	800	200	High True	1.20			2x2

# Power Management Selection Guide

## General Purpose Power Distribution (USB) Switches

Bold = New P/N	Switch Type	Internal Charge Pump Element	V <sub>IN</sub>		Current Limit		RDS ON @5V (mΩ)	Rev Block Diode	Enable Logic	UVLO	Current Limited	Thermal Shutdown	Fault Flag	Flag Transient Filter	UL Ap- proved	* = Reduced height package Package
			Min (V)	Max (V)	Fixed (Min)	Adj. (Max)										
MIC2003/13	Single	P-Ch	2.5	5.5	500mA, 800mA, 1.2A		100		Noninverting	X	X	X		X	X	SOT23-5, 2x2
MIC2004/14	Single	P-Ch	2.5	5.5	500mA, 800mA, 1.2A		100		Noninverting	X	X	X		X	X	SOT23-5, 2x2
MIC2005/15	Single	P-Ch	2.5	5.5	500mA, 800mA, 1.2A		100		Noninverting	X	X	X	X	X	X	SOT23-5, SOT23-6, 2x2
MIC2005A	Single	P-Ch	2.5	5.5	500mA		170		Noninverting	X	X	X	X	X	X	SOT23-5, SOT23-6
<b>MIC2009A</b>	Single	P-Ch	2.5	5.5	100mA	900mA	170		Noninverting	X	X	X		X	X	SOT23-6
MIC2005L	Single	P-Ch	2.5	5.5	500mA, 800mA, 1.2A		100		Noninverting	X	X	X	X	X	X	SOT23-5
MIC2006/16	Single	P-Ch	2.5	5.5	500mA, 800mA, 1.2A		100		Noninverting	X	X	X		X	X	SOT23-6, 2x2
MIC2007/17	Single	P-Ch	2.5	5.5	200mA	2.0A	100		Noninverting	X	X	X		X	X	SOT23-6, 2x2
MIC2008/18	Single	P-Ch	2.5	5.5	200mA	2.0A	100		Noninverting	X	X	X		X	X	SOT23-6, 2x2
MIC2009/19	Single	P-Ch	2.5	5.5	200mA	2.0A	100		Noninverting	X	X	X	X	X	X	SOT23-6, 2x2
MIC2025-1	Single	N-Ch	X	2.7	5.5	500mA		140	X	Noninverting	X	X	X	X	X	SOIC-8, MSOP-8, PDIP-8
MIC2025-2	Single	N-Ch	X	2.7	5.5	500mA		140	X	Inverting	X	X	X	X	X	SOIC-8, MSOP-8
MIC2026-1	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Noninverting	X	X	X	X	X	SOIC-8, PDIP-8
MIC2026-2	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Inverting	X	X	X	X	X	SOIC-8, PDIP-8
MIC2026A-1	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Noninverting	X	X	X	X	X	SOIC-8, PDIP-8
MIC2026A-2	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Inverting	X	X	X	X	X	SOIC-8, PDIP-8
MIC2027-1	Quad	N-Ch	X	2.7	5.5	500mA		150	X	Noninverting	X	X	X	X	X	SOIC-16, WSOIC-16, PDIP-8
MIC2027-2	Quad	N-Ch	X	2.7	5.5	500mA		150	X	Inverting	X	X	X	X	X	SOIC-16, WSOIC-16, PDIP-8
MIC2040-1	Single	N-Ch	X	0.8	5.5	250mA	1.5A	80	X	Noninverting	X	X	X	X	X	MSOP-10
MIC2040-2	Single	N-Ch	X	0.8	5.5	250mA	1.5A	80	X	Inverting	X	X	X	X	X	MSOP-10
MIC2041-1	Single	N-Ch	X	0.8	5.5	250mA	1.5A	80	X	Noninverting	X	Latched	X	X	X	MSOP-10
MIC2041-2	Single	N-Ch	X	0.8	5.5	250mA	1.5A	80	X	Inverting	X	Latched	X	X	X	MSOP-10
MIC2042-1	Single	N-Ch	X	0.8	5.5	500mA	3.0A	40	X	Noninverting	X	X	X	X	X	SOIC-8, TSSOP-14
MIC2042-2	Single	N-Ch	X	0.8	5.5	500mA	3.0A	40	X	Inverting	X	X	X	X	X	SOIC-8, TSSOP-14
MIC2043-1	Single	N-Ch	X	0.8	5.5	500mA	3.0A	40	X	Noninverting	X	Latched	X	X	X	SOIC-8, TSSOP-14
MIC2043-2	Single	N-Ch	X	0.8	5.5	500mA	3.0A	40	X	Inverting	X	Latched	X	X	X	SOIC-8, TSSOP-14
MIC2044-1	Single	N-Ch	X	0.8	5.5	1.0A	6.0A	20	X	Noninverting	X	X	X	X	X	TSSOP-16
MIC2044-2	Single	N-Ch	X	0.8	5.5	1.0A	6.0A	20	X	Inverting	X	X	X	X	X	TSSOP-16
MIC2045-1	Single	N-Ch	X	0.8	5.5	1.0A	6.0A	20	X	Noninverting	X	Latched	X	X	X	TSSOP-16
MIC2045-2	Single	N-Ch	X	0.8	5.5	1.0A	6.0A	20	X	Inverting	X	Latched	X	X	X	TSSOP-16
MIC2075-1	Single	N-Ch	X	2.7	5.5	500mA		140	X	Noninverting	X	X	Latched	X	X	SOIC-8, MSOP-8
MIC2075-2	Single	N-Ch	X	2.7	5.5	500mA		140	X	Inverting	X	X	Latched	X	X	SOIC-8, MSOP-8, PDIP-8
MIC2076-1	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Noninverting	X	X	Latched	X	X	SOIC-8, PDIP-8
MIC2076-2	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Inverting	X	X	Latched	X	X	SOIC-8, PDIP-8
MIC2076A-1	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Noninverting	X	X	Latched	X	X	SOIC-8
MIC2076A-2	Dual	N-Ch	X	2.7	5.5	500mA		140	X	Inverting	X	X	Latched	X	X	SOIC-8
MIC2077-1	Quad	N-Ch	X	2.7	5.5	500mA		150	X	Noninverting	X	X	Latched	X	X	SOIC-16, WSOIC-16
MIC2077-2	Quad	N-Ch	X	2.7	5.5	500mA		150	X	Inverting	X	X	Latched	X	X	SOIC-16, WSOIC-16
<b>MIC2090-1</b>	Single	P-Ch	1.8	5.5	50mA		700	X	Noninverting	X	X	X	X	X	X	SOT-23-5
<b>MIC2090-2</b>	Single	P-Ch	1.8	5.5	50mA		700	X	Noninverting	X	Latched	Latched	X	X	X	SOT-23-5

# Power Management Selection Guide

## General Purpose Power Distribution (USB) Switches

Bold = New P/N	Switch Type	Internal Charge Element Pump	V <sub>IN</sub>		Current Limit		RDS ON @5V (mΩ)	Rev Block Diode	Enable Logic	Current UVLO	Thermal Shutdown	Fault Flag	Flag Transient Filter	UL Ap- proved	* = Reduced height package Package
			Min (V)	Max (V)	Fixed (Min)	Adj. (Max)									
MIC2091-1	Single	P-Ch	1.8	5.5	100mA		700	X	Noninverting	X	X	X	X	X	SOT-23-5
MIC2091-2	Single	P-Ch	1.8	5.5	100mA		700	X	Noninverting	X	Latched	Latched	X	X	SOT-23-5
MIC2095-1	Single	P-Ch	2.5	5.5	500mA		275	X	Noninverting	X	X	X	X	X	1.6x1.6*
MIC2095-2	Single	P-Ch	2.5	5.5	500mA		275	X	Inverting	X	X	X	X	X	1.6x1.6*
MIC2097-1	Single	P-Ch	2.5	5.5			1.1A	275	X	Noninverting	X	X	X	X	1.6x1.6*
MIC2097-2	Single	P-Ch	2.5	5.5			1.1A	275	X	Inverting	X	X	X	X	1.6x1.6*
MIC2098-1	Single	P-Ch	2.5	5.5	900mA		275	X	Noninverting	X	X	X	X	X	1.6x1.6*
MIC2098-2	Single	P-Ch	2.5	5.5	900mA		275	X	Inverting	X	X	X	X	X	1.6x1.6*
MIC2099-1	Single	P-Ch	2.5	5.5			1.1A	275	X	Noninverting	X	X	X	X	1.6x1.6*
MIC2099-2	Single	P-Ch	2.5	5.5			1.1A	275	X	Inverting	X	X	X	X	1.6x1.6*
MIC2505	Single	N-Ch	X	2.7	7.5	2.0A		50	X	Noninverting	X	X	X	X	SOIC-8, PDIP-8
MIC2505-1	Single	N-Ch	X	2.7	7.5	2.0A		50	X	Noninverting	X	X	X	X	SOIC-8
MIC2505-2	Single	N-Ch	X	2.7	7.5	2.0A		50	X	Inverting	X	X	X	X	SOIC-8
MIC2506	Dual	N-Ch	X	2.7	7.5	1.0A		125	X	Noninverting	X	X	X	X	SOIC-8
MIC2514	Single	P-Ch	X	3	13.5	400mA		2,400		Noninverting	X	X			SOT23-5
MIC2536-1	Dual	N-Ch	X	2.7	5.5	100mA		700	X	Noninverting	X	X	X	X	SOIC-8, MSOP-8
MIC2536-2	Dual	N-Ch	X	2.7	5.5	100mA		700	X	Inverting	X	X	X	X	SOIC-8, MSOP-8
MIC2537-1	Quad	N-Ch	X	2.7	5.5	100mA		700	X	Noninverting	X	X	X	X	SOIC-16
MIC2537-2	Quad	N-Ch	X	2.7	5.5	100mA		700	X	Inverting	X	X	X	X	SOIC-16
MIC2544-1	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	X	X	X	SOIC-8, MSOP-8
MIC2544-2	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	X	X	X	SOIC-8, MSOP-8
MIC2544A-1	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	X	X	X	SOIC-8, MSOP-8
MIC2544A-2	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	X	X	X	SOIC-8, MSOP-8
MIC2545A-1	Single	N-Ch	X	2.7	5.5	500mA	3.0A	50	X	Noninverting	X	X	X	X	SOIC-8, PDIP-8, TSSOP-14
MIC2545A-2	Single	N-Ch	X	2.7	5.5	500mA	3.0A	50	X	Inverting	X	X	X	X	SOIC-8, PDIP-8, TSSOP-14
MIC2546-1	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	X	X	X	SOIC-16, TSSOP-16
MIC2546-2	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	X	X	X	SOIC-16, TSSOP-16
MIC2547-1	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	Latched	X	X	SOIC-16, TSSOP-16
MIC2547-2	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	Latched	X	X	SOIC-16, TSSOP-16
MIC2548-1	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	Latched	X	X	SOIC-8, MSOP-8
MIC2548-2	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	Latched	X	X	SOIC-8, MSOP-8
MIC2548A-1	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	Latched	X	X	SOIC-8, MSOP-8
MIC2548A-2	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	Latched	X	X	SOIC-8, MSOP-8
MIC2549A-1	Single	N-Ch	X	2.7	5.5	500mA	3.0A	50	X	Noninverting	X	Latched	X	X	SOIC-8, PDIP-8, TSSOP-14
MIC2549A-2	Single	N-Ch	X	2.7	5.5	500mA	2.5A	50	X	Inverting	X	Latched	X	X	SOIC-8, PDIP-8, TSSOP-14
MIC2546-1	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	X	X		SOIC-16, TSSOP-16
MIC2546-2	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	X	X		SOIC-16, TSSOP-16
MIC2547-1	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	Latched	X		SOIC-16, TSSOP-16
MIC2547-2	Dual	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	Latched	X		SOIC-16, TSSOP-16
MIC2548-1	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	Latched	X		SOIC-8, MSOP-8
MIC2548-2	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	Latched	X		SOIC-8, MSOP-8
MIC2548A-1	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Noninverting	X	Latched	X		SOIC-8, MSOP-8
MIC2548A-2	Single	N-Ch	X	2.7	5.5	100mA	1.5A	120	X	Inverting	X	Latched	X		SOIC-8, MSOP-8
MIC2549A-1	Single	N-Ch	X	2.7	5.5	500mA	3.0A	50	X	Noninverting	X	Latched	X		SOIC-8, PDIP-8, TSSOP-14
MIC2549A-2	Single	N-Ch	X	2.7	5.5	500mA	2.5A	50	X	Inverting	X	Latched	X		SOIC-8, PDIP-8, TSSOP-14



# Power Management Selection Guide

## USB Power Switches Supporting ACPI S0/S3 State Transitions

<b>Bold = New</b> P/N	Type	Switch Element	Internal Charge Pump	V <sub>IN</sub> Min (V)	Max (V)	Current Limit Fixed (Min)	Adj. (Max)	RDS ON @5V (mΩ)	Rev Block Diode	Enable Logic	UVLO	Current Limited	Thermal Shutdown	Fault Flag	Flag Transient Filter	UL Approved	Package
MIC2010-1	Dual	N-Ch	X	4.5	5.5	500mA	300mA (1)	140	X	Noninverting	X	X	X	X	X	X	QSOP-16
MIC2010-2	Dual	N-Ch	X	4.5	5.5	500mA	300mA (1)	140	X	Inverting	X	X	X	X	X	X	QSOP-16
MIC2012-1	Dual	N-Ch	X	4.5	5.5	500mA		140	X	Noninverting	X	X	X	X	X	X	QSOP-16
MIC2012-2	Dual	N-Ch	X	4.5	5.5	500mA		140	X	Inverting	X	X	X	X	X	X	QSOP-16
MIC2012	Dual	N-Ch	X	4.5	5.5	500mA		140	X	—	X	X	X	X	X	X	SOIC-8
MIC2070-1	Dual	N-Ch	X	4.5	5.5	500mA	300mA (1)	140	X	Noninverting	X	X	Latched	X	X		QSOP-16
MIC2070-2	Dual	N-Ch	X	4.5	5.5	500mA	300mA (1)	140	X	Inverting	X	X	Latched	X	X		QSOP-16
MIC2072-1	Dual	N-Ch	X	4.5	5.5	500mA		140	X	Noninverting	X	X	Latched	X	X	X	QSOP-16
MIC2072-2	Dual	N-Ch	X	4.5	5.5	500mA		140	X	Inverting	X	X	Latched	X	X	X	QSOP-16
MIC2072	Dual	N-Ch	X	4.5	5.5	500mA		140	X	—	X	X	Latched	X	X	X	SOIC-8
MIC2073	Dual	N-Ch	X	2.7	5.5	500mA		210	X	Noninverting	X	X	X	X	X	X	SOIC-8
MIC2074	Dual	N-Ch	X	2.7	5.5	500mA		210	X	Inverting	X	X	X	X	X	X	SOIC-8

(1) S3 State

## USB Transceivers

<b>Bold = New</b> P/N	Type	Switch Element	Package
MIC2550	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2550A (1)	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2550A-2.5 (1)	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	2.5x2.5
MIC2551	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2551A (1)	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	TSSOP-14, 3x3
MIC2551A-2.5 (1)	Universal Serial Bus Transceiver	1.5Mbps (low) and 12Mbps (full)	2.5x2.5
MIC2555 (1)	Universal Serial Bus On-The-Go (OTG) Transceiver	1.5Mbps (low) and 12Mbps (full)	4x4

(1) Recommended for new designs

## PC Card/PCMCIA/CardBus Power Distribution Switches

<b>Bold = New</b> P/N	Slots Supported	V <sub>CC3</sub> On-Resistance (mΩ)	V <sub>CC5</sub> On-Resistance (mΩ)	V <sub>PP</sub> On-Resistance (mΩ)	Current Limit	Thermal Shutdown	Charge Pump(1)	UL Approved	Package
MIC2560	Single	40	70	550	X	X			WSOIC-16
MIC2561	Single	110	210	550	X	X			SOIC-14
MIC2562A	Single	100	70	600	X	X	X	X	SOIC-14, TSSOP-16
MIC2563A	Dual	100	70	600	X	X	X	X	SSOP-28
MIC2564A	Dual	120	85	1300	X	X	X	X	SSOP-24, TSSOP-24
MIC2566	Single	120	85		X	X	X	X	SOIC-14, TSSOP-14
MIC2568	Dual	120	85		X	X	X	X	SSOP-28, TSSOP-28
MIC2569	1-CableCard	90		275	X	X	X		QSOP-16

(1) 12V is not required for switching when equipped with a charge pump.

# Power Management Selection Guide

## Fan Control

Bold = New

P/N	Description	Package
MIC502	Fan Management IC	PDIP-8, SOIC-8
MIC74	2-wire SMBus™, I2C™ I/O Expander and Fan Controller	QSOP-16

## Temperature Sensors

Bold = New

P/N	Description	Internal Zone	Remote Zone	Data Width	CRIT Output	# of Device per I2C Bus	Resolution (Bits)	Accuracy	Package
MIC184	Local/Remote Thermal Supervisor	1.0	1.0 (1)	9		8 (2)	9	±3%	SOIC-8, MSOP-8
MIC280	Precision IttyBitty® Thermal Supervisor	1.0	1.0	12	X	8	12	±1%	SOT23-6
MIC281	Low-Cost IttyBitty® Thermal Sensor		1.0	8		8	8	±3%	SOT23-6
MIC284	2-Zone Thermal Supervisor w/CRIT Output	1.0	1.0	8	X	8	8	±3%	SOIC-8, MSOP-8
MIC384	3-Zone Thermal Supervisor	1.0	2.0	8		8	8	±3%	SOIC-8, MSOP-8

(1) MIC184 has limit registers for monitoring one zone at a time; either the internal or external zone may be monitored at any given time.

(2) In LM75 mode; 4 when using T1 function.

# Power Management Selection Guide

## Voltage Monitors and Supervisors

<b>Bold = New</b> P/N	Reset Output	Threshold (V)	t <sub>RESET</sub> (ms)	I <sub>SUPPLY</sub> ( $\mu$ A)	Manual Reset	Watchdog Timer (ms)	Power Fail Comparator	* = Reduced height package Package
MIC803	Active-Low/Open-Drain	2.63, 2.93, 3.00, 3.08, 4.00, 4.10, 4.38, 4.63	20/140/1100	5.0				SOT23-3, SC70-3
MIC809	Active-Low/Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	5.0				SOT23-3, SC70-3
MIC809-5	Active-Low/Push-Pull	2.93	30	5.0				SOT23-3, SC70-3
MIC810	Active-High/Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	5.0				SOT23-3, SC70-3
MIC1810	Active-Low/Push-Pull	4.12, 4.37, 4.62	100	5.0				SOT23-3
MIC1815	Active-Low/Push-Pull	2.55, 2.88	100	5.0				SOT23-3
MIC8114	Active-Low/Push-Pull	3.08	790	5.0				SOT143
MIC811	Active-Low/Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	5.0	X			SOT143
MIC812	Active-High/Push-Pull	2.63, 2.93, 3.08, 4.00, 4.38, 4.63	140	5.0	X			SOT143
MIC2775	Active-High/Low/Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	140	5.0	X			SOT23-5
MIC2776N	Active-Low/Open-Drain	0.3, external adjustable w/resistor divider	140	3.0	X			SOT23-5
MIC2776H	Active-High/Push-Pull	0.3, external adjustable w/resistor divider	140	3.0	X			SOT23-5
MIC2776L	Active-Low/Push-Pull	0.3, external adjustable w/resistor divider	140	3.0	X			SOT23-5
MIC2785	Active-Low/Push-Pull	1.62	0.025	4.5	X			1.2x1.2
MIC6315	Active-Low/Open-Drain	2.63, 2.93, 3.00, 3.08, 4.00, 4.10, 4.38, 4.63	20/140/1100	5.0	X			SOT143
MIC8115	Active-Low/Push-Pull	3.08	1100	5.0	X			SOT143
MIC1232	Active-High/Low/Push-Pull	4.37, 4.62	250	18		120/600/1200		SOIC-8, PDIP-8
MIC1832	Active-High/Low/Push-Pull	2.55, 2.88	250	15		120/600/1200		SOIC-8, PDIP-8
MIC707	Active-High/Low/Push-Pull	4.65	140	30			1.25V	SOIC-8, PDIP-8
MIC708	Active-High/Low/Push-Pull	2.63, 2.93, 3.08, 4.40	140	30			1.25V	SOIC-8, PDIP-8
MIC705	Active-Low/Push-Pull	4.65	140	30	X	1600	1.25V	SOIC-8, PDIP-8
MIC706	Active-Low/Push-Pull	2.63, 2.93, 3.08, 4.40	140	30	X	1600	1.25V	SOIC-8, PDIP-8

## Dual Voltage Monitors and Supervisors

<b>Bold = New</b> P/N	Reset Output	Reset Threshold Voltage	Reset Output Threshold Voltage	t <sub>RESET</sub> (ms)	I <sub>SUPPLY</sub> ( $\mu$ A)	Manual Reset	* = Reduced height package Package
MIC2772	Active-Low/Open-Drain	2.93, 3.08, 4.38, 4.63	2.93, 3.08, 4.38, 4.63V	20/140/1100	10	X	2x2
MIC2774N	Active-Low/Open-Drain	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	300mV	140	3.5	X	SOT23-5
MIC2774H	Active-High/Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	300mV	140	3.5	X	SOT23-5
MIC2774L	Active-Low/Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	300mV	140	3.5	X	SOT23-5
MIC2777	Active-High/Low/Push-Pull	1.69, 2.25, 2.34, 2.53, 2.67, 2.81, 2.93, 3.09, 4.43, 4.68	300mV	140	3.5		SOT23-5

## Under and Over-Voltage Supervisors

<b>Bold = New</b> P/N	Reset Output	Reset Threshold Voltage	Reset Output Threshold Voltage	t <sub>RESET</sub> (ms)	I <sub>SUPPLY</sub> ( $\mu$ A)	Manual Reset	* = Reduced height package Package
MIC2755	Active-Low/Open-Drain	1.24V	0.31V	700	2.0	X	MSOP-8
MIC2778	Active-Low/Open-Drain	1.24V	1.24V	140	1.0		SOT23-5
MIC2779H	Active-High/Push-Pull	1.24V	1.24V	140	1.0		SOT23-5
MIC2779L	Active-Low/Push-Pull	1.24V	1.24V	140	1.0		SOT23-5

# Hot Swap/Power Controller Selection Guide

## Low Voltage (<16V)

Bold = New P/N	# of Output	Input Voltage Range	Latch Off	Auto Retry	/FAULT	/POR	PWRGD or RST	Foldback Current Limit	Package	Comments
MIC2085	1	+2.3V to +16.5V	X		X	X		X	QSOP-16	Pin-pin equivalent to LTC1642
MIC2086	1	+2.3V to +16.5V	X		X	X	/PWRGD	X	QSOP-20	Extra comparator, crowbar out, & CL discharge capability
MIC2580A	4	±12V, +3.3V, +5V	X		X	X	/PWRGD	X	TSSOP-24	Single-slot controller for CompactPCI applications.
MIC2582	1	+2.3V to +13.2V	X			X			SOIC-8	Pin-pin equivalent to LTC1422; Dual-level fault detection.
MIC2583	1	+2.3V to +13.2V	X		X	X	PWRGD		QSOP-16	Dual-level fault detection; CL discharge capability.
MIC2583R	1	+2.3V to +13.2V		X	X	X	PWRGD		QSOP-16	Dual-level fault detection; CL discharge capability.
MIC2310-1	1	+10.8V to +13.2V	X	X	X		PWRGD		TSSOP-24	Single FET, constant power-limit 240VA Controller
MIC2310-2	1	+10.8V to +13.2V	X	X	X		/PWRGD		TSSOP-24	Single FET, constant power-limit 240VA Controller
MIC2584	2	CH1: +2.3V to +13.2V CH2: +1V to +13.2V	X		X	X			TSSOP-16	Output voltage tracking with dual-level fault detection.
MIC2585-1	2	CH1: +2.3V to +13.2V CH2: +1V to +13.2V	X		X	X	PWRGD		TSSOP-24	VOUT2 follows VOUT1
MIC2585-2	2	CH1: +2.3V to +13.2V CH2: +1V to +13.2V	X		X	X	PWRGD		TSSOP-24	VOUT1 follows VOUT2

## High Voltage (>16V)

MIC2586-1	1	+10V to +80V	X				PWRGD	X	SOIC-14	Multiple PWRGD for sequencing, Prog Delay
MIC2586-2	1	+10V to +80V	X				/PWRGD	X	SOIC-14	Multiple PWRGD for sequencing, Prog Delay
MIC2586R-1	1	+10V to +80V		X			PWRGD	X	SOIC-14	Multiple PWRGD for sequencing, Prog Delay
MIC2586R-2	1	+10V to +80V		X			/PWRGD	X	SOIC-14	Multiple PWRGD for sequencing, Prog Delay
MIC2587-1	1	+10V to +80V	X				PWRGD	X	SOIC-8	Pin-pin equivalent to LT1641-1
MIC2587-2	1	+10V to +80V	X				/PWRGD	X	SOIC-8	Pin-pin equivalent to LT1641-1
MIC2587R-1	1	+10V to +80V		X			PWRGD	X	SOIC-8	Pin-pin equivalent to LT1641-2
MIC2587R-2	1	+10V to +80V		X			/PWRGD	X	SOIC-8	Pin-pin equivalent to LT1641-2
MIC2588-1	1	-19V to -80V	X				PWRGD		SOIC-8	Pin-pin equivalent to LT1640/LT1640A/LT4250
MIC2588-2	1	-19V to -80V	X				/PWRGD		SOIC-8	Pin-pin equivalent to LT1640/LT1640A/LT4250
MIC2594-1	1	-19V to -80V	X				PWRGD		SOIC-8	MIC2588 with Programmable input ON/OFF control
MIC2594-2	1	-19V to -80V	X				/PWRGD		SOIC-8	MIC2588 with Programmable input ON/OFF control
MIC2589-1	1	-19V to -80V	X				PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD
MIC2589-2	1	-19V to -80V	X				/PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD
MIC2589R-1	1	-19V to -80V		X			PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD
MIC2589R-2	1	-19V to -80V		X			/PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD
MIC2595-1	1	-19V to -80V	X				PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD
MIC2595-2	1	-19V to -80V	X				/PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD
MIC2595R-1	1	-19V to -80V		X			PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD
MIC2595R-2	1	-19V to -80V		X			/PWRGD		SOIC-14	Programmable UVLO and OV, staggered PWRGD

## Compact-PCI/PCI-X/PCI-Express

MIC2590B	10	±12, +5, +3.3, & +3.3VAUX	X		X				TQFP-48	2-Slot controller for PCI v2.x and PCI-X 1.0b. Compliant applications with IPMI v1.0 support.
MIC2593	10	±12, +5, +3.3, & +3.3VAUX	X		X				TQFP-48	2-Slot controller for PCI v2.x and PCI-X 1.0b. Compliant applications without IPMI v1.0 support.
MIC2341	6	'+12, +3.3, & +3.3VAUX	X		X		/PWRGD and /DLY_PWRGD		TQFP-48	2-Slot PCI-E, No SMBus, Main & AUX out independent
MIC2341R	6	'+12, +3.3, & +3.3VAUX		X					TQFP-48	2-Slot PCI-E, No SMBus, Main & AUX out independent
MIC2342	6	'+12, +3.3, & +3.3VAUX	X		X		/PWRGD and /DLY_PWRGD		TQFP-48	2-Slot PCI-E, No SMBus, Main & AUX out depends on AUX overcurrent
MIC2342R	6	'+12, +3.3, & +3.3VAUX		X					TQFP-48	2-Slot PCI-E, No SMBus, Main & AUX out depends on AUX overcurrent
MIC2591B	6	'+12, +3.3, & +3.3VAUX	X		X		/PWRGD		TQFP-48	2-Slot PCI-E, with IPMI v1.0 Support
MIC2592B	6	'+12, +3.3, & +3.3VAUX	X		X		/PWRGD		TQFP-48	2-Slot PCI-E, with IPMI v1.0 Support

# Linear ICs Selection Guide

## Comparators

Bold = New P/N	Description	$V_{IN}$		Current ( $\mu$ A)	Input Offset Voltage (max)	Input Offset Input Bias Current	Propagation Delay	Output	Package
		Min (V)	Max (V)						
MIC6270	Fast, High-Voltage Comparator	2.0	36	300	5mV	25nA	0.6ns	Open-Drain	SOT23-5
MIC7211	Rail-to-Rail Input Comparator	2.2	10	5.0	10mV	5pA	4 $\mu$ s	Push-Pull	SOT23-5
MIC7221	Rail-to-Rail Input Comparator	2.2	10	5.0	10mV	5pA	4 $\mu$ s	Open-Drain	SOT23-5

## Comparators with Internal Reference

Bold = New P/N	Description	$V_{IN}$		Current ( $\mu$ A)	Onboard Reference (V)	Onboard Reference Tolerance	Input Offset Input Bias Current	Propagation Delay	Output	Package
		Min (V)	Max (V)							
MIC833	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.0	1.25	$\pm$ 1%	5pA	5 $\mu$ s	Open-Drain	SOT23-5
MIC834	Comparator with Reference	1.5	5.5	1.5	1.25	$\pm$ 1%	5pA	5 $\mu$ s	Open-Drain	SOT23-5
MIC841H	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.5	1.25	$\pm$ 1.25%	5pA	12 $\mu$ s	Push-Pull	SC70-5
MIC841L	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.5	1.25	$\pm$ 1.25%	5pA	12 $\mu$ s	Push-Pull	SC70-5
MIC841N	Comparator + Ref w/ Adj Hysteresis	1.5	5.5	1.5	1.25	$\pm$ 1.25%	5pA	12 $\mu$ s	Open-Drain	SC70-5
MIC842H	Comparator with Reference	1.5	5.5	1.5	1.25	$\pm$ 1.25%	5pA	12 $\mu$ s	Push-Pull	SC70-5
MIC842L	Comparator with Reference	1.5	5.5	1.5	1.25	$\pm$ 1.25%	5pA	12 $\mu$ s	Push-Pull	SC70-5
MIC842N	Comparator with Reference	1.5	5.5	1.5	1.25	$\pm$ 1.25%	5pA	12 $\mu$ s	Open-Drain	SC70-5
MIC845	Comparator with Reference	2.75	5.5	1.0	2.55	$\pm$ 2%	5pA	12 $\mu$ s	Open-Drain	SC70-5

## Operational Amplifiers

Bold = New P/N	Description	$V_{IN}$		# of Op- Amps per Package	Supply Current (per Op Amp)	Rail-to-Rail	Input Offset		Typ Input Bias Current	GBW	Slew Rate (V/ $\mu$ s)	Package
		Min (V)	Max (V)				Voltage Typ (mV)	Voltage Max (mV)				
MIC6211	High Voltage Op-Amp	4.0	32	1	1.2mA			7.0	50nA	2.5MHz	6.0	SOT23-5
LMC7101A	General Purpose	2.7	12	1	500 $\mu$ A	Input/Output	0.1	6.0	1pA	500KHz	0.5	SOT23-5
LMC7101B	General Purpose	2.7	12	1	500 $\mu$ A	Input/Output		9.0	1pA	500KHz	0.5	SOT23-5
MIC7111	Micropower 1.8V	1.8	11	1	15 $\mu$ A	Input/Output		7.0	1pA	25KHz	20	SOT23-5
MIC7122	General Purpose	2.2	15	2	350 $\mu$ A	Input/Output		9.0	1pA	750KHz	0.7	MSOP-8
MIC7300	High Output Drive	2.2	10	1	700 $\mu$ A	Input/Output		9.0	0.5pA	500KHz	0.5	SOT23-5, MSOP-8
MIC860	Very Low Power	2.43	5.25	1	30 $\mu$ A	Output		15	20pA	4.0MHz	3.0	SC70-5
MIC861	Very Low Power	2.43	5.25	1	4.6 $\mu$ A	Output		10	20pA	400KHz	0.12	SC70-5
MIC862	Very Low Power	2.0	5.25	2	31 $\mu$ A	Output		6.0	10pA	3.0MHz	4.0	SOT23-8
MIC863	Very Low Power	2.0	5.25	2	4.2 $\mu$ A	Output		6.0	10pA	450KHz	0.35	SOT23-8
MIC910	Low Pwr/High Speed	5.0	18	1	2.4mA			15	3.5 $\mu$ A	135MHz	270	SOT23-5
MIC911	Low Pwr/High Speed	5.0	18	1	1.25mA			10	1.5 $\mu$ A	105MHz	120	SOT23-5
MIC912	Low Pwr/High Speed	5.0	18	1	2.4mA			15	3.5 $\mu$ A	200MHz	360	SOT23-5
MIC913	Low Pwr/High Speed	5.0	18	1	4.2mA			16	5.5 $\mu$ A	350MHz	500	SOT23-5
MIC914	Low Pwr/High Speed	5.0	18	1	1.25mA			10	1.5 $\mu$ A	160MHz	160	SOT23-5
MIC915	Low Pwr/High Speed	5.0	18	2	2.4mA			15	3.5 $\mu$ A	135MHz	270	MSOP-10
MIC916	Low Pwr/High Speed	5.0	18	3	2.4mA			15	3.5 $\mu$ A	135MHz	270	QSOP-16
MIC918	Low Pwr/High Speed	5.0	18	1	550 $\mu$ A			5.0	0.26 $\mu$ A	51MHz	1500	SC70-5
MIC919	Low Pwr/High Speed	5.0	18	1	360 $\mu$ A			5.0	0.13 $\mu$ A	27MHz	1500	SC70-5
MIC920	Low Pwr/High Speed	5.0	18	1	500 $\mu$ A			5.0	0.26 $\mu$ A	80MHz	3000	SC70-5
MIC921	Low Pwr/High Speed	5.0	18	1	300 $\mu$ A			5.0	0.13 $\mu$ A	45MHz	3000	SC70-5
MIC922	Low Pwr/High Speed	5.0	18	1	2.5mA			5.0	1.7 $\mu$ A	230MHz	1500	SC70-5
MIC923	Low Pwr/High Speed	5.0	18	1	2.5mA			5.0	1.7 $\mu$ A	410MHz	2200	SC70-5

# Linear ICs Selection Guide

## References

<b>Bold = New</b> P/N	Description	V <sub>IN</sub> Max (V)	Tol (Typ) %	V <sub>OUT</sub> (V)	Output Current Min	Output Current Max	Noise ( $\mu$ V) rms	Reverse Breakdown Stability	Package
LM4040C	Precision Micropower Shunt	15	$\pm 0.5$	2.5, 4.096, 5.0	60 $\mu$ A	15mA	35	120ppm	SOT23-3
LM4040D	Precision Micropower Shunt	15	$\pm 1.0$	2.5, 4.096, 5.0	60 $\mu$ A	15mA	35	120ppm	SOT23-3
LM4041C	Precision Micropower Shunt	15	$\pm 0.5$	1.225, Adj (1.24V-10V)	60 $\mu$ A	12mA	20	120ppm	SOT23-3
LM4041D	Precision Micropower Shunt	15	$\pm 1.0$	1.225, Adj (1.24V-10V)	60 $\mu$ A	12mA	20	120ppm	SOT23-3

## Timers

<b>Bold = New</b> P/N	Description	Min (V)	V <sub>IN</sub> Max (V)	Supply Current ( $\mu$ A)	Timing Accuracy	Max Frequency	Package
MIC1555	RC Timer/Oscillator "555 Timer"	2.7	18	240	0.02	5MHz	SOT23-5
MIC1557	RC Timer/Oscillator with Shutdown	2.7	18	240	0.02	5MHz	SOT23-5

# RF Wireless ICs Selection Guide

## Encoders

Bold = New P/N	Data Rate	$V_{IN}$		Internal Address	Address Combinations	Supply Current (mA)	CRC	Temp. Range	Package
		Min (V)	Max (V)						
MICRF302	<4.8Kbps	1.8	3.6	20-bit	>1M	0.130	8-bit	-40°C to +85°C	2.5x2.5

## Transmitters

Bold = New P/N	Frequency Range (MHz)	$V_{IN}$		Modulation	Data Rate Modulation	Supply Current (mA)	Output Power	Temp. Range	Package
		Min (V)	Max (V)						
MICRF112	300 - 450	1.8	3.6	ASK/FSK	<50Kbps ASK <10Kbps FSK	8.5 (ASK) 12.5 (FSK)	+10dBm	-40°C to +125°C	MSOP-10
MICRF113	300 - 450	1.8	3.6	ASK/OOK	<10Kbps	12.3	+10dBm	-40°C to +85°C	SOT23-6
MICRF405	290 - 980	2.2	3.6	ASK/FSK	<200Kbps FSK >50Kbps ASK	18.0	+10dBm	-40°C to +125°C	4x4

## Receivers

Bold = New P/N	Frequency Range (MHz)	$V_{IN}$		Modulation	Maximum Data Rate	Supply Current (mA)	Sensitivity	Temp. Range	Auto Polling	Package
		Min (V)	Max (V)							
MICRF009	300 - 440	4.75	5.5	ASK/OOK	2Kbps	2.9	-104dBm @ 1Kbps	-40°C to +85°C		SOIC-16
MICRF010	300 - 440	4.75	5.5	ASK/OOK	2Kbps	2.9	-105dBm @ 1Kbps	-40°C to +85°C		SOIC-8
MICRF221	850 - 950	3	3.6	ASK/OOK	10Kbps	9.0	-109dBm @ 1Kbps	-40°C to +105°C	X	QSOP-16
<b>MICRF220</b>	300 - 450	3.0	3.6	ASK/OOK	10Kbps	4.0	-110dBm @ 1Kbps	-40°C to +105°C		QSOP-16
<b>MICRF219A</b>	300 - 450	3.0	3.6	ASK/OOK	10Kbps	4.0	-110dBm @ 1Kbps	-40°C to +105°C	X	QSOP-16
MICRF218	300 - 450	3.0	3.6	ASK/OOK	10Kbps	5.5	-110dBm @ 1Kbps	-40°C to +85°C		QSOP-16
MICRF213	300 - 350	3.0	3.6	ASK/OOK	7.2Kbps	3.9	-110dBm @ 1Kbps	-40°C to +105°C		QSOP-16
MICRF211	380 - 450	3.0	3.6	ASK/OOK	10Kbps	6.0	-110dBm @ 1Kbps	-40°C to +105°C		QSOP-16

## Transceivers

Bold = New P/N	Frequency Range (MHz)	$V_{IN}$		Modulation	Maximum Data Rate	Supply Current		Sensitivity	Output Power	Temp. Range	Package
		Min (V)	Max (V)			Rx (mA)	Tx (mA)				
MICRF505	850 - 950	2.0	2.5	FSK	<200Kbps	13.5	28.0	-111dBm @ 2.4Kbps	+10dBm	-40°C to +85°C	5x5
MICRF505L	850 - 950	2.25	5.5	FSK	<200Kbps	13.5	28.0	-110dBm @ 2.4Kbps	+10dBm	-40°C to +85°C	5x5
MICRF506	410 - 450	2.0	2.5	FSK	<200Kbps	12.0	21.5	-113dBm @ 2.4Kbps	+11dBm	-40°C to +85°C	5x5
MICRF507	470 - 510	2.0	2.5	FSK	<200Kbps	12.0	21.5	-113dBm @ 2.4Kbps	+11dBm	-40°C to +85°C	5x5

# Ethernet Product Highlight

## IEEE 1588v2 EtherSynch™ Switch for Industrial Ethernet Networks

Micrel's KSZ84XX family provides efficient end-device connectivity for Industrial Ethernet networks, minimizing per-device attachment costs.

The KSZ84XX family features EtherSynch™ technology, blending IEEE 1588v2 time stamping, precision local clock, synchronized I/O, and wire-speed Ethernet switching in a compact package. The device supports leading Industrial Ethernet standards including Ethernet/IP™, Profinet™, PowerLink™, among others.

Precision GPIO extends synchronization to local devices and allows multiple end devices to share the Industrial Ethernet attachment. The 12 Precision GPIO are capable of creating complex waveforms, with multiple GPIO events supported per pin.

Micrel pre-qualified and optimized the KSZ84XX family to operate with an optimized Precision Timing Protocol (PTPv2) protocol stack to get up and running quickly.

The hardware-oriented chip architecture reduces synchronization and communications processing demands, streamlining the Host CPU.

Micrel features the industry's most robust, and low-power Industrial Ethernet switches, complemented by advanced physical layer technology, and power management.

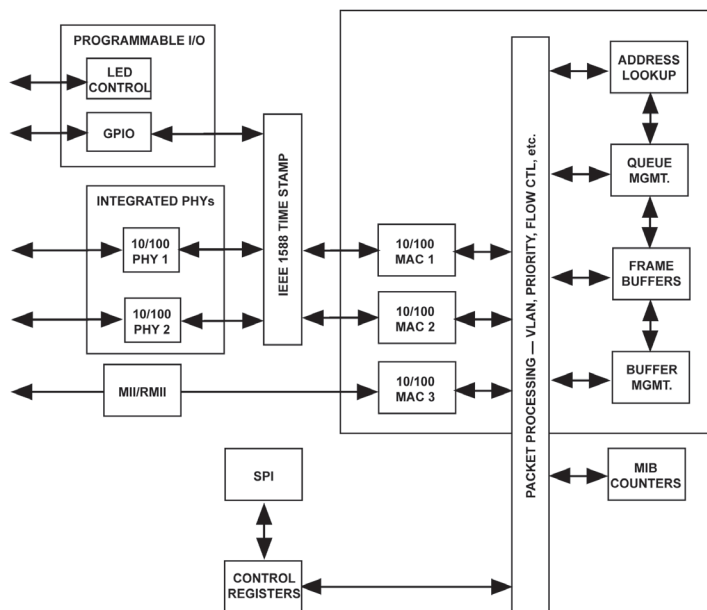
### Applications

- Industrial Ethernet end-device attachments for both distributed and centralized topologies
- Daisy Chained 1588 networks

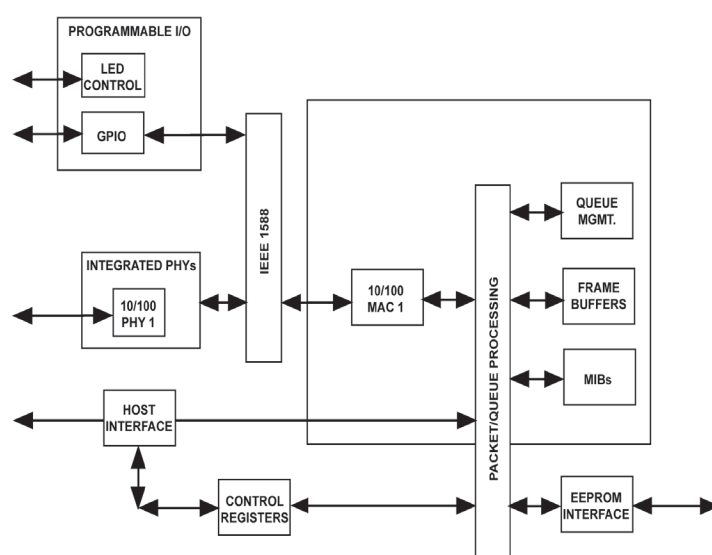
### Ordering Information

P/N	Ports	Interface
KSZ8463MLI	3	MII
KSZ9463RLI	3	RMII
KSZ8442HLI	3	8/16-Bit
KSZ8441HLI	1	8/16-Bit

- Package: ROHS 64-pin LQFP (10mm x 10mm)
- Power: single 3.3V supply, @ < 500mW
- Industrial temperature range: -40°C to +85°C



KSZ8463MLI / RLI



KSZ8441HLI



# LAN Solutions Selection Guide

## PHYS

<b>Bold = New</b> P/N	Copper Support	Fiber Support	MII	RMII	Interface GMII	RGMII	Vdd I/O (V)	LinkMD® (Cable Diag)	Temp Range	802.3az EEE	Int Term	Package
KSZ9021GN	10/100/1000		X		X		3.3	X	C, I		X	8x8 64-QFN
KSZ9021RN	10/100/1000					X	2.5/3.3	X	C, I		X	7x7 48-QFN
KSZ9021GQ	10/100/1000		X		X		3.3	X	C, I		X	128-PQFP
KSZ9021RL	10/100/1000					X	2.5/3.3	X	C, I		X	64-E-LQFP
<b>KSZ9031GN *</b>	10/100/1000		X		X		1.8/2.5/3.3	X	C, I	X	X	8x8 64-QFN
<b>KSZ9031RN *</b>	10/100/1000					X	1.8/2.5/3.3	X	C, I	X	X	7x7 48-QFN
<b>KSZ8031RNL-E *</b>	10/100			X			1.8/2.5/3.3	X	C, I	X	X	24-QFN
<b>KSZ8021RNL-E *</b>	10/100			X			1.8/2.5/3.3	X	C	X	X	24-QFN
<b>KSZ8051MNL-E *</b>	10/100		X				1.8/2.5/3.3	X	A*, C, I	X	X	32-QFN
<b>KSZ8051RNL-E *</b>	10/100			X			1.8/2.5/3.3	X	C, I	X	X	32-QFN
<b>KSZ8051MLL-E *</b>	10/100		X				1.8/2.5/3.3	X	C, I	X	X	48-LQFP
KSZ8031RNL	10/100			X			1.8/2.5/3.3	X	C, I		X	24-QFN
KSZ8021RNL	10/100			X			1.8/2.5/3.3	X	C		X	24-QFN
KSZ8051MNL	10/100		X				1.8/2.5/3.3	X	C, I		X	32-QFN
KSZ8051RNL	10/100			X			1.8/2.5/3.3	X	C, I		X	32-QFN
KSZ8051MLL	10/100		X				1.8/2.5/3.3	X	C, I		X	48-LQFP
KSZ8051FLL	10/100	100FX	X				1.8/2.5/3.3	X	C, I		X	48-LQFP
KSZ8041NL	10/100		X	X			3.3		A, C, I, J			32-QFN

C (Commercial)      0° to 70°C  
 I (Industrial)        -40° to 85°C  
 A (Automotive)      -40° to 85°C  
 J (Extended)        -40° to 125°C

\* Consult Micrel for availability

# LAN Solutions Selection Guide

## Controllers

P/N	# of Eth Ports	Copper Support	Fibre Support	Interface			V <sub>DD</sub> I/O (V)	LinkMD® (Cable Diag)	Temp. Range	Package
				8/16-Bit	32-Bit	SPI				
KSZ8851-16MLL	1	10/100		X			1.8/2.5/3.3	X	A, C, I, J	48-LQFP
KSZ8851-16MQL	1	10/100		X			1.8/2.5/3.3	X	C, I	128-PQFP
KSZ8851-32MQL	1	10/100			X		1.8/2.5/3.3	X	C, I	128-PQFP
KSZ8851SNL	1	10/100				X	1.8/2.5/3.3	X	C, I	5x5 32-MLF
KSZ8841-PMQL	1	10/100					3.3/5.0	X	C, I	128-PQFP
KSZ8842-16MQL	2	10/100		X			3.3/5.0	X	C	128-PQFP
KSZ8842-16MVL	2	10/100		X			3.3/5.0	X	C, I	128-LQFP
KSZ8842-16MBL	2	10/100		X			3.3/5.0	X	C, I	100-LFBGA
KSZ8842-32MQL	2	10/100			X		3.3/5.0	X	C	128-PQFP
KSZ8842-32MVL	2	10/100			X		3.3/5.0	X	C, I	128-LQFP
KSZ8842-PMQL	2	10/100					3.3/5.0	X	C, I	128-PQFP
KSZ8842-PMBL	2	10/100					3.3/5.0	X	A, C	100-LFBGA
KSZ8862-16MQL-FL	2	10/100	10FL	X			3.3/5.0	X	C	128-PQFP
KSZ8862-16MQL-FX	2	10/100	100FX	X			3.3/5.0	X	C	128-PQFP
KSZ8862-16MQL-SX	2	10/100	100SX	X			3.3/5.0	X	C	128-PQFP
KSZ8862-32MQL-FL	2	10/100	10FL		X		3.3/5.0	X	C	128-PQFP
KSZ8862-32MQL-FX	2	10/100	100FX		X		3.3/5.0	X	C	128-PQFP
KSZ8862-32MQL-SX	2	10/100	100SX		X		3.3/5.0	X	C	128-PQFP

C (Commercial)	0° to 70°C
I (Industrial)	-40° to 85°C
A (Automotive)	-40° to 85°C
J (Extended)	-40° to 125°C

# LAN Solutions Selection Guide

## Switches

P/N	# of Eth Ports	Copper Support	Fiber Support	MII	Interface				V <sub>dd</sub> I/O (V)	LinkMD® (Cable Diag)	Temp Range	Int Term	Package
					RMI	8/16-Bit	32-Bit	PCI					
KSZ8863MML	3	10/100 (2)		X					1.8/2.5/3.3	X	C, I	48-LQFP	
KSZ8863RLL	3	10/100 (2)							1.8/2.5/3.3	X	C, I	48-LQFP	
KSZ8863FLL	3	10/100 (1)	100FX(1)	X					1.8/2.5/3.3	X	C, I	48-LQFP	
KSZ8873MML	3	10/100 (2)		X					1.8/2.5/3.3	X	A, C, I	64-LQFP	
KSZ8873RLL	3	10/100 (2)			X				1.8/2.5/3.3	X	C, I	64-LQFP	
KSZ8873FLL	3		100FX (2)	X					1.8/2.5/3.3	X	C, I	64-LQFP	
KSZ8873MML	3	10/100 (1)		X					1.8/2.5/3.3	X	C, I	64-LQFP	
<b>KSZ8864RMN</b>	4	10/100(2)		X(2)	X				1.8/2.5/3.3		C, I	X 64-QFN	
<b>KSZ8895MQ</b>	5	10/100 (5)		X(2)					1.8/2.5/3.3		C, I	X 128-PQFP	
<b>KSZ8895RQ</b>	5	10/100 (5)			X(2)				1.8/2.5/3.3		C, I	X 128-PQFP	
<b>KSZ8995FMQ</b>	5	10/100 (3)	100FX (2)	X(2)					1.8/2.5/3.3		C, I	X 128-PQFP	
<b>KSZ8895MLU</b>	5	10/100 (4)		X(2)					1.8/2.5/3.3		A	X 128-LQFP	
KSZ8997	8	10/100 (8)							3.3		C	128-PQFP	
KSZ8999	9	10/100 (8)	100FX (8)	X					3.3		C, I	208-PQFP	
KSZ8842-16MQL	2	10/100 (2)				X			3.3/5.0	X	C	128-PQFP	
KSZ8842-16MVL	2	10/100 (2)				X			3.3/5.0	X	C, I	128-LQFP	
KSZ8842-16MBL	2	10/100(2)				X			3.3/5.0	X	C, I	100-LFBGA	
KSZ8842-32MQL	2	10/100 (2)					X		3.3/5.0	X	C	128-PQFP	
KSZ8842-32MVL	2	10/100 (2)					X		3.3/5.0	X	C, I	128-LQFP	
KSZ8842-PMQL	2	10/100 (2)					X		3.3/5.0	X	C, I	128-PQFP	
KSZ8842-PMBL	2	10/100(2)					X		3.3/5.0	X	C, A	100-LFBGA	
KSZ8862-16MQL	2	10/100	FL,SX,FX				X		3.3/5.0		C	128-PQFP	
KSZ8862-32MQL	2	10/100	FL,SX,FX				X		3.3/5.0		C	128-PQFP	

C (Commercial)            0° to 70°C  
 I (Industrial)            -40° to 85°C  
 A (Automotive)        -40° to 85°C  
 J (Extended)            -40° to 125°C

# LAN Solutions Selection Guide

## IEEE-1588 Ethernet

Bold = New P/N	# of Eth Ports	Copper Support	Fiber Support	Interface		# of GPIO	V <sub>dd</sub> I/O (V)	LinkMD® (Cable Diag)	Temp Range	802.3az EEE	Int Term	Package
				MII	RMI							
<b>KSZ8463MLI*</b>	2	10/100 (2)	100FX(2)	X		12	1.8/2.5/3.3	X	I	X	X	64-LQFP
<b>KSZ8463RLI*</b>	2	10/100 (2)	100FX(2)		X	12	1.8/2.5/3.3	X	I	X	X	64-LQFP
<b>KSZ8442HLI*</b>	2	10/100 (2)	100FX(2)			7	1.8/2.5/3.3	X	I	X	X	64-LQFP
<b>KSZ8441HLI*</b>	1	10/100	100FX			7	1.8/2.5/3.3	X	I	X	X	64-LQFP

C (Commercial) 0° to 70°C  
 I (Industrial) -40° to 85°C  
 A (Automotive) -40° to 85°C  
 J (Extended) -40° to 125°C

\*Contact Micrel for availability.

## ARM Based Ethernet SOC

Bold = New P/N	# of Eth Ports	Copper Support	Fiber Support	# of PCI Ports	Processor Speed	UART(s) Speed	USB 2.0	SDIO	GPIO	Counter Timer	Other I/O	DES/3DES Security Engine	LinkMD® Cable Diag	Supply Voltage	Temp Range	Package
KSZ8695P	5	10/100	100FX	3	ARM922T 166MHz	1 x 115Kbps			16	2 x 32-bit			1.8V, 3.3V	C, I	289-PBGA	
KSZ8695X	5	10/100	100FX		ARM922T 166MHz	1 x 115Kbps			8	2 x 32-bit			1.8V, 3.3V	C	289-PBGA	
KSZ8692PB	2	10/100 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/ Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2V, 2.5V, 3.3V	C, I	400-PBGA 24 x 24
KSZ8692PB-S	2	10/100 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/ Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2V, 2.5V, 3.3V	C	400-PBGA 17 x 17
KSZ8692XPB	2	10/100 MAC		1	ARM922T 250MHz	4 x 10Mbps	2 x Host/ Device 480Mbps		20	2 x 32-bit	I2S, SPI, I2C		X	1.2V, 2.5V, 3.3V	C	400-PBGA 24 x 24
KSZ9692PB	2	10/100/1000 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/ Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2V, 2.5V, 3.3V	C, I	400-PBGA 24 x 24
KSZ9692PB-S	2	10/100/1000 MAC		3	ARM922T 250MHz	4 x 10Mbps	2 x Host/ Device 480Mbps	X	20	2 x 32-bit	I2S, SPI, I2C	X	X	1.2V, 2.5V, 3.3V	C	400-PBGA 17 x 17
KSZ9692XPB	2	10/100/1000 MAC		1	ARM922T 250MHz	2 x 10Mbps	2 x Host/ Device 480Mbps		20	2 x 32-bit	I2S, SPI, I2C		X	1.2V, 2.5V, 3.3V	C	400-PBGA 24 x 24

C (Commercial) 0° to 70°C  
 I (Industrial) -40° to 85°C  
 A (Automotive) -40° to 85°C  
 J (Extended) -40° to 125°C

## Power Over Ethernet (POE)

Bold = New P/N	# of Ports	Comments	Package
MIC2358	8	802.3af 8 port PSE Controller	64-LQFP

# Automotive (AEC-Q100 Qualified) Selection Guide

## Power Management

<b>Bold = New P/N</b>	<b>VIN</b>	<b>Comments</b>	<b>Package</b>
MAQ5280	4.5V to 120V	25mA LDO with Reverse Battery Protection	eSOIC-8
MAQ3203	4.5V to 42V	1.5MHz Step-Down LED Driver	SOIC-8
<b>MAQ4123</b>	4.5V to 20V	Low-Side Mosfet Driver, Dual Inverting	eSOIC-8
<b>MAQ4124</b>	4.5V to 20V	Low-Side Mosfet Driver, Dual Non-Inverting	eSOIC-8
<b>MAQ4125</b>	4.5V to 20V	Low-Side Mosfet Driver, Inverting + Non-Inverting	eSOIC-8

## LAN Solutions

<b>Bold = New P/N</b>	<b>VIN</b>	<b>Comments</b>	<b>Package</b>
<b>KSZ8051MNLU *</b>	3.3V	10/100 Ethernet PHY w/ MII	32-QFN
<b>KSZ8051RNLU *</b>	3.3V	10/100 Ethernet PHY w/ RMII	32-QFN
KSZ8041NL AM	3.3V	10/100 Ethernet PHY w/ MII & RMII	32-QFN
<b>KSZ8851-16MLU *</b>	3.3V	10/100 Ethernet (MAC+PHY) Controller w/ 16-bit Host bus	48-LQFP
<b>KSZ8873MLL AM</b>	3.3V	10/100 Ethernet 3-Port Switch w/ MII	64-LQFP
KSZ8842-PMBL AM	3.3V	10/100 Ethernet 2-Port Switch w/ PCI	100-LFBGA
KSZ8893MQL AM	3.3V	10/100 Ethernet 3-Port Switch w/ MII & RMII	128-PQFP
<b>KSZ8895MLU</b>	3.3V	10/100 Ethernet 5-Port Switch w/ MII	128-LQFP
<b>KSZ8864RMNU *</b>	3.3V	10/100 Ethernet 4-Port Switch w/ MII & RMII	64-QFN

\*Contact Micrel for availability.

# High Bandwidth Product Highlights — ClockWorks™ Family

## The Next Generation of Ultra-Low Jitter Clock Synthesizers

Micrel's new ClockWorks™ Flex products are comprised of the SM802xxx series, which feature breakthrough technology advancements.

The SM802xxx series is the first offering within the new ClockWorks Flex family, the next generation of high-performance programmable clock synthesizers. These One Time Programming (OTP) devices eliminate the need for lengthy mask spin cycles, and allow prototypes to be supplied typically within a few days, allowing for fast and optimized clock tree solutions.

Common applications include SONET, Gigabit Ethernet, 10 Gigabit Ethernet, and similar networking standards. The device synthesizes different low-noise LVPECL output frequencies such as 125MHz, 156.25MHz, 312.5MHz, and 625MHz for Ethernet applications, and 77.76MHz, 155.52MHz, 311.04MHz, and 622.08MHz for SONET applications. Additional frequencies include 106.25MHz, 212.5MHz for Fibre Channel applications, and 100MHz and 200MHz for PCIe applications.

## ClockWorks™ Family

Part Number	Output Type / No.	Application	Package
SM802101UMG	HCSL (8)	PCI-e	44-QFN
SM802104UMG	LVPECL (2)	Fiber Channel	24-QFN
SM802105UMG	LVPECL (2)	10GbE/XAUI	24-QFN
SM802108UMG	LVPECL (2)	GbE/10GbE	24-QFN
SM802109UMG	HCSL (4)	PCI-e	24-QFN
SM802110UMG	LVPECL (1)	CPRI	24-QFN
SM802111UMG	LVPECL (2)	GbE	24-QFN
SM802116UMG	LVDS (2)	Fiber Channel	24-QFN

## Features

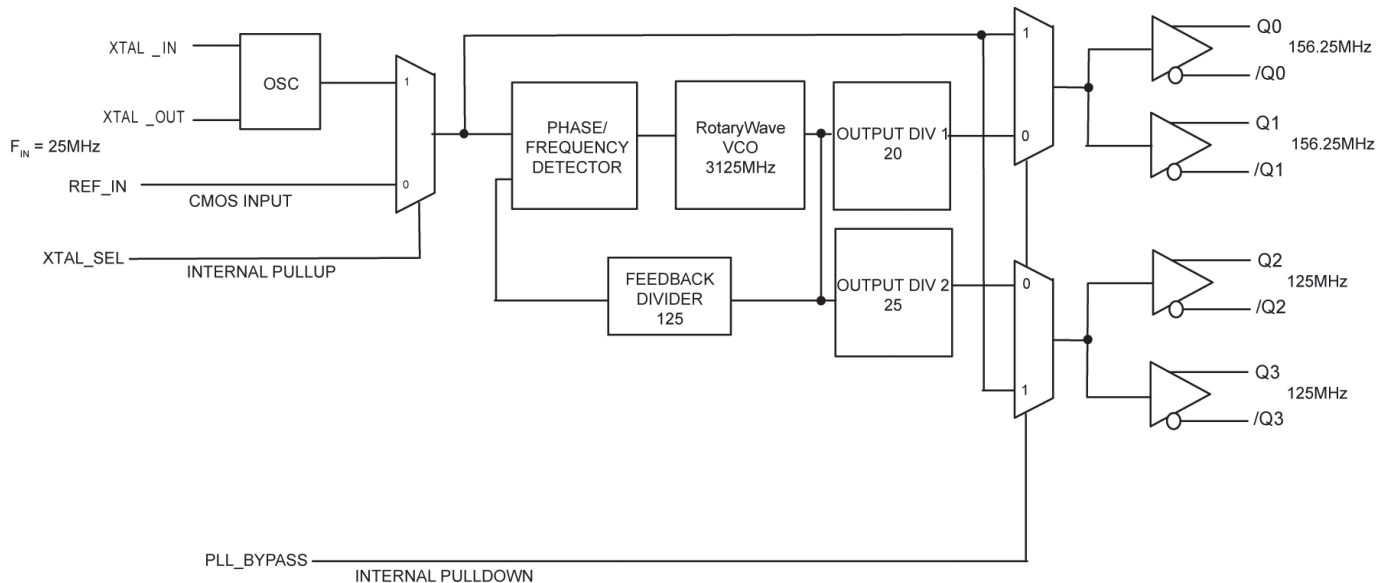
- Typical phase jitter
  - 110fs (1.875MHz – 20MHz)
  - 250fs (12kHz – 20MHz)
- High PSRR
- LVCOMOS, LCPECL, LVDS, and HCSL output logic
- 2.5V/3.3V supply voltage
- 75MHz to 625MHz
- Up to 8 differential or 16 single-ended outputs

## Applications

- 10Gigabit Ethernet
- Gigabit Ethernet

## Markets

- Switches/routers
- Networking
- Storage servers
- Data centers
- FTTH PON
- Cellular base stations



# High-Speed Clock and Data Distribution Selection Guide

## Fanout Buffers

<b>Bold = New P/N</b>	<b>Fanout</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Description</b>
SY54011R	1:2	ANY	CML	1.2/1.8V	3.2	MLF <sup>®</sup> -16	Low Voltage CML Fanout Buffer/Translator.
SY56011R	1:2	ANY	CML	1.2/1.8/2.5V	4.5	MLF <sup>®</sup> -16	Low Voltage EQ Fanout Buffer.
SY56020R	1:4	ANY	CML	1.2/1.8/2.5V	4.5	MLF <sup>®</sup> -16	Low Voltage EQ Fanout Buffer
SY56020XR	1:4	ANY	CML	1.2/1.8/2.5V	4.5	MLF <sup>®</sup> -16	Low Voltage EQ Fanout Buffer
SY58011U	1:2	ANY	CML	2.5/3.3V	7	MLF <sup>®</sup> -16	Fanout Buffer/Translator
SY58012U	1:2	ANY	LVPECL	2.5/3.3V	5	MLF <sup>®</sup> -16	Fanout Buffer/Translator
SY58013U	1:2	ANY	RS-LVPECL	2.5/3.3V	6	MLF <sup>®</sup> -16	Fanout Buffer/Translator w/400mV Output Swing
SY58020U	1:4	ANY	CML	2.5/3.3V	6	MLF <sup>®</sup> -16	Fanout Buffer/Translator
SY58021U	1:4	ANY	LVPECL	2.5/3.3V	4	MLF <sup>®</sup> -16	Fanout Buffer/Translator
SY58022U	1:4	ANY	RS-LVPECL	2.5/3.3V	5.5	MLF <sup>®</sup> -16	Fanout Buffer/Translator w/400mV Output Swing
SY58031U	1:8	ANY	CML	2.5/3.3V	5	MLF <sup>®</sup> -32	Fanout Buffer
SY58032U	1:8	ANY	LVPECL	2.5/3.3V	4	MLF <sup>®</sup> -32	Fanout Buffer
SY58033U	1:8	ANY	RS-LVPECL	2.5/3.3V	5.5	MLF <sup>®</sup> -32	Fanout Buffer with 400mV Output Swing
SY58034U	2:6	ANY	CML	2.5/3.3V	6	MLF <sup>®</sup> -32	Fanout Buffer w/2:1 MUX Input
SY58035U	2:6	ANY	LVPECL	2.5/3.3V	4.5	MLF <sup>®</sup> -32	Fanout Buffer w/2:1 MUX Input
SY58036U	2:6	ANY	RS-LVPECL	2.5/3.3V	6	MLF <sup>®</sup> -32	Fanout Buffer w/2:1 MUX Input and 400mV Output Swing
SY58606U	1:2	ANY	CML	2.5/3.3V	2.5	MLF <sup>®</sup> -16	Fanout Buffer with Fail-Safe Input
SY58607U	1:2	ANY	LVPECL	2.5/3.3V	2.5	QFN-16	Fanout Buffer with Fail-Safe Input
SY58608U	1:2	ANY	LVDS	2.5V	2	QFN-16	Fanout Buffer with Fail-Safe Input
SY89112U	2:12	ANY	LVPECL	2.5/3.3V	3	QFN-44	Improved EP111 Replacement
SY89113U	2:12	ANY	LVDS	2.5V	1	QFN-44	Fanout Buffer
SY89200U	1:8	ANY	LVDS	2.5V	1.5	QFN-32	3 Banks (+1, +2, +4)
SY89202U	1:8	ANY	LVPECL	2.5/3.3V	1.5	QFN-32	3 Banks (+1, +2, +4)
SY89311U	1:2	ECL/PECL/LVPECL/ LVECL	ECL/PECL/LVPECL/ LVECL	2.5/3.3/5V	3	MLF <sup>®</sup> -8	Differential Fanout Buffer
SY89467U	2:20	ANY	LVPECL	2.5/3.3V	1.5	TQFP-64	Fanout Buffer with Fail-Safe Input
SY89468U	2:20	ANY	LVDS	2.5V	1.5	TQFP-64	Fanout Buffer with Fail-Safe Input
SY89645L	1:4	LVCOS/LVTTL	LVDS	3.3V	0.65	TSSOP-16	LVCOS/LVTTL-to-LVDS Fanout Buffer
SY89808L	1:09	LVPECL/HSTL	HSTL	3.3V	0.5	TQFP-32	Fanout Buffer
SY89809L	1:09	LVPECL/HSTL	HSTL	3.3V	0.5	TQFP-32	Bus Clock Driver
SY89823L	1:22	LVPECL/HSTL	HSTL	3.3V	0.5	TQFP-64	Fanout Buffer/Translator
SY89824L	1:22	LVPECL/HSTL	HSTL	3.3V	0.5	TQFP-64	Bus Clock Driver
SY89825U	1:22	LVPECL/LVDS	LVPECL	2.5/3.3V	1	TQFP-64	Bus Clock Driver/Translator
SY89826L	1:22	LVPECL/LVDS	LVDS	3.3V	1	TQFP-64	Fanout Buffer/Translator
SY89827L	Dual 1:10	LVPECL/HSTL	HSTL	3.3V	0.5	TQFP-64	Fanout Buffer/Translator
SY89828L	Dual 1:10	LVPECL/LVDS	LVDS	3.3V	1	TQFP-64	Fanout Buffer/Translator
SY89829U	Dual 1:10	LVPECL/LVDS	LVPECL	2.5/3.3V	1	TQFP-64	Clock Driver
SY89830U	2:04	ECL/PECL/LVPECL/ LVECL	ECL/PECL/LVPECL/ LVECL	2.5/3.3/5V	2.5	TSSOP-16	Clock Driver with 2:1 MUX Input.
SY89831U	1:04	ANY	LVPECL	2.5/3.3V	2	MLF <sup>®</sup> -16	Fanout Buffer/Translator
SY89832U	1:04	ANY	LVDS	2.5V	2	MLF <sup>®</sup> -16	Fanout Buffer/Translator
SY89833L	1:04	ANY	LVDS	3.3V	2	MLF <sup>®</sup> -16	Fanout Buffer/Translator
SY89834U	2:04	LVTTL	LVPECL	2.5/3.3V	1	MLF <sup>®</sup> -16	Fanout Buffer with 2:1 MUX Input
SY89837U	2:8 RPE	ANY	LVPECL	2.5/3.3V	1.5	MLF <sup>®</sup> -32	RPE, FSI Fanout with 2:1 MUX Input
SY89838U	2:8 RPE	ANY	LVDS	2.5V	1.5	QFN-32	RPE, FSI Fanout with 2:1 MUX Input
SY89843U	2:2 RPE	ANY	LVPECL	2.5/3.3V	1.5	QFN-24	RPE, FSI Fanout with 2:1 MUX Input
SY89844U	2:2 RPE	ANY	LVDS	2.5V	1.5	QFN-24	RPE, FSI Fanout with 2:1 MUX Input

# High-Speed Clock and Data Distribution Selection Guide

## Fanout Buffers

<b>Bold = New P/N</b>	<b>Fanout</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Description</b>
SY89464U	2:10 RPE	ANY	LVPECL	2.5/3.3V	2	QFN-44	RPE, FSI Input MUX with 2:1 MUX Input
SY89465U	2:10 RPE	ANY	LVDS	2.5V	2	QFN-44	RPE, FSI Input MUX with 2:1 MUX Input
SY89473U	2:2	ANY	LVPECL	2.5/3.3V	3	QFN-24	Fanout Buffer/Translator
SY89474U	2:2	ANY	LVDS	2.5V	2.5V	QFN-24	Fanout Buffer/Translator
SY89846U	2:5	ANY	LVPECL	2.5/3.3V	1.5	QFN-32	Fanout Buffer with Fail-Safe Input
SY89847U	2:5	ANY	LVDS	2.5V	1.5	QFN-32	Fanout Buffer with Fail-Safe Input
SY89850U	1:1	ANY	LVPECL	2.5/3.3V	4	QFN-8	LVPECL Line Driver/Receiver
SY89851U	1:2	ANY	LVPECL	2.5/3.3V	3	QFN-16	Low Power Fanout Buffer/Trans
SY89854U	1:4	ANY	LVPECL	2.5/3.3V	3.5	DFN-16	Low Power Fanout Buffer/Trans
SY89856U	2:6	ANY	LVPECL	2.5/3.3V	3	QFN-32	Low Power Fanout Buffer with 2:1 MUX Input
SY89858U	1:8	ANY	LVPECL	2.5/3.3V	3	QFN-32	Low Power Fanout Buffer
SY897132L	1:2	LVPECL	LVPECL	3.3V	0.8	TSSOP-28	Link Replicator
SY89809AL	1:9	LVPECL/HSTL	HSTL	1.8/3.3V	0.75	TQFP-32	Fanout Buffer
SY898530U	1:16	LVPECL	LVPECL	3.3V	0.5	TQFP-48	Fanout Buffer
SY898533L	1:4	LVPECL	LVPECL	3.3V	0.65	TSSOP-20	Fanout Buffer
SY10/100E111	1:9	PECL	PECL	0:00	0.75	PLCC-28	With Enable
SY10/100E111A/L	1:9	PECL	PECL	3.3/5	0.75	PLCC-28	
SY10/100E111AE/LE	1:9	PECL	PECL	3.3/5	0.75	PLCC-28	With Enable
SY10/100EL11V	1:2	PECL	PECL	3.3/5	0.75	SOIC-8	
SY10/100EL15	1:4	PECL	PECL	0:00	0.75	SOIC-16	With Enable
SY100EL14V	1:5	PECL	PECL	3.3/5	0.75	SOIC-20	With Enable
SY100EL15L	1:4	PECL	PECL	3.3	0.75	SOIC-16	With Enable
SY100EP14U	1:15	LVPECL	LVPECL	2.5/3.3V	2	SOIC-20	Fanout Buffer
SY100EP14AU	1:15	LVPECL	LVPECL	2.5/3.3V	2	SOIC-20	Fanout Buffer with Enhanced MUX
SY100HA643	1:8	ECL	TTL	5/-5	0.75	PLCC-28	With Enable
SY100S811	1:9	PECL/TTL	PECL	5	0.75	PLCC/SOIC-28	With Enable
SY100S815	1:4	PECL/TTL	PECL	5	0.75	SOIC-16	With Enable



# High-Speed Clock and Data Distribution Selection Guide

## Clock Dividers

<b>Bold = New P/N</b>	<b>Fanout Buffer</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Description</b>
SY89200U	Y	ANY	LVDS	2.5V	1.5	QFN-32	3 Banks (+1, +2, +4) 8 Total
SY89202U	Y	ANY	LVPECL	2.5/3.3V	1.5	QFN-32	3 Banks (+1, +2, +4) 8 Total
SY89218U	Y	ANY	LVDS	2.5V	1.5	TQFP-64	4 Banks (+1, +2, +4) 15 Total FSI Input
SY89221U	Y	ANY	LVPECL	2.5/3.3V	1.5	TQFP-64	4 Banks (+1, +2, +4) 15 Total FSI Input
SY89228U	N	ANY	LVPECL	2.5/3.3V	1	QFN-16	+3, +5 FSI Input
SY89229U	N	ANY	LVDS	2.5V	1	QFN-16	+3, +5 FSI Input
SY89230U	N	ANY	LVPECL	2.5/3.3V	3.2	QFN-16	+3, +5
SY89231U	N	ANY	LVDS	2.5V	3.2	QFN-16	+3, +5
SY89312V	N	ECL/PECL	ECL/PECL	3.3/5V	4	MLF <sup>®</sup> -8	+2
SY89313V	N	ECL/PECL	ECL/PECL	3.3/5V	4	MLF <sup>®</sup> -8	+4
SY89871U	Y	ANY	LVPECL	2.5/3.3V	2.5	MLF <sup>®</sup> -16	2 Banks (+1, +2, +4, +8, +16)
SY89872U	Y	ANY	LVDS	2.5V	2	MLF <sup>®</sup> -16	2 Banks (+1, +2, +4, +8, +16)
SY89873L	Y	ANY	LVDS	3.3V	2	MLF <sup>®</sup> -16	2 Banks (+1, +2, +4, +8, +16)
SY89874U	Y	ANY	LVPECL	2.5/3.3V	2.5	MLF <sup>®</sup> -16	+1, +2, +4, +8, +16
SY89875U	Y	ANY	LVDS	2.5V	2	MLF <sup>®</sup> -16	+1, +2, +4, +8, +16
SY89876L	Y	ANY	LVDS	3.3V	2	MLF <sup>®</sup> -16	+1, +2, +4, +8, +16
SY100S834L	N	ECL/PECL/LVPECL	ECL/PECL	3.3/5V	—	SOIC-16	(+1, 2, 4) or (+2, 4, 8)
SY100S838L	N	ECL/PECL/LVPECL	ECL/PECL	3.3/5V	—	SOIC-20	(+1, 2/3) or (+2, 4/6)
SY100S839V	N	ECL/PECL/LVPECL	ECL/PECL	3.3/5V	—	SOIC-20	(+2/4) or (+4/5/6)
SY10/100EL32V	N	ECL	ECL	3.3/5	3	SOIC-8	+2
SY10/100EL33/L	N	ECL	ECL	3.3/5	4	SOIC-8	+4
SY10/100EL34/L	Y	ECL	ECL	3.3/5	—	SOIC-16	3 Outputs +2, 4, or 8
SY10/100EL38/L	Y	ECL	ECL	3.3/5	—	SOIC-20	2 Banks (+2) (+4/6)

# High-Speed Clock and Data Distribution Selection Guide

## Translators

<b>Bold = New P/N</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b># of Channels</b>
SY10/100ELT20V	TTL	PECL	3.3/5	0.75	SOIC-8	Single
SY10/100ELT21	PECL	TTL	5	0.32	SOIC-8	Single
SY10/100ELT22	TTL	PECL	5	0.75	SOIC-8	Dual
SY10/100ELT23	PECL	TTL	5	0.32	SOIC-8	Dual
SY100ELT24	TTL	ECL	5	0.5	SOIC-8	Single
SY100ELT25	ECL	TTL	5	0.5	SOIC-8	Single
SY100E417	LVPECL/PECL	LVPECL/PECL	5	0.5	PLCC-28	Five
SY100EL90V	ECL/LVECL	PECL/LVPECL	3.3	0.5	SOIC-20	Triple
SY100EL91	PECL	ECL	3.3/5.0	0.5	SOIC-20	Triple
SY100EL91L	PECL	ECL	5	0.4	SOIC-20	Triple
SY100EL92	PECL/LVPECL	PECL/LVPECL	5/-5	0.3	SOIC-20	Triple
SY100ELT982	PECL	CML	5	1.25	MSOP-10	Single
SY100HA643	ECL	TTL	5	0.32	PLCC-28	Single
SY100S324	TTL	ECL	5	0.8	PLCC-28	Six
SY100S325	ECL	TTL	5	0.32	PLCC-28	Six
SY100S391	TTL	PECL	5	0.8	PLCC-28	Six
SY100S811	PECL/TTL	PECL	5	0.8	PLCC-28	Single
SY100S815	PECL/TTL	PECL	5	0.8	SOIC-16	Single
SY55851/A	PECL/LVPECL/CML	CML	2.5/3.3V	3	MSOP-10	Single
SY55855V	ANY	LVDS	3.3/5V	0.75	MSOP-10	Dual
SY55857L	ANY	LVPECL	3.3V	2.5	MSOP-10	Dual
SY89222L	TTL	PECL	3.3V	0.4	MLF <sup>®</sup> -8 (2 x 2mm)	Dual
SY89223L	LVPECL	LVTTTL	3.3V	0.16	MLF <sup>®</sup> -8 (2 x 2mm)	Dual
SY89321L	LVPECL	LVTTTL	3.3V	0.275	MLF <sup>®</sup> -8 (2 x 2mm)	Single
SY89322V	LVTTTL	LVPECL	3.3/5V	0.8	MLF <sup>®</sup> -8 (2 x 2mm)	Dual
SY89323L	LVPECL	LVTTTL	3.3V	0.275	MLF <sup>®</sup> -8 (2 x 2mm)	Dual
SY89325V	ANY	LVDS	3.3V	0.75	MLF <sup>®</sup> -8 (2 x 2mm)	Single
SY89327L	ANY	LVPECL	3.3V	2.5	MLF <sup>®</sup> -8 (2 x 2mm)	Single
SY89328L	LVPECL/LVTTTL	LVTTTL/LVPECL	3.3V	0.275	MLF <sup>®</sup> -8 (2 x 2mm)	Single
SY89329V	LVTTTL	LVPECL	3.3/5V	0.8	MLF <sup>®</sup> -8 (2 x 2mm)	Single
SY89464U	ANY	LVPECL	2.5/3.3V	2	MLF <sup>®</sup> -44	Single
SY89465U	ANY	LVDS	2.5V	2	MLF <sup>®</sup> -44	Single
SY89645L	LVCOS/LVTTTL	LVDS	3.3V	0.65	TSSOP-16	Single
SY89825U	LVDS/LVPECL	LVPECL	2.5/3.3V	1	TQFP-64	Single
SY89826L	LVDS/LVPECL	LVDS	3.3V	1	TQFP-64	Single
SY89827L	HSTL/LVPECL	HSTL	3.3V	0.5	TQFP-64	Dual
SY89828L	LVDS/LVPECL	LVDS	3.3V	1	TQFP-64	Dual
SY89829U	LVDS/LVPECL	LVPECL	2.5/3.3V	1	TQFP-64	Dual
SY89831U	LVPECL/HSTL/CML	LVPECL	2.5/3.3V	2.5	MLF <sup>®</sup> -16 (3 x 3mm)	Single
SY89832U	LVPECL/HSTL/LVDS/ CML	LVDS	2.5V	2.5	MLF <sup>®</sup> -16 (3 x 3mm)	Single
SY89833L	LVPECL/HSTL/LVDS/ CML	LVDS	3.3V	2	MLF <sup>®</sup> -16 (3 x 3mm)	Single
SY89834U	LVTTTL/CMOS	LVPECL	2.5/3.3V	1	MLF <sup>®</sup> -16 (3 x 3mm)	Single

# High-Speed Clock and Data Distribution Selection Guide

## Multiplexers

<b>Bold = New P/N</b>	<b>Fanout</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Data Rate (Gbps)</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Description</b>
SY54017R	2:1	ANY	CML	1.2/1.8V	3.2	2.5	MLF <sup>®</sup> -16	Low Voltage CML with Fail-Safe Input.
SY54017AR	2:1	ANY	CML	1.2/1.8V	3.2	2.5	MLF <sup>®</sup> -16	Low Voltage CML MUX.
SY56017R	2:1	ANY	CML	1.2/1.8/2.5V	6.4	3.2	MLF <sup>®</sup> -32	Low Voltage EQ MUX.
SY56028XR	4:1	ANY	CML	1.2/1.8/2.5V	6.4	4.5	MLF <sup>®</sup> -32	Low Voltage EQ MUX.
SY56572XR	4:1	ANY	CML	1.2/1.8/2.5V	6.4	4.5	MLF <sup>®</sup> -16	Low Voltage EQ MUX.
SY58017U	2:1	ANY	CML	2.5/3.3V	10.7	7	MLF <sup>®</sup> -16	Internal Termination.
SY58018U	2:1	ANY	LVPECL	2.5/3.3V	5	4	MLF <sup>®</sup> -16	Internal Termination and 800mV Output Swing.
SY58019U	2:1	ANY	RS-LVPECL	2.5/3.3V	10.7	7	MLF <sup>®</sup> -16	Internal Termination and 400mV Output Swing.
SY58025U	Dual 2:1	ANY	CML	2.5/3.3V	10.7	7	MLF <sup>®</sup> -32	Internal Termination.
SY58026U	Dual 2:1	ANY	LVPECL	2.5/3.3V	5	6	MLF <sup>®</sup> -32	Internal Termination and 800mV Output Swing.
SY58027U	Dual 2:1	ANY	RS-LVPECL	2.5/3.3V	10.7	6	MLF <sup>®</sup> -32	Internal Termination and 400mV Output Swing.
SY58028U	4:2	ANY	CML	2.5/3.3V	10.7	7	MLF <sup>®</sup> -32	Internal Termination.
SY58029U	4:2	ANY	LVPECL	2.5/3.3V	5	4	MLF <sup>®</sup> -32	Internal Termination and 800mV Output Swing.
SY58030U	4:2	ANY	RS-LVPECL	2.5/3.3V	10.7	7	MLF <sup>®</sup> -32	Internal Termination and 400mV Output Swing.
SY58037U	8:2	ANY	CML	2.5/3.3V	5	4	MLF <sup>®</sup> -44	Internal Termination.
SY58038U	8:2	ANY	LVPECL	2.5/3.3V	4.5	5	MLF <sup>®</sup> -44	Internal Termination and 800mV Output Swing.
SY58039U	8:2	ANY	RS-LVPECL	2.5/3.3V	5	5.5	MLF <sup>®</sup> -44	Internal Termination and 400mV Output Swing.
SY58609U	2:1	ANY	CML	2.5/3.3V	4.25	2.5	MLF <sup>®</sup> -16	Fail-Safe Input and Internal Termination.
SY58610U	2:1	ANY	LVPECL	2.5/3.3V	3.2	2.5	MLF <sup>®</sup> -16	Fail-Safe Input and Internal Termination.
SY58611U	2:1	ANY	LVDS	2.5V	3.2	2.5	MLF <sup>®</sup> -16	Fail-Safe Input and Internal Termination.
SY89208V	2:1	ECL/PECL	ECL/PECL	3.3/5V	—	3	MLF <sup>®</sup> -8	Internal Termination and 800mV Output Swing.
SY89464U	2:10	ANY	LVPECL	2.5/3.3V	—	2	MLF <sup>®</sup> -44	Internal Termination and 800mV Output Swing.
SY89465U	2:10	ANY	LVDS	2.5V	—	2	MLF <sup>®</sup> -44	Fast Edge Rates and Internal Termination.
SY89473U	2:2	ANY	LVPECL	2.5/3.3V	2.5	2.5	MLF <sup>®</sup> -24	Internal Termination and 800mV Output Swing.
SY89474U	2:2	ANY	LVDS	2.5V	2.5	2.5	MLF <sup>®</sup> -24	Fast Edge Rates and Internal Termination.
SY89542U	Dual 2:1	ANY	LVDS	2.5V	3.2	4	MLF <sup>®</sup> -32	Fast Edge Rates and Internal Termination.
SY89543L	Dual 2:1	ANY	LVDS	3.3V	3.2	3	MLF <sup>®</sup> -32	Fast Edge Rates and Internal Termination.
SY89544U	4:1	ANY	LVDS	2.5V	3.2	4	MLF <sup>®</sup> -32	Fast Edge Rates and Internal Termination.
SY89545L	4:1	ANY	LVDS	3.3V	3.2	3	MLF <sup>®</sup> -32	Fast Edge Rates and Internal Termination.
SY89546U	4:2	ANY	LVDS	2.5V	3.2	4	MLF <sup>®</sup> -32	Fast Edge Rates and Internal Termination.
SY89547L	4:2	ANY	LVDS	3.3V	3.2	4	MLF <sup>®</sup> -32	Fast Edge Rates and Internal Termination.
SY89840U	2:1	ANY	LVPECL	2.5/3.3V	—	2	MLF <sup>®</sup> -16	Internal Termination and 800mV Output Swing.
SY89841U	2:1	ANY	LVDS	2.5V	—	1.5	MLF <sup>®</sup> -16	Fast Edge Rates and Internal Termination.
SY89842U	2:1	ANY	CML	2.5/3.3V	—	2	MLF <sup>®</sup> -16	Internal Termination.
SY89843U	2:2	ANY	LVPECL	2.5/3.3V	—	2	MLF <sup>®</sup> -24	Internal Termination and 800mV Output Swing.
SY89844U	2:2	ANY	LVDS	2.5V	—	2	MLF <sup>®</sup> -24	Fast Edge Rates and Internal Termination.
SY89845U	2:2	ANY	CML	2.5/3.3V	—	2	MLF <sup>®</sup> -24	Internal Termination.
SY89852U	2:2	ANY	LVPECL	2.5/3.3V	2.5	2.5	MLF <sup>®</sup> -16	Internal Termination and 800mV Output Swing.
SY89853U	Dual 2:1	ANY	LVPECL	2.5/3.3V	2.5	2.5	MLF <sup>®</sup> -32	Internal Termination and 800mV Output Swing.
SY89855U	4:2	ANY	LVPECL	2.5/3.3V	2.5	2.5	MLF <sup>®</sup> -32	Internal Termination and 800mV Output Swing.
SY89859U	8:2	ANY	LVPECL	2.5/3.3V	2.5	2.5	MLF <sup>®</sup> -44	Internal Termination and 800mV Output Swing.
SY897132L	2:1	LVPECL	LVPECL	3.3V	1.5	0.8	TSSOP-28	Link Replicator.
SY10/100EL57	4:1	ECL	ECL	4.2-5.5	—	—	SOIC-16	—
SY10/100EL58	2:1	ECL	ECL	4.2-5.5	—	—	SOIC-8	—
SY100EL56V	Dual 2:1	ECL	ECL	3.3/5	—	—	SOIC-20	With Individual Selects.
SY100EL57L	4:1	ECL	ECL	3.3	—	—	SOIC-16	—
SY100S355	4:1	ECL	ECL	4.2-5.5	—	—	PLCC-28	Quad Mux/Latch.

# High-Speed Clock and Data Distribution Selection Guide

## Multiplexers

<b>Bold = New</b> P/N	Fanout	Input	Output	Voltage	Max Data Rate (Gbps)	Max Freq. (GHz)	Package	Description
SY100S363	Dual 8:1	ECL	ECL	4.2-5.5			PLCC-28	
SY100S364	16:1	ECL	ECL	4.2-5.5			PLCC-28	
SY100S370	1 of 4/8	ECL	ECL	4.2-5.5			PLCC-28	Universal Demux/Decoder.
SY100S371	Triple 4:1	ECL	ECL	4.2-5.5			PLCC-28	With Enable.
SY100S863	8:1	PECL	PECL TTL	5			PLCC-28	

## Crosspoint Switches

<b>Bold = New</b> P/N	Input	Output	Voltage	Max Data Rate (Gbps)	Package	Description
SY54023R	ANY	CML	1.2/1.8V	3.2	MLF <sup>®</sup> -16	2x2 with Fail-Safe Inputs.
SY56023R	ANY	CML	1.2/1.8/2.5V	6.4	MLF <sup>®</sup> -16	2x2 with Equalization.
SY56034AR	ANY	CML	1.2/1.8/2.5V	6.4	MLF <sup>®</sup> -32	2x2 Crosspoint Switch with Six Outputs.
SY56040AR	ANY	CML	1.2/1.8/2.5V	6.4	MLF <sup>®</sup> -44	4x4 Crosspoint Switch.
SY58023U	ANY	CML	2.5/3.3V	10.7	MLF <sup>®</sup> -16	2x2.
SY58024U	ANY	CML	2.5/3.3V	10.7	MLF <sup>®</sup> -32	Dual 2x2.
SY58040U	ANY	CML	2.5/3.3V	5	MLF <sup>®</sup> -44	4x4.
SY89540U	ANY	LVDS	2.5V	3.2	MLF <sup>®</sup> -44	4x4.
SY55854U	ANY	CML	2.5/3.3/5V	2.5	QSOP-16	2x2.
SY55858U	CML/PECL/LVPECL	CML	2.5/3.3V	3	TQFP-32	Dual 2x2.
SY55859L	CML	CML	3.3V	2.7	MLF <sup>®</sup> -32	Dual 2x2.

## Backplane and Cable Management

<b>Bold = New</b> P/N	Input	Output	Voltage	Max Data Rate (Gbps)	Package	Description
SY56016R	ANY	CML	1.2/1.8/2.5V	6.4	MLF <sup>®</sup> -10 (2 x 2mm)	Differential Line Driver with EQ
SY56216R	ANY	CML	1.2/1.8/2.5V	6.4	QFN-16 (3 x 3mm)	Dual Channel EQ Receiver.
SY58620L	ANY	CML	3.3V	4.25	QFN-24	Backplane Transceiver with Integrated Loopback.
SY58621L	ANY	LVPECL/CML	3.3V	3.2	QFN-24	Backplane Transceiver with Integrated Loopback.
SY58626L	ANY	CML	3.3V	6.4	QFN-32	Pre-Emphasis Driver with Integrated Loopback.
SY58627L	ANY	CML	3.3V	6.4	QFN-32	Equalization Receiver with Integrated Loopback.

# High-Speed Clock and Data Distribution Selection Guide

## Receivers/Buffers/Drivers

<b>Bold = New P/N</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Data Rate (Gbps)</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Description</b>
SY54016R	ANY	CML	1.2/1.8V	3.2	2.5	MLF <sup>®</sup> -8 (2 x 2mm)	Low Voltage CML Translator with Fail-Safe Input.
SY54016AR	ANY	CML	1.2/1.8V	3.2	3.2	MLF <sup>®</sup> -8 (2 x 2mm)	Low Voltage CML Translator.
SY56016R	ANY	CML	1.2/1.8/2.5V	6.4	5	MLF <sup>®</sup> -10 (2 x 2mm)	Differential Line Driver with EQ.
SY56216R	ANY	CML	1.2/1.8/2.5V	6.4	5	MLF <sup>®</sup> -16 (3 x 3mm)	Dual Channel EQ Receiver.
SY58016L	CML/PECL	CML	3.3V	10.7	7	MLF <sup>®</sup> -16 (3 x 3mm)	Differential CML Line Driver/Receiver.
SY58600U	ANY	CML	2.5/3.3V	10.7	7	MLF <sup>®</sup> -8 (2 x 2mm)	Line Driver/Receiver.
SY58601U	ANY	LVPECL	2.5/3.3V	5	5	MLF <sup>®</sup> -8 (2 x 2mm)	Line Driver/Receiver.
SY58602U	ANY	RS-LVPECL	2.5/3.3V	10.7	7	MLF <sup>®</sup> -8 (2 x 2mm)	Line Driver with 400mV Output Swing.
SY58603U	ANY	CML	2.5/3.3V	4.25	2.5	MLF <sup>®</sup> -8 (2 x 2mm)	Line/Driver Receiver with Fail-Safe Input.
SY58604U	ANY	LVPECL	2.5/3.3V	3.2	2.5	MLF <sup>®</sup> -8 (2 x 2mm)	Line/Driver Receiver with Fail-Safe Input.
SY58605U	ANY	LVDS	2.5V	3.2	2	MLF <sup>®</sup> -8 (2 x 2mm)	Line/Driver Receiver with Fail-Safe Input.
SY58620L	ANY	CML	3.3V	4.25	2.5	MLF <sup>®</sup> -24 (4 x 4mm)	Backplane Transceiver.
SY89206V	ECL/PECL	ECL/PECL	3.3/5V	—	1	MLF <sup>®</sup> -8 (2 x 2mm)	Receiver/Buffer-100k Comp.
SY89207L	LVECL/LVPECL	PECL	3.3V	—	0.8	MSOP-10	Amp. w/Low-Gain Feedback.
SY89216V	ECL/PECL	ECL/PECL	3.3/5V	—	1	MLF <sup>®</sup> -8 (2 x 2mm)	Receiver/Buffer-10k Comp.
SY89250V	ECL/PECL	ECL/PECL	3.3/5V	—	—	MLF <sup>®</sup> -8 (2 x 2mm)	Enhanced Differential Receiver.
SY89306V	ECL/PECL	ECL/PECL	3.3/5V	—	2.5	MLF <sup>®</sup> -8 (2 x 2mm)	Receiver/Buffer-100k Comp.
SY89307V	ECL/PECL	ECL/PECL	3.3/5V	2.5	—	MLF <sup>®</sup> -8 (2 x 2mm)	Variable Output Swing Differential Receiver.
SY89316V	ECL/PECL	ECL/PECL	3.3/5V	—	2.5	MLF <sup>®</sup> -8 (2 x 2mm)	Differential Receiver/Buffer-10k Comp.
SY89835U	LVDS	LVDS	2.5V	3.2	2	MLF <sup>®</sup> -8 (2 x 2mm)	Buffer with Fail-Safe Input.
SY89850U	CML/PECL/LVDS	LVPECL	2.5/3.3V	3.2	4	MLF <sup>®</sup> -8 (2 x 2mm)	Low Power.
SY10/100E112	ECL/PECL	ECL/PECL	5V	—	—	PLCC-28	Quad Driver.
SY10/100E116	ECL/PECL	ECL/PECL	5V	—	—	PLCC-28	Quint Differential Line Driver.
SY10/100E416	ECL/PECL	ECL/PECL	5V	—	—	PLCC-28	Quint Differential Line Driver.
SY10/100EL12	ECL/PECL	ECL/PECL	5V	—	—	SOIC-8	Low Impedance Driver.
SY10/100EL16V	ECL/LVPECL	ECL/LVPECL	3.3/5V	—	—	SOIC/MSOP-8	Differential Receiver.
SY10/100EL16VA-VF	ECL/LVPECL	ECL/LVPECL	3.3/5V	—	—	SOIC/MSOP-8	Enhanced Differential Receiver.
SY10/100EL16VS	ECL/LVPECL	ECL/LVPECL	3.3/5V	—	—	SOIC/MSOP-8	Variable Output Swing Receiver.
SY100EL17V	ECL/LVPECL	ECL/LVPECL	3.3/5V	—	—	SOIC-20	Quad Differential Receiver.
SY10EL1189	ECL/PECL	ECL/PECL	5V	—	—	SOIC-16	FC Coaxial Cable Driver.
SY10EL89	ECL/LVPECL	ECL/LVPECL	3.3/5V	—	—	SOIC-8	Coaxial Cable Driver.
SY10/100EP16U	ECL/PECL	ECL/PECL	2.5/3.3V	2.5	4	MLF <sup>®</sup> -8 (2 x 2mm)	ECL Differential Receiver/Driver.
SY100EP16V	ECL/PECL	ECL/PECL	3.3/5V	2.5	4	MLF <sup>®</sup> -8 (2 x 2mm)	ECL Differential Receiver/Driver.

## Skew Management (Delay Lines)

<b>Bold = New P/N</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Channels</b>
SY89295U	LVPECL/LVTTL	LVPECL	2.5/3.3V	1.5	TQFP/MLF <sup>®</sup> -32	Programmable Delay.
SY89296U	LVPECL/LVTTL	LVPECL	2.5/3.3V	1.5	TQFP/MLF <sup>®</sup> -32	Programmable Delay with Fine Tune Control.
SY89297U	ANY	CML	2.5V	1.6/3.2(Gbps)	QFN-24	5ps /Step Programmable Delay, Dual Channel.
SY55856U	CML	CML	2.5/3.3V	2.5	TQFP-32	Two Channel Delay Line.

# High-Speed Clock and Data Distribution Selection Guide

## Registers and Flip-Flops

<b>Bold = New</b>					
<b>P/N</b>	<b>Channel</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Description</b>
SY10/100E131	Quad	5	1.1	PLCC-28	4-Bit D Flip Flop.
SY10/100E141	Single	5	0.7	PLCC-28	8-Bit Shift Register.
SY10/100E142	Single	5	0.7	PLCC-28	9-Bit Shift Register.
SY10/100E151	Single	5	1.1	PLCC-28	6-Bit D Register.
SY10/100E451	Single	5	1.1	PLCC-28	6-Bit D Register.
SY10/100E452	Single	5	1.1	PLCC-28	5-Bit D Register
SY10/100EL31	Single	5	2.8	PLCC-28	D Flip Flop w/ Set and Reset.
SY10/100EL35	Single	5	2.2	SOIC-8	JK Flip Flop.
SY10/100EL51	Single	5	2.8	SOIC-8	Differential Clock D Flip Flop.
SY10/100EL52	Single	5	2	SOIC-8	Differential Data and Clock D Flip Flop
SY100S331	Single	5	0.8	PLCC-28	Triple D Flip Flop.
SY100S351	Single	5	0.7	PLCC-28	Hex D Flip Flop.
SY100S341	Single	5	0.6	PLCC-28	8-Bit Shift Register.
SY10/100S891	Single	5		PLCC-28	5-Bit Registered Transceiver.

## Gates

<b>Bold = New</b>						
<b>P/N</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Package</b>	<b>Description</b>
SY58051U	ANY	CML	2.5/3.3V	7	MLF <sup>®</sup> -16	CML AnyGate <sup>®</sup> .
SY58052U	ANY	CML	2.5/3.3V	10.7	MLF <sup>®</sup> -16	Data/Clock Synchronizer.
SY55851A	CML/PECL/LVPECL	CML	2.5/3.3V	3	MSOP-10	CML AnyGate <sup>®</sup> .
SY55852U	CML/PECL/LVPECL	CML	2.5/3.3/5V	2.5	MSOP-10	D Flip Flop.
SY55853U	CML/PECL/LVPECL	CML	2.5/3.3/5V	2.5	MSOP-10	D Latch.
SY10/100E101	ECL	ECL	5	—	PLCC-28	Quad 4-Input OR/NOR.
SY10/100E104	ECL	ECL	5	—	PLCC-28	Quint 2-Input AND/NAND.
SY10/100E122	ECL	ECL	5	—	PLCC-28	9 Bit Buffer.
SY10/100EL01	ECL	ECL	5	2	SOIC-8	4-Input OR/NOR.
SY10/100EL04	ECL	ECL	5	—	SOIC-8	2-Input AND/NAND.
SY10/100EL05	ECL	ECL	5	—	SOIC-8	2-Input Diff. AND/NAND.
SY10/100EL07	ECL	ECL	5	—	SOIC-8	2-Input XOR/XNOR.
SY100S301	ECL	ECL	5	—	PLCC-28	Triple 5-Input OR/NOR.
SY100S302	ECL	ECL	5	—	PLCC-28	Quint 2-Input OR/NOR.
SY100S304	ECL	ECL	5	—	PLCC-28	Quint AND/NAND.
SY100S307	ECL	ECL	5	—	PLCC-28	Quint XOR/XNOR.
SY100S317	ECL	ECL	5	—	PLCC-28	Triple 2-Wide OA/OAI.
SY100S318	ECL	ECL	5	—	PLCC-28	5-Wide 5,4,4,4,2 OA/OAI.
SY100S321	ECL	ECL	5	—	PLCC-28	Low-Power 9-Bit Inverter.
SY100S322	ECL	ECL	5	—	PLCC-28	9 Bit Buffer.

## Latches

<b>Bold = New</b>				
<b>P/N</b>		<b>Voltage</b>	<b>Package</b>	<b>Description</b>
SY100S350		5V	PLCC-28	Hex D Latch
SY100S355		5V	PLCC-28	Quad Multiplexer/Latch

# High-Speed Clock and Data Distribution Selection Guide

## Compact (2mm x 2mm) Products

<b>Bold = New P/N</b>	<b>Equivalent</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Max Freq. (GHz)</b>	<b>Description</b>
SY54016R	—	ANY	CML	1.2/1.8V	2.5	Low Voltage CML Translator w/ FSI.
SY54016AR	—	ANY	CML	1.2/1.8V	3.2	Low Voltage CML Translator.
SY58600U	—	ANY	CML	2.5V/3.3V	7	7GHz/10.7Gbps Differential Translator.
SY58601U	—	ANY	LVPECL	2.5V/3.3V	5	5GHz/5Gbps Differential Translator.
SY58602U	—	ANY	LVPECL	2.5V/3.3V	7	7GHz/10.7Gbps Differential Translator.
SY58603U	—	ANY	CML	2.5V/3.3V	2.5	Fail-Safe Input Buffers.
SY58604U	—	ANY	LVPECL	2.5V/3.3V	2.5	Fail-Safe Input Buffers.
SY58605U	—	ANY	LVDS	2.5V	2	Fail-Safe Input Buffers.
SY89206V	100EL16V	PECL	PECL	3.3/5V	1	Differential Receiver/Buffer.
SY89208V	100EP58V	PECL	PECL	3.3/5V	3	2:1 Multiplexer.
SY89216V	10EL16V	PECL	PECL	3.3/5V	1	Differential Receiver/Buffer.
SY89222L	100ELT22L	TTL	PECL	3.3V	0.4	Dual Differential Translator.
SY89223L	100ELT23L	LVPECL	LVTTTL	3.3V	0.16	Dual Differential Translator.
SY89250V	100EL16VC	PECL	PECL	3.3/5V	1	Enhanced Differential Receiver.
SY89306V	100EP16V	PECL	PECL	3.3/5V	2.5	Differential Receiver/Buffer.
SY89307V	100EP16VS	PECL	PECL	3.3/5V	2.5	Variable-out Differential Receiver.
SY89311U	100EP11U	PECL	PECL	2.5/3.3/5V	3	Differential 1:2 Fanout Buffer..
SY89312V	100EP32V	PECL	PECL	3.3/5V	4	+2 Clock Generator.
SY89313V	100EP33V	PECL	PECL	3.3/5V	4	+4 Clock Generator.
SY89316V	10EP16V	PECL	PECL	3.3/5V	2.5	Differential Receiver/Buffer.
SY89321L	100EPT21L	LVPECL	LVTTTL	3.3V	0.275	Differential Translator.
SY89322V	100EPT22V	LVTTTL	LVPECL	3.3/5V	0.8	Dual Differential Translator.
SY89323L	100EPT23L	LVPECL	LVTTTL	3.3V	0.275	Dual Differential Translator.
SY89325V	55855V	ANYX	LVDS	3.3/5V	0.75	Differential Translator.
SY89327L	55857L	ANYX	LVPECL	3.3V	2.5	Differential Translator.
SY89328L	100EPT28L	LVTTTL/LVPECL	LVTTTL/LVPECL	3.3V	0.275	Dual Differential Translator.
SY89329V	100EPT20V	LVTTTL	LVPECL	3.3/5V	0.8	Differential Translator.

# High-Speed Clock and Data Distribution Selection Guide

## Super 300K (Fairchild Semiconductor Second Source)

<b>P/N</b>	<b>Input</b>	<b>Output</b>	<b>Voltage</b>	<b>Package</b>	<b>Description</b>
SY10/100S891	ECL	ECL	5	PLCC-28	5-Bit Registered Transceiver.
SY100S301	ECL	ECL	5	PLCC-28	Triple 5-Input OR/NOR.
SY100S302	ECL	ECL	5	PLCC-28	Quint 2-Input OR/NOR.
SY100S304	ECL	ECL	5	PLCC-28	Quint AND/NAND.
SY100S307	ECL	ECL	5	PLCC-28	Quint XOR/XNOR.
SY100S313	ECL	ECL	5	PLCC-28	Quad Driver.
SY100S314	ECL	ECL	5	PLCC-28	Quint Differential Line Receiver.
SY100S317	ECL	ECL	5	PLCC-28	Triple 2-Wide OA/OAI.
SY100S318	ECL	ECL	5	PLCC-28	5-Wide 5,4,4,4,2 OA/OAI.
SY100S321	ECL	ECL	5	PLCC-28	Low-Power 9-Bit Inverter.
SY100S322	ECL	ECL	5	PLCC-28	9 Bit Buffer.
SY100S324	TTL	ECL	5	PLCC-28	Low Power Hex TTL to ECL Translator.
SY100S325	ECL	TTL	5	PLCC-28	Low Power Hex ECL to TTL Translator.
SY100S331	ECL	ECL	5	PLCC-28	Triple D Flip Flop.
SY100S341	ECL	ECL	5	PLCC-28	8-Bit Shift Register.
SY100S350	ECL	ECL	5	PLCC-28	Hex D Latch.
SY100S351	ECL	ECL	5	PLCC-28	Hex D Flip Flop.
SY100S355	ECL	ECL	5	PLCC-28	Quad Multiplexer/Latch.
SY100S360	ECL	ECL	5	PLCC-28	Dual Parity Checker/Generator.
SY100S363	ECL	ECL	5	PLCC-28	Dual 8-Input Multiplexer.
SY100S364	ECL	ECL	5	PLCC-28	16-Input Multiplexer.
SY100S366	ECL	ECL	5	PLCC-28	9-Bit Comparator.
SY100S370	ECL	ECL	5	PLCC-28	Universal Demux/Decoder.
SY100S371	ECL	ECL	5	PLCC-28	Triple 4-Input Multiplexer w/ Enable.
SY100S391	TTL	ECL	5	PLCC-28	Low Power Hex TTL to PECL Translator.
SY100S811	PECL/TTL	PECL	5	PLCC-28	1:9 PECL/TTL-to-PECL Fanout Buffer.
SY100S815	PECL/TTL	PECL	5	SOIC-16	Quad PECL/TTL-to-PECL Fanout Buffer.
SY100S834/L	LVPECL/PECL	LVPECL/PECL	3.3/5	SOIC-16	(+1, +2, +4) or (+2, +4, +8) Clock Generator.
SY100S838/L	LVPECL/PECL	LVPECL/PECL	3.3/5	SOIC-20	(+1, +2/3) or (+2, +4/6) Clock Generator.
SY100S863	ECL	ECL	5	PLCC-28	8-Input PECL Differential Multiplexer.



# High-Speed Clock Generation Selection Guide

## Clock Generators

<b>Bold = New P/N</b>	<b>Supply Voltage</b>	<b>Input Type</b>	<b>Output Type</b>	<b>Min. Freq. (MHz)</b>	<b>Max. Freq. (MHz)</b>	<b>Description</b>	<b>EVB Available</b>	<b>Package</b>
SY87729L	3.3V	XTAL	PECL	10	365	AnyClock™ Fractional-N Synthesizer	X	32-TQFP
SY87739L	3.3V	XTAL	PECL	10	730	AnyClock™ Fractional-N Synthesizer	X	32-TQFP
SY89426	5V	TTL	PECL	33	622	SONET OC-12/OC -3		28-PLCC
SY89529L	3.3V	16.66MHz	LVPECL	—	200	Spread-Spectrum Clock Synth		32-TQFP, 28-SOIC
SY89531L	3.3V	XTAL	HSTL/LVPECL	33	500	XTAL Input Snth.	X	64-TQFP
SY89532L	3.3V	XTAL	LVPECL	33	500	XTAL Input Snth.	X	64-TQFP
SY89533L	3.3V	XTAL	LVDS/LVPECL	33	500	XTAL Input Snth.	X	64-TQFP
SY89534L	3.3V	ANYX	LVPECL	33	500	Ref. Input Snth.	X	64-TQFP
SY89535L	3.3V	ANYX	LVDS/LVPECL	33	500	Ref. Input Snth.	X	64-TQFP
SY89536L	3.3V	ANYX	HSTL/LVPECL	33	500	Ref. Input Snth.	X	64-TQFP
SY89537L	3.3V	ANYX	LVDS/LVPECL	73	750	Ref. and XTAL Prog. Freq.	X	7x7
SY89538L	3.3V	ANYX	LVDS/LVPECL	73	750	Ref. Input, Multiple Banks, Zero Delay	X	64-TQFP
SY89610L	3.3V	ANYX	CML	19	694	Ultra Low Jitter Clock Synthesizer	X	5x5
<b>SY898535</b>	3.3V	XTAL/CLK	LVPECL	19	235	Crystal/Clock Oscillator with 1:4 Fanout	X	TSSOP-20

## Ultra-Low Jitter Clock Synthesizers

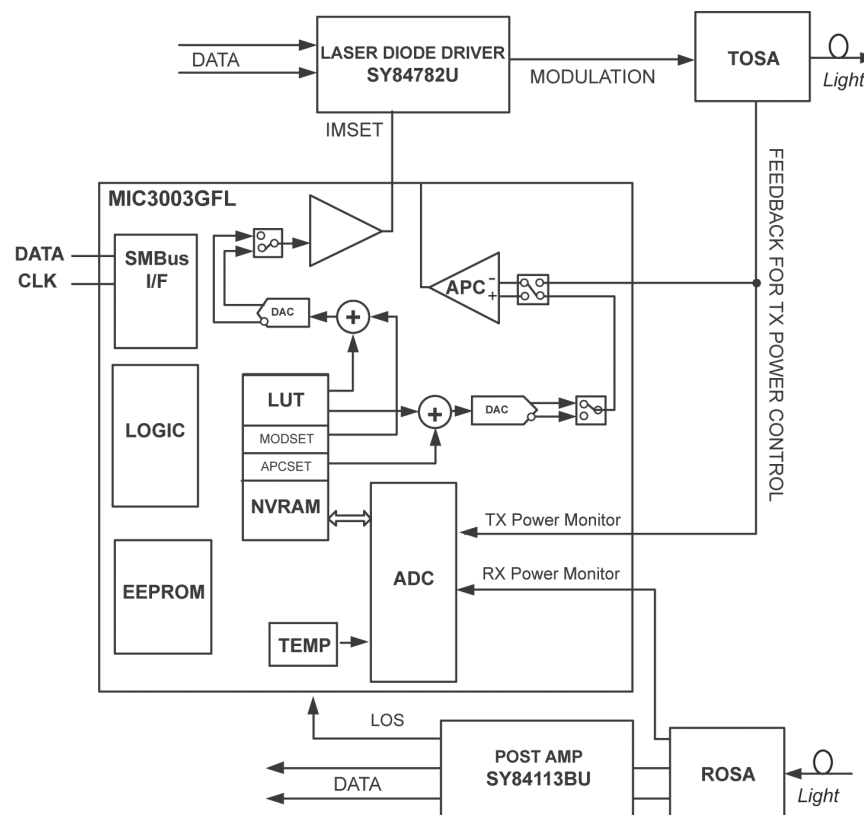
<b>Bold = New P/N</b>	<b>Supply Voltage</b>	<b>Crystal Input (MHz)</b>	<b>REF_IN</b>	<b>Output Type</b>	<b>Output (MHz)</b>	<b>Typ. Jitter 1.875-20MHz</b>	<b>FSEL</b>	<b>By-pass</b>	<b>NSEL</b>	<b>IDT 2nd Source</b>	<b>Apps</b>	<b>Package</b>
<b>SM802101</b>	2.5/3.3V	25	X	8-HCSL	100/200	105fs/100fs	X	X			PCIe	7x7
<b>SM802109</b>	2.5/3.3V	25	X	4-HCSL	100	105fs		X			PCIe	4x4
<b>SM802105</b>	2.5/3.3V	25	X	2-LVPECL	156.25/312.5	110fs/110fs	X	X			10GbE	4x4
<b>SM802108</b>	2.5/3.3V	25	X	4-LVPECL	156.25/125	110fs/110fs		X			GbE, 10GbE	4x4
<b>SM802110</b>	2.5/3.3V		30.72MHz	1-LVPECL	153.60	99fs **		X			CPRI	4x4
<b>SM802104</b>	2.5/3.3V	26.5625	X	2-LVPECL	156.25/125	200fs/200fs	X	X			Fibre Channel	4x4
<b>SM802111</b>	2.5/3.3V		15MHz	2-LVPECL	125.00	85fs		X			Fibre Channel	4x4
<b>SM802116</b>	2.5/3.3V	26.5625	X	2-LVDS	106.25/212.5	190fs/180fs ***	X	X			Fibre Channel	4x4
SM840021	2.5/3.3V	25		1-LVCMOS	125.0	250fs				X	GbE	8-TQFP
<b>SM840002</b>	2.5/3.3V	25	X	2-LVCMOS	62.5/125/156.25	80fs	X	X		X	GbE, 10GbE	16-TSSOP
SM840004-11	2.5/3.3V	25		4-LVCMOS	62.5/125	356/55fs	X			X	GbE	20-TSSOP
SM843256	2.5/3.3V	24, 25, 18.75, 19.44, 19.53125		6-LVPECL	75-625 *	80fs @ 156.25	X	X	X	X	GbE, 10GbE, PCIe, SONET, SAS/ SATA	24-eTSSOP
SM844256	2.5/3.3V	24, 25, 18.75, 19.44, 19.53125		6-LVDS	75-625 *	80fs @ 125	X	X	X	X	GbE, 10GbE, PCIe, SONET, SAS/ SATA	24-eTSSOP
SM840051	2.5/3.3V	19.44, 19.53125, 20.121601		1-LVCMOS	(77.76/155.52) (80.566406/161.132812) (78.125/156.25) *	58fs @ 156.25	X			X	SONET, 10GbE	8-TQFP
<b>SM843251-156</b>	2.5/3.3V	25		1-LVPECL	156.25	110fs					10GbE	8-TSSOP
<b>SM843031-01</b>	2.5/3.3V	25		1-LVPECL	312.5	119fs					10GbE	8-TSSOP
SM840001	2.5/3.3V	26.5625		1-LVCMOS	106.25/212.5	510fs/320fs ***	X			X	Fibre Channel	8-TQFP
<b>SM843001-106</b>	2.5/3.3V	26.5625		1-LVPECL	106.25	170fs ***					Fibre Channel	8-TSSOP
<b>SM843001-212</b>	2.5/3.3V	26.5625		1-LVPECL	212.5	170fs ***					Fibre Channel	8-TSSOP

\* Depends on crystal used and PLL divider settings

\*\* 2MHz - 20MHz

\*\*\* 637KHz - 10MHz

# Communications Product Highlights — Lowest Power SFP



SFP/SFF Optical Module

The **MIC3003GFL** is a fiber optic module controller which enables the implementation of sophisticated, hot-pluggable fiber optic transceivers with intelligent laser control and an internally calibrated Digital Diagnostic Monitoring Interface per SFF-8472. It essentially integrates all non-data path functions of an SFP/SFP+ transceiver into a tiny (3mm x 3mm) QFN package. It also works well as a microcontroller peripheral in transponders or 10Gbps transceivers. The MIC3003GFL uses the same die as the MIC3003 with all its functions, but in a smaller package and different pin out.

Communication with the MIC3003 is via an industry standard 2-wire SMBus serial interface. Nonvolatile memory is provided for serial ID, configuration, and separate OEM and user scratchpad spaces.

The **SY84782U** is a single 2.5V supply, ultra-low power, small form factor laser diode driver for telecom/datacom applications. Intended to drive FP/DFB lasers at data rates up to 1.25Gbps, it is especially useful for Compact SFP, SFP and SFF modules where power requirements are quite stringent. The driver can deliver modulation current up to 90mA and offers a high compliance voltage, all of which make the SY84782U suitable for high current operations in both AC- and DC-coupled applications.

The SY84782U is intended to be used with Micrel's MIC3003 Optical Transceiver Management IC, which allows for both modulation and bias current control and monitoring. Furthermore, the MIC3003 offers power control and temperature compensation.

The **SY84113BU** low power limiting post amplifier is designed for use in fiber-optic optical modules for multirate applications up to 1.25Gbps. The device connects to a typical transimpedance amplifier (TIA) and can produce output signals to CML-level waveforms. Intended for use in GbE and Fibre Channel applications, the SY84113BU offers a wide LOS range. It is able to detect input signals for as low as 5mV<sub>PP</sub> and as high as 100mV<sub>PP</sub>. The SY84113BU is intended to be used in AC-coupled input applications.

The SY84113BU generates a Loss-of-Signal (LOS) open-collector TTL output. A programmable Loss-of-Signal level set pin (LOSLVL) sets the sensitivity of the input amplitude detection. LOS asserts high if the input amplitude falls below the threshold set by LOSLVL and de-asserts low otherwise. The enable input (/EN) de-asserts the true output signal without removing the input signal. The LOS output can be fed back to the /EN input to implement the squelch function that maintains output stability under a loss-of-signal condition.

# Communications and Fiber Optic ICs Selection Guide

## CDRs with Integrated Clock Synthesis

<b>Bold = New P/N</b>	<b>Description</b>	<b>Function</b>	<b>Data Rate (Mbps)</b>	<b>Data Output Type</b>	<b>VCC</b>	<b>Package</b>	<b>Eval. Board</b>
SY69753AL <sup>(1)</sup>	Clock and Data Recovery	CDR	125-155	PECL	3.3V	EPAD-TQFP-32	Yes
SY69754AL	Clock and Data Recovery	CDR	622	PECL	3.3V	EPAD-TQFP-32	Yes
SY87700AL <sup>(1)</sup>	AnyRate® Clock and Data Recovery	CDR	32-208	PECL	3.3V	EPAD-TQFP-32, SOIC-28 <sup>(2)</sup>	Yes
SY87701AL <sup>(1)</sup>	AnyRate® Clock and Data Recovery	CDR	28-1300	PECL	3.3V	EPAD-TQFP-32, SOIC-28 <sup>(2)</sup>	Yes
SY87813L	AnyRate® Clock and Data Recovery with Differential Clock	CDR	28-1300	PECL	3.3V	EPAD-TQFP-32	Yes
SY87700V	AnyRate® Clock and Data Recovery	CDR	32-175	PECL	3.3/5V	EPAD-TQFP-32, SOIC-28 <sup>(2)</sup>	Yes
SY87700L	AnyRate® Clock and Data Recovery	CDR	32-175	PECL	3.3V	EPAD-TQFP-32, SOIC-28 <sup>(2)</sup>	Yes
SY87701V	AnyRate® Clock and Data Recovery	CDR	32-1250	PECL	3.3/5V	EPAD-TQFP-32, SOIC-28 <sup>(2)</sup>	Yes
SY87701L	AnyRate® Clock and Data Recovery	CDR	32-1250	PECL	3.3V	EPAD-TQFP-32, SOIC-28 <sup>(2)</sup>	Yes
SY87721L	AnyRate® Clock and Data Recovery	CDR	28-2700	CML/PECL	3.3V	EPAD-TQFP-64	Yes
SY69753L	Clock and Data Recovery	CDR	125-155	PECL	3.3V	EPAD-TQFP-64	Yes
SY69952	Clock Recovering Transceiver	Transceiver	51.84-155	PECL	5V	SOIC-28 <sup>(2)</sup>	n/a

(1) Run on 30% less ICC than the SY69753L, SY87700V/L or SY87701V/L and are recommended for new designs.

(2) 28-Pin SOIC is available, but not recommended for new designs.

## Multiplexer/Demultiplexer

<b>Bold = New P/N</b>	<b>Function</b>	<b>Data Rate (Gbps)</b>	<b>Data Output Type</b>	<b>VCC</b>	<b>Temperature</b>	<b>Conversion</b>	<b>Package</b>
SY87724L	MUX and DeMUX	2.7Gbps	PECL	3.3V	Industrial	1:, 1:5, 1:8, 1:10, 4:1, 5:1, 8:1, 10:1	TQFP-80
SY87725L	SERDES	2.5Gbps	CML	3.3V	Industrial	1:4, 4:1	EPAD-TQFP-64
SY10/100E445	DeMUX	2.5Gbps	PECL	5V	Commercial	1:04	LPCC-28
SY10/100E446	MUX	1.6Gbps	PECL	5V	Commercial	4:01	LPCC-28

# Communications and Fiber Optic ICs Selection Guide

## Optical Module Controllers

**Bold = New**

P/N	VIN (V)	Description	Package
MIC3001BML	3.3	SFP Management IC with Internal Calibration, SFP MSA and SFF-8472 compliant	24-pin 4x4 QFN
<b>MIC3003GFL</b>	3.0-3.6	FOM Management IC with Internal Calibration, SFP MSA and SFF-8472 compliant	24-pin 3x3 QFN
<b>MIC3003GML</b>	3.0-3.6	FOM Management IC with Internal Calibration, SFP MSA and SFF-8472 compliant	24-pin 4x4 QFN

## Fiber Optic Single-Chip Transceivers

**Bold = New**

P/N	Description	Features	VCC	Package	Eval. Board
SY88236L/AL <sup>(1)</sup>	GEPON and GPON ONU/ONT Module Transceiver	<ul style="list-style-type: none"> <li>• 2.5ns Tx Enable/Disable Time</li> <li>• Bias and Mod monitoring, RSSI</li> <li>• 70mA IBIAS/85mA IMOD</li> </ul>	3.3V	QFN-32 (5x5mm)	Yes
SY88232L/AL	SONET/GbE SFF/SFP Module Transceiver	<ul style="list-style-type: none"> <li>• Bias and Mod monitoring, RSSI</li> <li>• 70mA IBIAS/85mA IMOD</li> </ul>	3.3V	QFN-32 (5x5mm)	

(1) The L version has internal input termination while the AL version does not.

## Fiber Optic Laser Diode Drivers

**Bold = New**

P/N	Description	Data Rate (Gbps)	Drive Current (mA)	VCC	Package	Eval. Board
SY84402L	Tiny VCSEL Laser Diode Driver	4.25	25	3.3V	QFN-10 (2x2mm)	Yes
<b>SY84782L</b>	Ultra Low Power 1.25Gbps Laser Diode Driver	1.25	90	2.5V	QFN-16 (3x3mm)	Yes
SY88022L	11.3Gbps FP/DFB Laser Diode Driver with Integrated Bias	11.3	60	3.3V	QFN-16 (3x3mm)	Yes
SY88024L	11.3Gbps VCSEL Laser Diode Driver with Integrated Bias	11.3	20	3.3V	QFN-16 (3x3mm)	Yes
SY88212L	Laser Driver with APC and Power Monitoring	2.5	85	3.3V	QFN-24 (4x4mm)	Yes
SY88216L	Burst Mode Laser Driver with APC and Power Monitoring	2.5	85	3.3V	QFN-24 (4x4mm)	Yes
SY88422L	Laser Driver with Integrated Bias	4.25	90	3.3V	QFN-16 (3x3mm)	Yes
SY88722V	Laser Driver with Output Enable	0.622	30	3.3/5V	MSOP-10	Yes
SY88782L	High-Current, Low Power FP/DFB Laser Driver	1.25	90	3.3V	QFN-16 (3x3mm)	n/a
SY88822V	Laser Driver with Output Enable	0.155	25	3.3/5V	MSOP-10	Yes
SY88902V	VCSEL Laser Driver with Output Enable	1.25	25	5V	MSOP-10	n/a
SY88912L	SONET/SDH Laser Driver	3.2	60	3.3V	QFN-16 (3x3mm)	n/a
SY88922	SONET/SDH VCSEL Laser Driver	2.5	25	5V	MSOP-10 (3x3mm)	n/a
SY88922V	SONET/SDH VCSEL Laser Driver	2.5	25	3.3/5V	MSOP-10 (3x3mm)	n/a
SY88932L	VCSEL/FP/DFB Laser Driver with Output Enable	4.25	60	3.3V	QFN-16 (3x3mm)	Yes
SY88982L	High-Current, Low Power FP/DFB Laser Driver	2.7	90	3.3V	QFN-16 (3x3mm)	Yes
SY88992L	VCSEL Driver with PE and Output Enable	4.25	25	3.3	QFN-16 (3x3mm)	Yes
SY89307V	Output Swing Differential Receiver—VCSEL Driver	2.125	25	3.3V/5V	QFN-8 (2x2mm)	Yes
SY100EL1003	Laser Driver with Output Enable	1.25	75	5V	SOIC-16	n/a
SY100EL16VS	Variable Output Swing Differential Receiver	1.25	25	3.3V/5V	MSOP-8 (3x3mm), SOIC-8	n/a
SY100EP16VS	Variable Output Swing Differential Receiver	2.5	25	3.3V/5V	MSOP-8 (3x3mm), SOIC-8	n/a

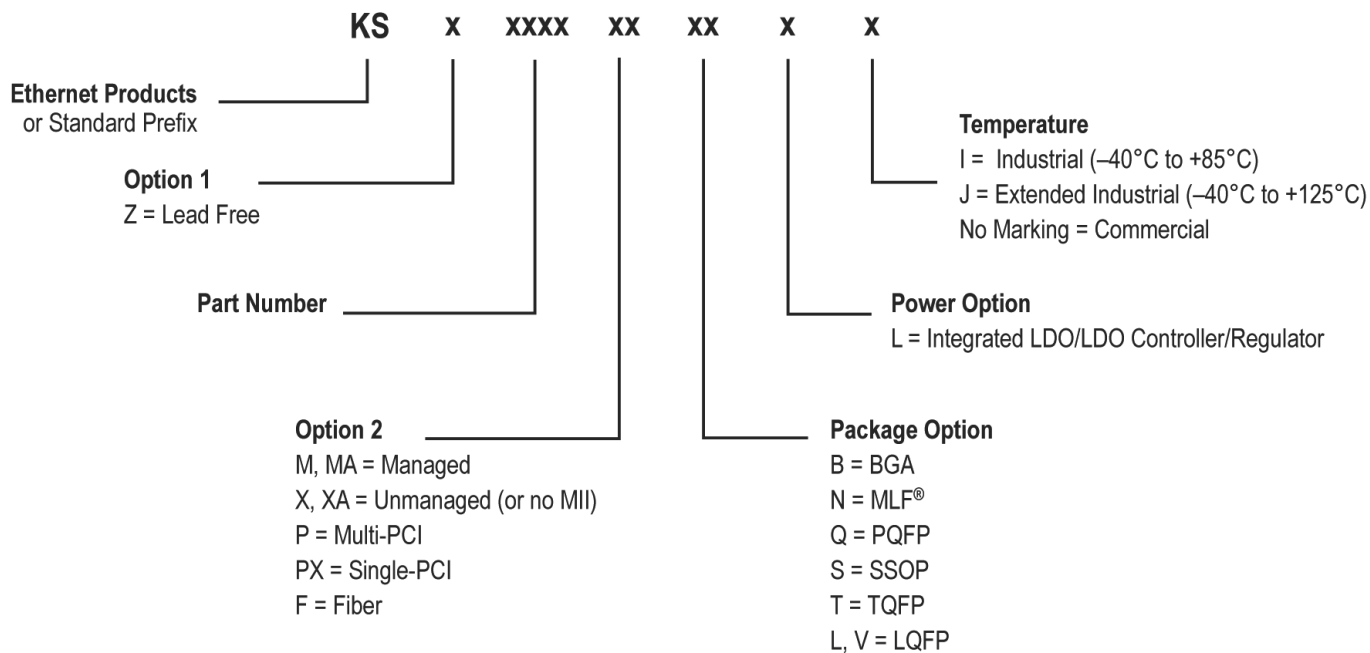
# Communications and Fiber Optic ICs Selection Guide

## Fiber Optic Post Amplifiers

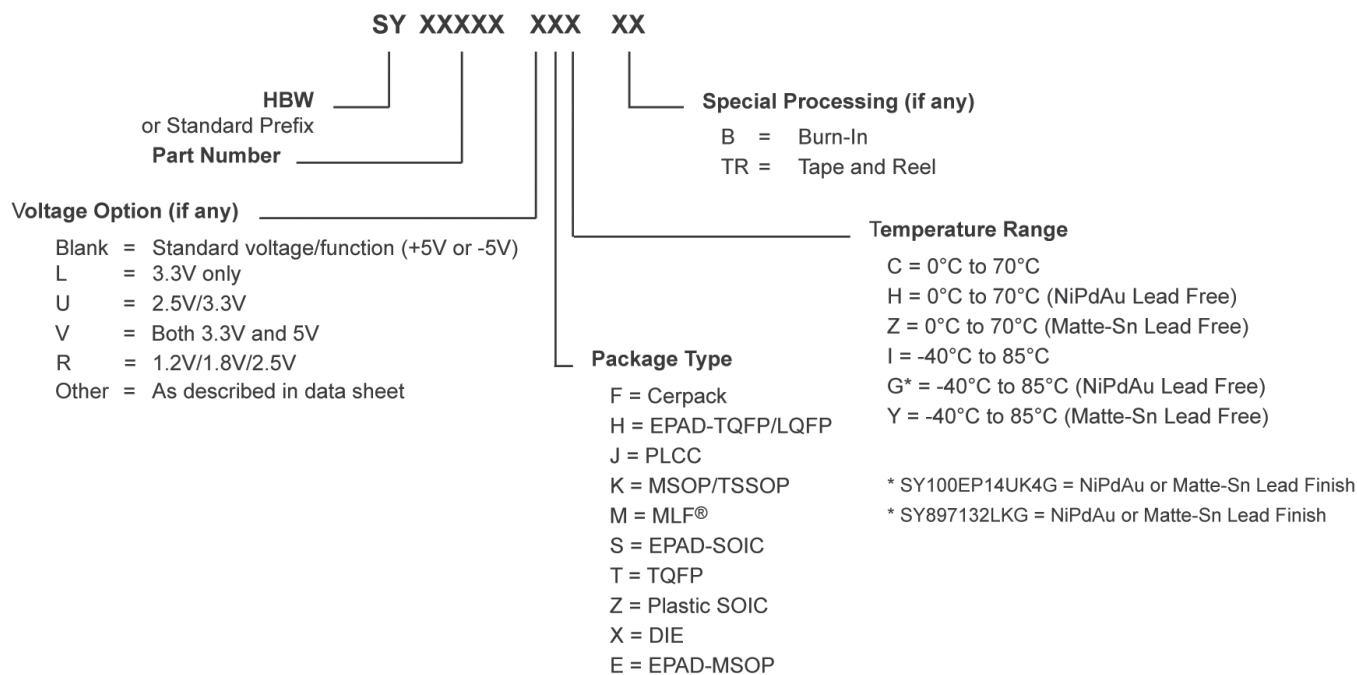
Bold = New P/N	Data Rate (Gbps)	VCC	LOS/SD	Input	Output	LOS/SD Gain	RC Time Constant	Hysteresis Typ. (dB)	Package
SY84403BL	4.25	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	QFN-10 (2x2mm)
<b>SY84113BU</b>	1.25	2.5V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	QFN-16
SY88993AL	1.25	3.3V	LOS (TTL)	PECL	PECL	1X	1X	5.6	MSOP-10
SY88147DL	1.25	3.3V	LOS (TTL)	PECL	PECL	4X	20X	3.5	MSOP-10
SY88149CL	1.25	3.3V	SD (TTL)	PECL	PECL	4X	1X	3.5	MSOP-10
SY88053AL	1.25	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	QFN-16
<b>SY88063AL</b>	12.5	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	QFN-16
<b>SY88149HL</b> <sup>(1)</sup>	1.25	3.3V	SD & LOS (TTL)	PECL	PECL	4X	5ns	3	QFN-16
<b>SY88149HAL</b> <sup>(1)</sup>	1.25	3.3V	SD & LOS (TTL)	PECL	PECL	4X	5ns	3	QFN-16
SY88289AL	3.2	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	QFN-16
SY88289CL	3.2	3.3V	LOS (TTL)	PECL	CML	4X	20X	3.5	QFN-16
SY88289HL	3.2	3.3V	LOS (TTL)	PECL	CML	4X	20X	3.5	QFN-16
SY88303BL	3.2	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	0.5X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88305BL	3.2	3.3V	SD (TTL)	PECL with internal 50Ω to VREF	CML	0.5X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88307BL	3.2	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	PECL	0.5X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88309BL	3.2	3.3V	SD (TTL)	PECL with internal 50Ω to VREF	PECL	0.5X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88313BL	3.2	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88315BL	3.2	3.3V	SD (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88343BL	3.2	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	4X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88343DL	3.2	3.3V	LOS (TTL)	PECL	CML	4X	20X	3.5	QFN-16
SY88343HL	3.2	3.3V	LOS (TTL)	PECL	CML	4X	20X	3.5	QFN-16
SY88345BL	3.2	3.3V	SD (TTL)	PECL with internal 50Ω to VREF	CML	4X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88347DL	3.2	3.3V	LOS (TTL)	PECL	PECL	4X	20X	3.5	MSOP-10
SY88353BL	3.2	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	QFN-16
SY88403BL	4.25	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	20X	3.5	EPAD-MSOP-10, QFN-16
SY88713V	0.622	3.3V/5V	SD (PECL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88773V	3.2	3.3V/5V	LOS (TTL)	PECL	CML	1X	1X	4.6	EPAD-MSOP-10, QFN-16
SY88803V	0.155	3.3V/5V	LOS (TTL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88813V	0.155	3.3V/5V	SD (PECL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88843V	3.2	3.3V/5V	SD (TTL)	PECL with internal 50Ω to VREF	CML	1X	1X	4.6	EPAD-MSOP-10, QFN-16
SY88903AL	1.25	3.3V	LOS (TTL)	PECL	PECL	4X	1X	3.5	MSOP-10
SY88903V	1.25	3.3V/5V	LOS (TTL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88913V	1.25	3.3V/5V	LOS (PECL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88923AV	3.2	3.3V/5V	LOS (TTL)	PECL	PECL	1X	1X	4.6	EPAD-MSOP-10, MSOP-10
SY88923V	2.5	3.3V/5V	LOS (TTL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88933AL	1.25	3.3V	SD (TTL)	PECL	PECL	4X	20X	3.5	MSOP-10
SY88933V	1.25	3.3V/5V	SD (TTL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88943V	2.5	3.3V/5V	SD (TTL)	PECL	PECL	1X	1X	4.6	MSOP-10
SY88953L	10.7	3.3V	SD & LOS (TTL)	CML	CML	1X	1X	4.6	MLF <sup>®</sup> -16
SY88973V	3.2	3.3V/5V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	1X	4.6	EPAD-MSOP-10, MLF <sup>®</sup> -16
SY88973BL	3.2	3.3V	LOS (TTL)	PECL with internal 50Ω to VREF	CML	1X	1X	4.6	MLF <sup>®</sup> -16
SY88983V	3.2	3.3V/5V	SD (TTL)	PECL with internal 50Ω to VREF	CML	1X	1X	4.6	EPAD-MSOP-10, MLF <sup>®</sup> -16
SY88993AV	3.2	3.3V/5V	LOS (TTL)	PECL	CML	1X	1X	4.6	MSOP-10
SY88993V	3.2	3.3V/5V	LOS (TTL)	PECL	CML	1X	1X	5.6	MSOP-10

(1) Fastest LOS/SD Assert & De-assert time in the Industry.

# Ethernet Part Identification

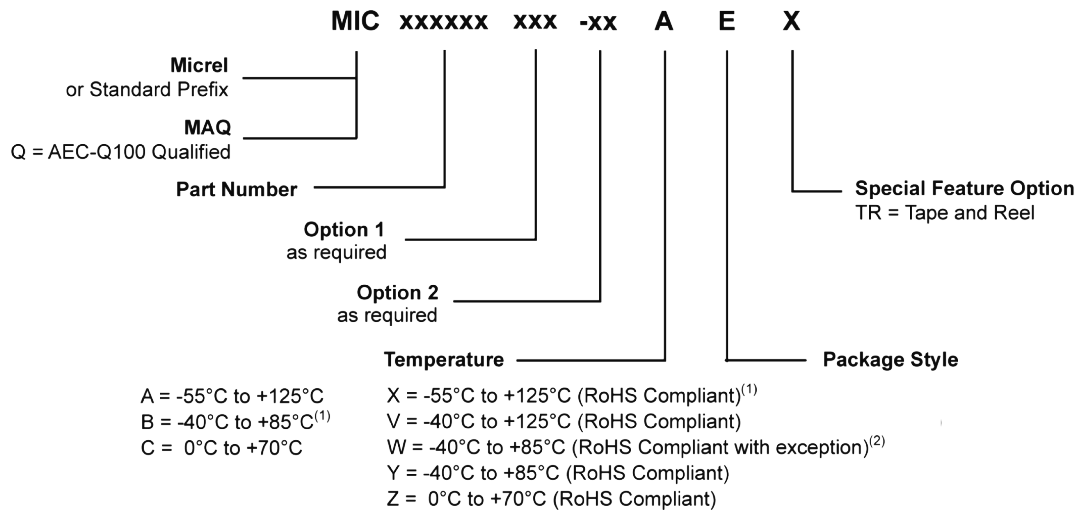


# High Bandwidth Part Identification



# Analog Part Identification

## Micrel Analog Standard

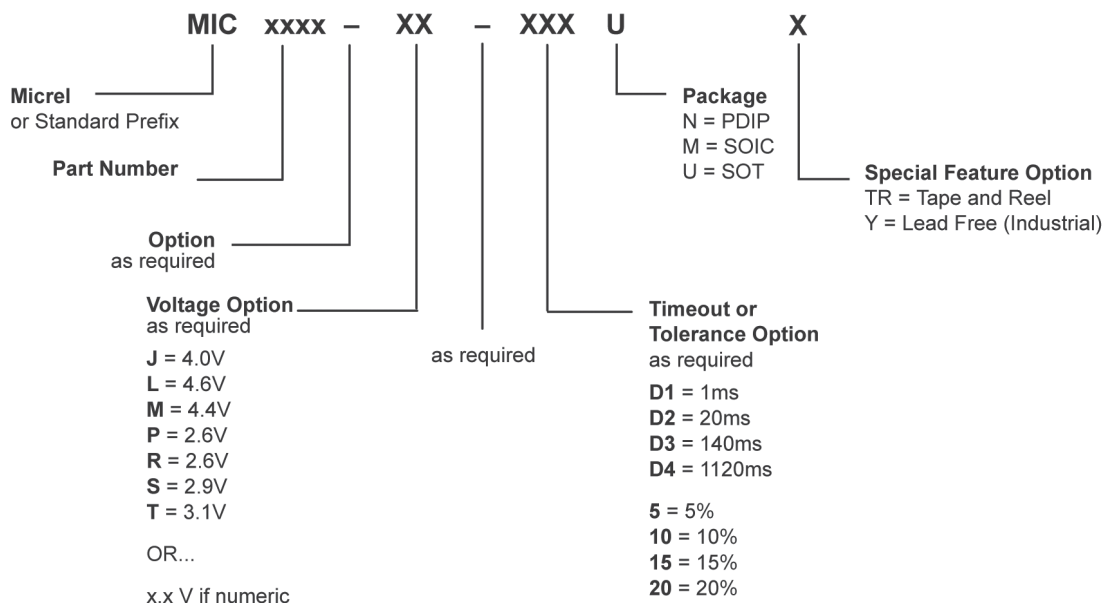


### Notes:

- Typically, industrial grade power products rate the junction temperature up to +125°C. Varies from device-to-device. Refer to the datasheet.
- Applicable to TO-220, TO-247, TO-263, SOT-223, SPAK packages using 85% lead plus lead alloy die attach material. Refer to the datasheet.

<b>C3</b> = SC70-3	<b>JL</b> = MLF <sup>®</sup>	<b>M5</b> = SOT-23-5	<b>TS</b> = TSSOP
<b>C5</b> = SC70-5	<b>LQ</b> = LQFP (Low Profile QFP)	<b>M6</b> = SOT-23-6	<b>TSE</b> = EPAD-TSSOP
<b>C6</b> = SC70-6	<b>M</b> = 150 mil SOIC	<b>M8</b> = SOT-23-8	<b>TQ</b> = TQFP
<b>D</b> = TO-252	<b>ME</b> = 150 mil EPAD-SOIC	<b>N</b> = Plastic DIP	<b>TQE</b> = EPAD-TQFP
<b>D5</b> = Thin SOT	<b>ML</b> = MLF <sup>®</sup>	<b>QS</b> = QSOP	<b>U</b> = TO-263
<b>D6</b> = Thin SOT	<b>MM</b> = MSOP	<b>QSE</b> = EPAD-QSOP	<b>V</b> = PLCC
<b>FL</b> = MLF <sup>®</sup>	<b>MME</b> = EPAD-MSOP	<b>R</b> = SPAK	<b>WM</b> = 300 mil Wide SOIC
<b>H</b> = Hybrid MLF <sup>®</sup> (Height=1.10mm)	<b>MT</b> = Thin MLF <sup>®</sup>	<b>S</b> = SOT-223	<b>WME</b> = 300 mil Wide EPAD-SOIC
<b>HJ</b> = MLF <sup>®</sup> (Height > /mm)	<b>M3</b> = SOT-23-3	<b>SM</b> = SSOP	<b>WT</b> = TO-247
<b>J</b> = Ceramic DIP	<b>M4</b> = SOT-143	<b>T</b> = TO-220	<b>FT</b> =MLF <sup>®</sup>
			<b>CS</b> =Chip Scale

## Industry Standard Voltage Supervisors









# Worldwide Sales Offices and Distributors

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