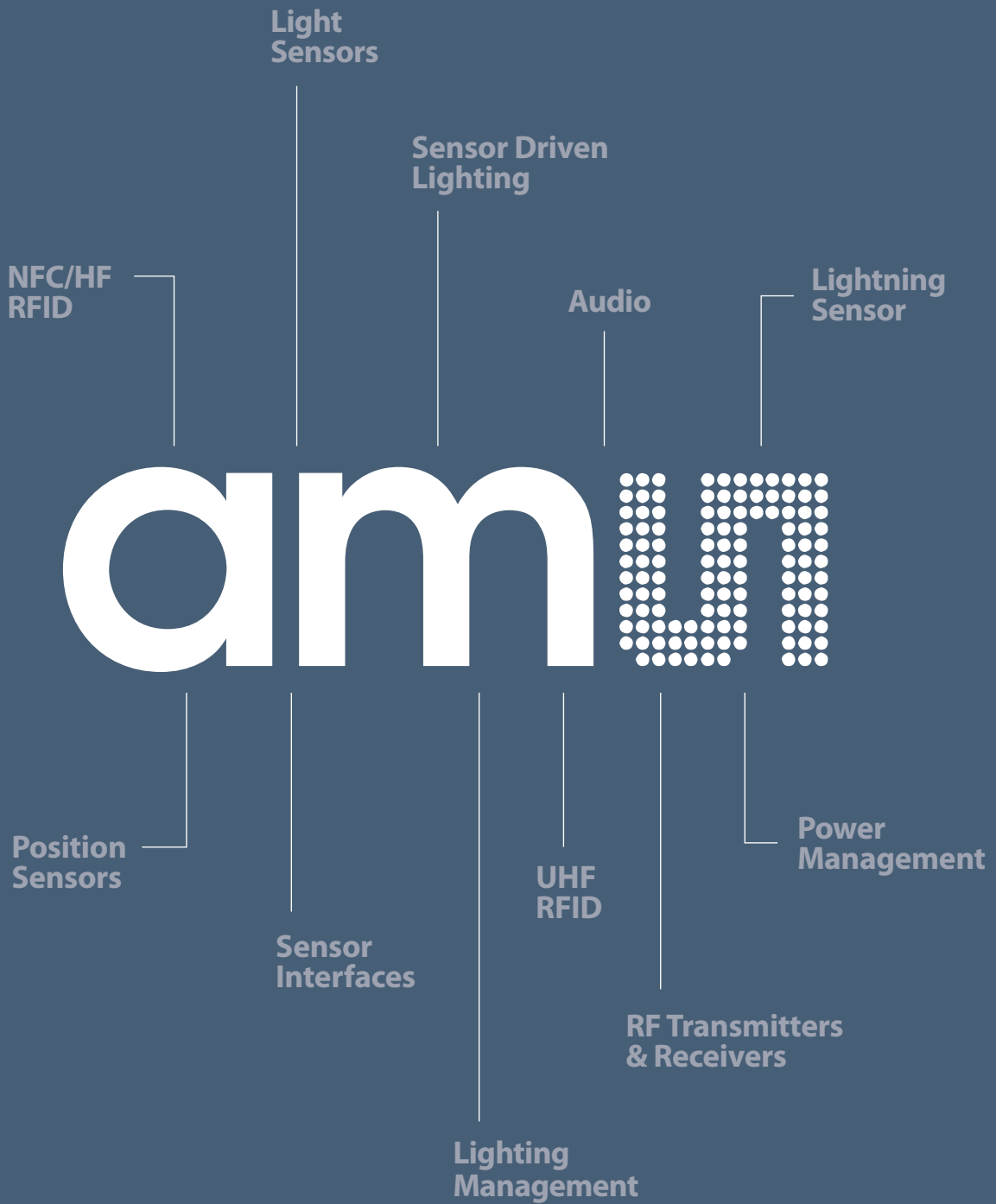


# High Performance Analog IC and Sensor Portfolio

Overview  
January 2014





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# Audio

## Active Noise Cancellation

Part No.	Function	Topology	Output Type	Max. Output Power	SNR, THD	ANC Performance	Supply Voltage	Package	
				BTL, 1.8V, 32 Ohm	SE, 34 mW, 32 Ohm		V	(mm)	
AS3400	Accessories	Receive Path feedforward/Feedback	Mono BTL	125mW	>100dB, <0.1%	>20dB	1.0 - 1.8	QFN-24 (4x4)	
AS3410	Accessories	Receive Path Feedforward	Stereo SE/ Mono BTL	125mW	>100dB, <0.1%	>25dB	1.0 - 1.8	QFN-24 (4x4)	
<b>NEW</b> ▶	AS3415	Accessories	Receive Path Feedforward	Stereo SE/ Mono BTL w. Bypass	125mW	>106dB, <0.1%	>20dB	1.0 - 1.8	QFN-32 (5x5)
AS3420	BT Accessories	Receive Path feedforward/Feedback	Mono BTL	125mW	>100dB, <0.1%	>20dB	1.0 - 1.8	QFN-20 (4x4)	
AS3421	BT Accessories	Receive Path Feedforward	Stereo SE	SE : 35mW	>100dB, <0.1%	>25dB	1.0 - 1.8	QFN-24 (4x4)	
AS3422	BT Accessories	Receive Path Feedback	Stereo SE	SE : 35mW	>100dB, <0.1%	>20dB	1.0 - 1.8	QFN-32 (5x5)	
AS3430	Accessories	Receive Path Feedback	Stereo SE/ Mono BTL	125mW	>100dB, <0.1%	>20dB	1.0 - 1.8	QFN-32 (5x5)	
<b>NEW</b> ▶	AS3435	Accessories	Receive Path Feedback	Stereo SE/ Mono BTL w. Bypass	125mW	>106dB, <0.1%	>25dB	1.0 - 1.8	QFN-36 (5x5)
AS3501	Embedded	Receive Path Feedforward	Stereo SE/ Mono BTL	125mW	>100dB, <0.1%	>25dB	1.0 - 1.8	QFN-24 (4x4)	
AS3502	Embedded	Receive Path Feedback	Stereo SE/ Mono BTL	125mW	>100dB, <0.1%	>20dB	1.0 - 1.8	QFN-32 (5x5)	

## Audio Front-Ends

Part No.	Power Management	Main Audio Features	Audio Codec SNR	Speaker Amplifier	Main Interfaces and Control	USB Charger with Temp. Supervision	Boot ROM for Start-up Sequences	RTC	Package
									(mm)
AS3510	DC-DC StepUp: 1x150mA @ 3.6V DC-DC StepDown: - LDO: 2x50mA, 1x200mA Charge: - Current Sink: -	Headphone Amp: 1x Line Out: - Line In: - Microphone In: 1x Audio Mix: yes	DAC: 91dB ADC: 83dB	•	Gen. Purpose ADC: - I <sup>2</sup> C & I <sup>2</sup> S: yes SPDIF: - RES & WDT: RES only DRM Enabled (UID): -	-	-	-	BGA-49 (7x7)
AS3515	DC-DC StepUp: 1x60mA @ 12V DC-DC StepDown: - LDO: 5x200mA, 1x2mA, 2x MIC Charge Pump: 1x for Core Current Sink: 1x40mA (prog.)	Headphone Amp: 1x Line Out: 1x Line In: 2x Microphone In: 2x Audio Mix: yes	DAC: 94dB ADC: 83dB	•	Gen. Purpose ADC: 10bit I <sup>2</sup> C & I <sup>2</sup> S: yes SPDIF: - RES & WDT: yes DRM Enabled (UID): 64bit	•	25	•	BGA-64 (7x7)
AS3517	DC-DC StepUp: 1x60mA @ 12V, 1x500mA (USB) DC-DC StepDown: 1x500mA, 2x250mA LDO: 4x200mA, 1x2mA, 2x MIC Charge Pump: 1x10mA (for USB OTG) Current Sink: 1x40mA (prog., log. Dimming)	Headphone Amp: 1x Line Out: 2x Line In: 2x Microphone In: 2x Audio Mix: yes	DAC: 96dB ADC: 90dB	-	Gen. Purpose ADC: 10bit I <sup>2</sup> C & I <sup>2</sup> S: yes SPDIF: yes RES & WDT: yes DRM Enabled (UID): 64bit	•	25	•	BGA-81 (9x9)
AS3543	DC-DC StepUp: 1x60mA @ 12V DC-DC StepDown: 2x250mA with DVM LDO: 3x100mA, 1x50mA, 1x MIC Charge Pump: - Current Sink: 2x36mA (prog., log. Dimming)	Headphone Amp: 1x Line Out: 1x* Line In: 2x Microphone In: 1x Audio Mix: yes	DAC: 102/96dB ADC: 85dB	-	Gen. Purpose ADC: 10bit I <sup>2</sup> C & I <sup>2</sup> S: yes SPDIF: - RES & WDT: yes DRM Enabled (UID): 64bit	+ Current Limitation + Battery Switch	5 (25 voltage combinations each)	•	BGA-64 (6x6)

\*) with ground noise cancellation

## Headphone Amplifiers

Part No.	Topology	Power	PSRR	Output Type	Shutdown	Supply Current	Supply Voltage	Package
		mW	dB			mA	V	(mm)
AS3560	Class G	30	>90	Single ended stereo	via I <sup>2</sup> C	0.9	2.3 - 5.5	WL-CSP-16
AS3561	Class H	30	>90	Single ended stereo	via I <sup>2</sup> C	0.9	2.3 - 5.5	WL-CSP-16

## Operational Amplifiers

Part No.	Description	Amplifiers	Slew Rate	Gain Bandwidth	PSRR	CMRR	Shutdown	Supply Current	Supply Voltage	Package
		#	V/ $\mu$ s	MHz	dB	dB		mA	V	(mm)
AS1710	Single Rail to rail Op Amp with shutdown	1	10	10	-85	-70	AS1710A: • AS1710B: -	1.6	2.7 - 5.5	SC70-6
AS1712	Quad Rail to rail Op Amp with shutdown	4	10	10	-85	-70	•	6.4	2.7 - 5.5	TQFN -16 (3x3)
AS1713	Rail to rail Op Amp with shutdown	1	10	10	-70	-60	•	1.6	2.7 - 5.5	MLPD-8 (2x2)

## Phones (Feature/Basic)

Part No.	Supply Voltage	Operating Range	Temperature Range	Last Number & Memory Dialing	Tone Ringer	Handsfree Function	Package
	V	mA	°C				
AS2522B	3.0 - 5.0	15 - 150	-25 to 70	0	•	•	TQFP-32, Die on Foil
AS2523/24	3.0 - 5.0	15 - 150	-25 to 70	0	-	•	SOIC-28, Die on Foil
AS2525	3.0 - 5.0	15 - 100	-25 to 70	29	•	•	TQFP-44, Die on Foil
AS2533	3.8 - 5.0	13 - 100	-25 to 70	15	•	-	SOIC-28, Die on Foil
AS2534	3.8 - 5.0	13 - 100	-25 to 70	1	•	-	SOIC-28, Die on Foil
AS2535	3.8 - 5.0	13 - 100	-25 to 70	12	•	-	SOIC-28, Die on Foil
AS2536	3.8 - 5.0	13 - 100	-25 to 70	15	•	-	SOIC-28, Die on Foil
AS2540	3.6 - 5.0	15 - 100	-15 to 60	0	•	-	SOIC-28, Die on Foil

# Our mission: Shaping the world with sensor solutions

ams sensor solutions take sensing to the next level by providing a seamless interface between humans and technology.

We develop high-performance solutions for the most challenging applications in sensors, sensor interfaces, power management and wireless. Simply said, we do the "tough stuff".

We enable our customers to create highly differentiated products that are smarter, safer, easier to use and more eco-friendly.



## Ambient Light Sensors

Part No.	Type	Operating Voltage	I <sup>2</sup> C Interface	I <sup>2</sup> C Alternate Address	Programmable			Package	
		V			Gain	Integration Time	Interrupts	CL	FN
<b>NEW ▶</b> TSL25911	Light-to-Digital	2.7 - 3.6	VDD	•	•	100-600 mS	•	-	•
TSL25721	Light-to-Digital	2.4 - 3.6	VDD	•	•	•	•	-	•
TSL25723	Light-to-Digital	2.7 - 3.6	1.8V	•	•	•	•	-	•
TSL45315	Light-to-Digital	2.3 - 3.3	VDD	•	Automatic	100, 200 and 400 mS	-	•	-
TSL45317	Light-to-Digital	2.3 - 3.3	1.8V	•	Automatic	100, 200 and 400 mS	-	•	-

## Ambient Light Sensors and Proximity Detection

Part No.	Type	Operating Voltage	I <sup>2</sup> C Interface	I <sup>2</sup> C Alternate Address	IR LED	Recommended Operating Distance		Package
		V				Short: < 15 cm	Medium: < 46 cm	
<b>NEW ▶</b> TMD27721	Light-to-Digital	2.2 - 3.6	VDD	•	•	•	-	Module
<b>NEW ▶</b> TMD27723	Light-to-Digital	2.2 - 3.6	1.8V	•	•	•	-	Module
TMD27711	Light-to-Digital	2.6 - 3.6	VDD	-	•	•	-	Module
TMD27713	Light-to-Digital	2.6 - 3.6	1.8V	-	•	•	-	Module
TSL27721	Light-to-Digital	2.4 - 3.6	VDD	•	-	•	•	FN
TSL27723	Light-to-Digital	2.4 - 3.6	1.8V	•	-	•	•	FN

## Color Sensors

Part No.	Type	Operating Voltage	I <sup>2</sup> C Interface	I <sup>2</sup> C Alternate Address	Color Sensor	IR Filter	Color Filter Array Configuration	Ambient Light Sensing	Sync Input	Package		
		V								FN	CS	SOIC
TCS34725	Light-to-Digital	2.7 - 3.6	VDD	•	RGBC	•	4 × 4	•	-	•	-	-
TCS34727	Light-to-Digital	2.7 - 3.3	1.8V	•	RGBC	•	4 × 4	•	-	•	-	-
TCS34715	Light-to-Digital	2.7 - 3.3	VDD	•	RGBC	-	4 × 4	•	-	•	-	-
TCS34717	Light-to-Digital	2.7 - 3.3	1.8V	•	RGBC	-	4 × 4	•	-	•	-	-
TCS3103/4	Light-to-Voltage	4.5 - 5.5	-	-	RGB	-	3 × 3	-	-	•	-	-
TCS3200	Light-to-Frequency	2.7 - 5.5	-	-	RGBC	-	8 × 8	-	-	-	-	•
TCS3210	Light-to-Frequency	2.7 - 5.5	-	-	RGBC	-	4 × 6	-	-	-	-	•
TCS3414	Light-to-Digital	2.7 - 3.6	VDD	•	RGBC	•	2 × 8	-	•	•	•	-

# Light Sensors

## Color Sensors and Proximity Detection

	Part No.	Type	Operating Voltage	I <sup>2</sup> C Interface	I <sup>2</sup> C Alternate Address	IR LED	Color Sensor	IR Filter	Ambient Light Sensing	Package
			V							
NEW ▶	TMD37821	Light-to-Digital	2.7 - 3.3	VDD	-	•	RGBC	•	•	Module
NEW ▶	TMD37823	Light-to-Digital	2.7 - 3.3	1.8V	-	•	RGBC	•	•	Module
	TCS37725	Light-to-Digital	2.7 - 3.6	VDD	•	-	RGBC	•	•	FN
	TCS37727	Light-to-Digital	2.7 - 3.3	1.8V	•	-	RGBC	•	•	FN
	TCS37715	Light-to-Digital	2.7 - 3.3	VDD	•	-	RGBC	-	•	FN
	TCS37717	Light-to-Digital	2.7 - 3.3	1.8V	•	-	RGBC	-	•	FN

## Proximity Detection

	Part No.	Type	Operating Voltage	I <sup>2</sup> C Interface	I <sup>2</sup> C Alternate Address	IR LED	Recommended Operating Distance		Package
			V				Short: < 15 cm	Medium: < 46 cm	
NEW ▶	TMD26721	Light-to-Digital	2.2 - 3.6	VDD	•	•	•	-	Module
NEW ▶	TMD26723	Light-to-Digital	2.2 - 3.6	1.8V	•	•	•	-	Module
	TMD26711	Light-to-Digital	2.6 - 3.6	VDD	-	•	•	-	Module
	TMD26713	Light-to-Digital	2.6 - 3.6	1.8V	-	•	•	-	Module
	TSL26721	Light-to-Digital	2.4 - 3.6	VDD	•	-	•	•	FN
	TSL26723	Light-to-Digital	2.7 - 3.6	1.8V	•	-	•	•	FN

## Light-to-Digital

	Part No.	Type	Operating Voltage	I <sup>2</sup> C Interface	I <sup>2</sup> C Alternate Address	Programmable			Package	
			V			Gain	Integration Time	Interrupts	CL	FN
NEW ▶	TSL25911	Light-to-Digital	2.7 - 3.6	VDD	•	•	100-600 mS	•	-	•
	TSL25721	Light-to-Digital	2.4 - 3.6	VDD	•	•	•	•	-	•
	TSL25723	Light-to-Digital	2.7 - 3.6	1.8V	•	•	•	•	-	•
	TSL45315	Light-to-Digital	2.3 - 3.3	VDD	•	Automatic	100, 200 and 400 mS	-	•	-
	TSL45317	Light-to-Digital	2.3 - 3.3	1.8V	•	Automatic	100, 200 and 400 mS	-	•	-



## Light-to-Frequency

Part No.	Operating Voltage	Responsivity Hz/ $\mu$ W/cm <sup>2</sup>	Maximum Output Frequency	IR Sensing	Package			
	V				Sidelooker	DIP	SOIC	T
TSL230	2.7 - 5.5	790 @ 640 nm	1.1 MHz	-	-	•	•	-
TSL235	2.7 - 5.5	625 @ 635 nm	500 KHz	-	•	-	-	-
TSL237	2.7 - 5.5	1200 @ 640 nm	1 MHz	-	•	-	-	•
TSL238	2.7 - 5.5	3400 @ 640 nm	1 MHz	-	-	-	•	•
TSL245	2.7 - 5.5	500 @ 940 nm	500 KHz	•	•	-	-	-

## Light-to-Voltage

Part No.	Operating Voltage V	Responsivity				Fast Response	Low Noise	IR Only	Package			
		Low	Medium	High	Ultra				Sidelooker	SOIC	SM	T
TSL12	2.7 - 5.5	-	-	•	-	•	-	-	•	-	•	•
TSL13	2.7 - 5.5	-	•	-	-	•	-	-	•	-	•	•
TSL14	2.7 - 5.5	•	-	-	-	•	-	-	•	-	•	-
TSL250/60	2.7 - 5.5	-	•	-	-	-	•	TSL260	•	•	•	-
TSL251/61	2.7 - 5.5	-	•	-	-	-	•	TSL261	•	•	•	-
TSL252/62	2.7 - 5.5	•	-	-	-	•	•	TSL262	•	-	•	-
TSL253	2.7 - 5.5	-	•	-	-	•	-	-	•	-	•	-
TSL254	2.7 - 5.5	•	-	-	-	•	-	-	•	-	•	-
TSL257/67	2.7 - 5.5	-	-	-	•	-	-	TSL267	•	-	•	•

# Light Sensors

## Linear Sensor Arrays

Part No.	Operating Voltage	DPI	Pixels	Integration	Maximum Frequency	Package			
	V				MHz	CS	CL	P	PCB
TSL201CL	4.5 - 5.5	200	64	Start/Stop per Pixel	5	-	•	-	-
TSL202R	4.5 - 5.5	200	128	Start/Stop per Pixel	5	-	-	•	-
TSL208R	4.5 - 5.5	200	512	Start/Stop per Pixel	5	-	-	-	•
TSL210	4.5 - 5.5	200	640	Start/Stop per Pixel	5	-	-	-	•
TSL2014	4.5 - 5.5	200	896	Start/Stop per Pixel	5	-	-	-	•
TSL1401	3.0 - 5.5	400	128	Frame by Frame	8	•	•	-	-
TSL1402R	3.0 - 5.5	400	256	Frame by Frame	8	-	-	•	-
TSL1406R	3.0 - 5.5	400	768	Frame by Frame	8	-	-	-	•
TSL1410R	3.0 - 5.5	400	1280	Frame by Frame	8	-	-	-	•
TSL1412S	3.0 - 5.5	400	1536	Frame by Frame	8	-	-	-	•
TSL3301	3.0 - 5.5	300	102	Frame by Frame	10	-	•	-	-

# In everything we do we aim to make technology a more natural experience to the user – however challenging the application.

**For example:**

**Automotive Sensors:** ams' intelligent battery management devices help to balance the power needs of vehicle systems so that the battery doesn't break down on a cold night or the air-conditioning doesn't stop working on a hot day.

**Medical Sensors & Sensor Interfaces:** In medical imaging systems like computer tomography scanners, ams ASICs enable doctors to generate extremely high-resolution images of the human body with dramatically lower doses of x-ray radiation.



# Lighting Management

## Camera Flash LED Drivers

Part No.	Topology	DC-DC Freq. MHz	Performance		LED Channels				Interfaces		Safety Features		Package (mm)
			I <sub>LED</sub> max	V <sub>out</sub> max	Curr. Sinks	Curr. Source	Flash LEDs	Indicator LED	I <sup>2</sup> C	Enable	TimeOut	TXMask	
<b>NEW ▶</b> AS3630	Supercap	4	8000mA	10V	1	High Side	2	1	•	•	•	•	WL-CSP-25 (2.5x2.5), pitch 0.5
AS3642	Inductive	4	500mA	5.5V	1	High Side	1	Flash LED	•	-	•	-	WL-CSP6 (1.5x1.1), pitch 0.5
AS3643	Inductive	4	1300mA	5.5V	2	Low Side	1	Flash LED	•	-	•	•	WL-CSP-13 (2.25x1.5), pitch 0.5
AS3644	Inductive	4	320mA	5.5V	1	High Side	1	Flash LED	•	-	•	-	WL-CSP6 (1.5x1.1), pitch 0.5
AS3645A	Inductive	2	800/500mA (2/1 LED)	10V	1	High Side	1 or 2	1	•	•	•	•	WL-CSP-12 (1.5x2), pitch 0.5
AS3647	Inductive	4	1600mA	5.5V	2	Low Side	1	Flash LED	•	-	•	•	WL-CSP-13 (2.25x1.5), pitch 0.5
AS3648	Inductive	4	2000mA	5.5V	2	Low Side	1 or 2	Flash LED	•	-	•	•	WL-CSP-13 (2.25x1.5), pitch 0.5
AS3649	Inductive	4	2500mA	5.5V	2	High Side	1 or 2	Flash LED	•	•	•	•	WL-CSP16 (2.06x2.02), pitch 0.5
AS3685A	Capacitive		1000mA	5.5V	1	Low Side	1	Flash LED	-	•	•	•	WL-CSP-12 (1.5x2), pitch 0.5 DFN-10 (3x3)
AS3685B	Capacitive		1000mA	5.5V	1	Low Side	1	Flash LED	-	•	•	•	DFN-10 (3x3) WL-CSP-12 (2x1.5)
AS3685C	Capacitive		1000mA	5.5V	1	Low Side	1	Flash LED	•	-	•	•	WL-CSP-12 (1.5x2), pitch 0.5

## Camera Flash XENON Drivers

Part No.	Topology	Supply Voltage V	V <sub>Out</sub> max V	IGBT Driver	IGBT Type	Interface	Safety Features	Package (mm)
AS3635	Flyback	2.5 - 5.5	330 (in circuit trimmable)	•	2.5 and 4V	charge, done, flash	overtemperature, overcurrent	WL-CSP-9 (1.5x1.5), pitch 0.5
AS3636	Flyback	2.5 - 5.5	330 (in circuit trimmable)	included, trimmable	2.5V and 4V	I <sup>2</sup> C, strobe, torch	one time breakable fuse in supply path, system level ESD protection	WL-CSP-16 (2.0x2.15), pitch 0.5

## LED Driver ICs

Part No.	Description	Outputs	LED Current per Output	Features	Error Detection	Read-back	LED---LED Matching	Supply Voltage	Package
		#	mA				%	V	
AS1100	8x8 Matrix LED driver	64	5	Multiplexed	-	-	3	5.0	PDIP-24 / SOIC-24
AS1101	80mA 2channel direct LED driver	2	80	Simple Drive	-	-	3	2.2 - 3.6	SC70-6
AS1102	40mA 3channel direct LED driver	3	40	Simple Drive	-	-	3	2.2 - 3.6	SC70-6
AS1103	40mA 4channel direct LED driver	4	40	Simple Drive	-	-	3	2.2 - 3.6	SC70-6
AS1104	40mA 4channel direct LED driver	4	40	Simple Drive	-	-	3	2.2 - 3.6	MSOP-8
AS1105	4x8 Matrix LED driver	32	10	Multiplexed	-	-	3	5.0	SOIC-20
AS1106	8x8 Matrix LED driver	64	5	Multiplexed	-	-	3	2.7 - 5.5	PDIP-24 / SOIC-24
AS1107	8x8 Matrix LED driver with slew rate	64	5	Multiplexed	-	-	3	2.7 - 5.5	PDIP-24 / SOIC-24
AS1108	4x8 Matrix LED driver	32	10	Multiplexed	-	-	3	3.0 - 5.5	PDIP-20 / SOIC-20
AS1109	8channel 100mA direct LED driver	8	100		•	•	2	3.0 - 5.5	SOIC150-16 / SSOP150-16 / TQFN-16 (4x4)
AS1110	16channel 100mA direct LED driver	16	100		•	•	3	3.0 - 5.5	SSOP-24 / TQFN-28 (5x5)
AS1112	16ch 100mA PWM LED driver	16	100	12-bit PWM, 6-bit DOT	•	•	4.5	3.0 - 5.5	TQFN-32 (5x5)
AS1113	16channel 50mA direct LED driver	16	50		•	•	3	3.0 - 5.5	SSOP-24 / TQFN-28 (5x5)
AS1115	64LED matrix driver with 16keys	64	5	multiplexed; I <sup>2</sup> C interface	•	•	3	2.7 - 5.5	QSOP-24 / TQFN-24 (4x4)
AS1116	64LED matrix driver	64	5.5	multiplexed	•	•	3	2.7 - 5.5	QSOP-24 / TQFN-24 (4x4)
AS1117	4LED matrix driver with 8keys	64	5	8-keys, multiplexed; I <sup>2</sup> C interface	•	•	3	2.7 - 5.5	TQFN-24 (4x4)
AS1118	64LED matrix driver	64	5.5	multiplexed, 1.8V, EN	•	•	3	2.7 - 5.5	TQFN-24 (4x4)
AS1119	144LED full color crossplexing driver with CP	144	5.5	320mA charge pump; 6 Frames; cross-plexing	•	•	2	2.7 - 5.5	WL-CSP-36 (3x3)
AS1121	16ch 40mA 30V PWM LED driver	16	40	12-bit PWM, 6-bit DOT, low EMI	•	•	1.5	3.1 - 3.6V Logic; 30V LED	TQFN-32 (5x5)
AS1122	12ch 40mA 30V PWM LED driver	12	40	12-bit PWM, 6-bit DOT, low EMI, slim interface	•	•	1.5	2.7 - 3.6	TQFN-24 (4x4)
AS1123	16channel 50mA direct LED driver	16	40	low Vds	•	•	3	3~5.5V	QSOP-24 TQFN-24 (4x4)
AS1130	132LED full color crossplexing driver	132	2.5	8-bit PWM & analog current control, dynamic headroom control	•	•	2	2.7 - 5.5	WL-CSP-20 SSOP-28
AS3691	4x400mA Precision Current Source Driving RGB and White Color LEDs for General Lighting	4	400	Slew rate contr.	-	-	0.5	Main Supply	QFN-24 ePTSOP-24

# Lighting Management

## Lighting Management Units

Part No.	# of Current Sinks		Max Current (mA)		Max Vled (V)	Features							Flash		Package (mm)
	HV	LV	CP	DC-DC		LDOs (#)	Auto ALS	DLS	RGB Pattern	Dimming	Audio-In	LED Test	Support	max I (mA)	
AS3490	3	0	No	100	7.8	-	-	•	-	-	-	•	-	-	WL-CSP-12 (1.7x1.4), pitch 0.5
AS3492	5	0	No	100	7.8	-	-	•(2x)	-	-	-	•	-	-	WL-CSP-12
AS3675	3	10	300	controller*	controller*	1	-	-	•	•	•	•	•	300	WL-CSP-30 (3x2.5), pitch 0.5
AS3676	3	10	300	controller*	controller*	1	•	•	•	•	•	•	•	300	WL-CSP30 (3x2.5), pitch 0.5
AS3677	3	3	50	50	25	1	•	2x	•	•	-	•	-	-	WL-CSP-25 (2.3x2.3), pitch 0.4
AS3687XM	3	3	150	controller*	controller*	-	-	-	•	•	•	•	•	320	WL-CSP-20 (2x2.5), pitch 0.5
AS3688	2	7	900	controller*	controller*	2	-	-	•	•	-	•	•	900	QFN-32 (5x5), pitch 0.5
AS3689	3	12	400	controller*	controller*	1	-	-	•	•	-	•	•	150	WL-CSP-36 (3x3), pitch 0.5

## Smart Notification Light

Part No.	Performance		User Memory (kbit)	Performance Features						Package (mm)
	# of Current Sinks	Charge Pump		RGB Pattern	Dimming	Ext. PWM	Ext. Trigger	Audio-In	LED Test	
AS3661	9	150mA	1.5	•	log & lin	-	•	-	•	WL-CSP25 (2.29x2.29), pitch 0.4
AS3665	9	150mA	1.5	•	log & lin	-	•	•	•	WL-CSP25 (2.61x2.67), pitch 0.5
AS3668	4	150mA	-	•	log & lin	•	•	•	•	WL-CSP12 (1.25x1.68), pitch 0.4

# Lightning Sensor

## Franklin Lightning Sensor™

Part No.	Description	Features	Supply (V)	Current Consumption (PD/Listening/Active) μA	Interface	Temp. Range (°C)	Package (mm)
AS3935	Franklin Lightning Sensor™ IC	Distance estimation up to 40 km in 14 steps, embedded Disturber rejection algorithm & auto antenna tuning	2.4 - 5.5	1 / 60 / 350	SPI or I <sup>2</sup> C	-40 to 85	MLPQ-16

## NFC/HF Booster

Part No.	Protocols Supported	Frequency	Antenna Management	Supply	Sensitivity	Data Rate	Temp. Range	Package
		MHz		V		kbps	°C	
AS3922	ISO14443A/B	13.56 MHz	•	2.7 to 3.6	5mVpp	106	-25 to 85	Die

## NFC/HF Interface and Sensor Tags

Part No.	Description	Frequency	Protocol	Supply Voltage	Temp. Range	Interface	EEPROM	Features	Data Rate	Package
		MHz		V	°C		kbits			(mm)
AS3953	NFC to SPI interface chip	13.56	ISO14443A up to level 4 NFCIP-1 target at 106kbps NFC forum tag 4 type emulation	RF field or ext. 1.65 to 3.6	-40 to 85	ISO14443A 4-wire SPI (slave) up to 5MHz	1	Wake-up interrupt, energy harvest 5mA	up to 848	Die; MLPD-10; WL-CSP
SL13A	RFID sensor tag and data logger IC	13.56	ISO15693/NFC-V	RF field or 1.2 to 3.3	-40 to 110	SPI (slave), analog input	8	Energy harvest 5mA, temperature sensor	up to 26.48	QFN-16 (5x5) or die

## NFC/HF RFID Reader ICs

Part No.	Protocols Supported	Frequency	Antenna Management	Wakeup	Closed Loop Modulation Depth Adjustment	Max. Output Power	Data Rate	Supply Voltage	Temp. Range	Package
		MHz				mW	kbps	V	°C	(mm)
AS3910	ISO14443 A/B, ISO-15693 (transparent mode), NFCIP-1 (106 kbps)	13.56	•	-	•	700	up to 848	2.4 - 3.6	-40 to 125	QFN-32 (5x5)
AS3911	ISO14443 A/B (848kbps), ISO-15693, ISO18092 (NFC active) FeliCa, EMVCo	13.56	•	Capacitive & Inductive	•	1000	up to 6800 (VHBR)	2.4 - 5.5	-40 to 125	QFN-32 (5x5)

# Position Sensors

## 3D Absolute Position Sensor

Part No.	Description	Resolution	Interfaces	Output	Redundant	Supply Voltage	Temperature Range	Package	AUT Qualified
						V	°C		
AS5410	14-bit Linear Absolute Position Sensor with Digital (Interface) and PWM Output	14 bit	SPI, PWM	Digital (Interface) / PWM	-	3.3	-40 to 105	TSSOP-16	-

## EasyPoint™ Joystick Position Sensor

Part No.	Description	Resolution	Interfaces	Output	Overvoltage Protection	Redundant	Supply Voltage	Temperature Range	Package	AUT Qualified
							V	°C		
AS5013	Two-Dimensional Magnetic Position Sensor with Digital Coordinates Output	8-bit (x and y)	I <sup>2</sup> C	Digital Coordinates (Interface)	-	-	3.0	-20 to 80	QFN-16	-

## Linear Incremental Magnetic Position Sensors

Part No.	Description	Resolution	Min Pole Pair Length	Interfaces	Output	Max Speed	Supply Voltage	Temp. Range	Package	AUT qualified	Remark
			mm			m/s	V	°C			
AS5304	160-step Linear Incremental Position Sensor with ABI output	160 step	4		ABI	20	5.0	-40 to 125	TSSOP-20	-	
AS5306	160-step Linear Incremental Position Sensor with ABI output	160 step	2.4		ABI	12	5.0	-40 to 125	TSSOP-20	-	for linear: use magnetic strip
AS5311	12-bit Linear Incremental Position Sensor with Digital Interface and PWM output	12-bit	2	SSI	PWM	0.65	3.3 or 5.0	-40 to 125	TSSOP-20	-	for off-axis: use ring magnet
AS5510	10-bit Linear Position Sensor with Digital Position (Interface) Output	10-bit		I <sup>2</sup> C	Digital position (Interface) output		2.5 - 3.6	-30 to 85	WL-CSP	-	standard axial magnet
NSE-5310	12-bit Linear Position Sensor with Digital Interface and PWM output	12-bit	2	I <sup>2</sup> C	PWM	0.65	3.3 or 5.0	-40 to 125	TSSOP-20	-	for linear: use magnetic strip for off-axis: use ring magnet



## Rotary Magnetic Position Sensors

Part No.	Description	Resolution	Interfaces	Output	Max Speed rpm	Overvoltage Protection	Redundant	Supply Voltage V	Temp. Range °C	Package	AUT qualified
AS5030	8-bit Rotary Position Sensor with Digital Angle(Interface) and PWM output	8-bit	SSI	Digital Angle (Interface) / PWM	30000	-	-	5.0	-40 to 125	TSSOP-16	-
AS5035	8-bit Rotary Position Sensor with ABI output	8-bit	-	ABI	30000	-	-	3.3 or 5.0	-40 to 125	SSOP-16	-
AS5040	10-bit Rotary Position Sensor with Digital Angle(Interface), ABI, UVW and PWM output	10-bit	SSI	Digital Angle (Interface) / ABI / UVW / PWM	30000	-	-	3.3 or 5.0	-40 to 125	SSOP-16	-
AS5043	10-bit Rotary Position Sensor with Digital Angle(Interface) and Linear analog output	10-bit	SSI	Digital Angle (Interface) / Linear analog	30000	-	-	3.3 or 5.0	-40 to 125	SSOP-16	-
AS5045	12-bit Rotary Position Sensor with Digital Angle(Interface) and PWM output	12-bit	SSI	Digital Angle (Interface) / PWM	-	-	-	3.3 or 5.0	-40 to 125	SSOP-16	-
AS5045B	12-bit Rotary Position Sensor with Digital Angle(Interface) and PWM and ABI Output	12-bit	SSI	Digital Angle (Interface) / ABI / PWM	-	-	-	3.3 or 5.0	-40 to 125	SSOP-16	-
AS5048A	14-bit Rotary Position Sensor with Digital Angle(Interface) and PWM output	14-bit	SPI	Digital Angle (Interface) / PWM	-	-	-	3.3 or 5.0	-40 to 150	TSSOP-14	-
AS5048B	14-bit Rotary Position Sensor with Digital Angle(Interface) and PWM output	14-bit	I <sup>2</sup> C	Digital Angle (Interface) / PWM	-	-	-	3.3 or 5.0	-40 to 125	TSSOP-14	-
AS5050	10-bit Rotary Position Sensor with Digital Angle(Interface) output	10-bit	SPI	Digital Angle (Interface)	-	-	-	3.3	-40 to 85	QFN-16	-
AS5055	12-bit Rotary Position Sensor with Digital Angle(Interface) output	12-bit	SPI	Digital Angle (Interface)	-	-	-	3.3	-40 to 85	QFN-16	-
AS5115	Rotary Position Sensor with Sin/ Cos signal Output	-	SSI	sin/cos	-	-	-	5.0	-40 to 150	SSOP-16	●
AS5130	8-bit Rotary Position Sensor with Digital Angle(Interface) and PWM output	8-bit	SSI	Digital Angle (Interface) / PWM	30000	-	-	5.0	-40 to 125	SSOP-16	●
AS5132	8.5-bit Rotary Position Sensor with Digital Angle(Interface), ABI, UVW (up to 6 Pole pairs) and PWM output	8.5-bit	SSI	Digital Angle (Interface) / ABI / UVW (up to 6 Pole Pairs) / PWM	72900	-	-	5.0	-40 to 150	SSOP-20	●
AS5134	8.5-bit Rotary Position Sensor with Digital Angle (Interface), ABI, UVW and PWM Output	8.5-bit	SSI	Digital Angle (Interface) / ABI / UVW (up to 6 Pole Pairs) / PWM	82000	-	-	5.0	-40 to 140	SSOP-20	●
AS5140H	10-bit Rotary Position Sensor with Digital Angle (Interface) Output, ABI and PWM Output	10-bit	SSI	Digital Angle (Interface) / ABI / PWM	10000	-	-	3.3 or 5.0	-40 to 150	SSOP-16	●
AS5145A	12-bit Rotary Position Sensor with Digital Angle (Interface), PWM and ABI Output	12-bit	SSI	Digital Angle (Interface) / ABI / PWM	-	-	-	3.3 or 5.0	-40 to 150	SSOP-16	●
AS5145B	12-bit Rotary Position Sensor with Digital Angle (Interface), PWM and ABI Output	12-bit	SSI	Digital Angle (Interface) / ABI / PWM	-	-	-	3.3 or 5.0	-40 to 150	SSOP-16	●
AS5145H	12-bit Rotary Position Sensor with Digital (Angle) Interface and PWM Output	12-bit	SSI	Digital Angle (Interface) / PWM	-	-	-	3.3 or 5.0	-40 to 150	SSOP-16	●

# Position Sensors

## Rotary Magnetic Position Sensors

Part No.	Description	Resolution	Interfaces	Output	Max Speed rpm	Overvoltage Protection	Redundant	Supply Voltage V	Temp. Range °C	Package	AUT qualified
AS5161	12-bit Rotary Position Sensor with PWM Output and Overvoltage Protection	12-bit		PWM		•	-	5.0	-40 to 150	SOIC-8	•
AS5162	12-bit Rotary Position Sensor with Linear Analog Output and Overvoltage Protection	12-bit		Linear analog		•	-	5.0	-40 to 150	SOIC-8	•
AS5163	12-bit Rotary Position Sensor with Linear Analog or PWM Output and Overvoltage Protection	12-bit		Linear analog / PWM		•	-	5.0	-40 to 150	TSSOP-14	•
AS5215	Redundant Rotary Position Sensor with Sin/Cos Output	-	SSI	sin/cos		-	-	5.0	-40 to 150	MLF-32	•
AS5245	Redundant 12-bit Rotary Position Sensor with Digital Angle (Interface) and ABI Output	12-bit	SSI	Digital Angle (Interface) / ABI / PWM		-	•	3.3 or 5.0	-40 to 150	QFN-32	•
AS5261	Redundant 12-bit Rotary Position Sensor with PWM Output and Overvoltage Protection	12-bit		PWM		•	•	5.0	-40 to 150	MLF-16	•
AS5262	Redundant 12-bit Rotary Position Sensor with Linear Analog Output and Overvoltage Protection	12-bit		Linear analog		•	•	5.0	-40 to 150	MLF-16	•
AS5263	Redundant 12-bit Rotary Position Sensor with Linear Analog or PWM Output and Overvoltage Protection	12-bit		Linear analog / PWM		•	•	5.0	-40 to 150	MLF-32	•

## SQUIGGLE® Motor Drivers

Part No.	Description	Input Control	Input Voltage VDC	Output Voltage V	Current Output DC max	Frequency Output	Efficiency	Features	Package (mm)
NSD-1202	2 Phase Ultrasonic Piezo Motor Driver IC, Output for Two SQUIGGLE® motors	I <sup>2</sup> C	2.8 - 5.5	24 - 40	25mA DC max	140 to 180kHz typical, min 80kHz	65% @ 2.8V	Voltage control over 2.8 to 5.5VDC, step-up converter to high-voltage, programmable voltage 24 to 40V, pulse width duty cycle control for slower speed control, 4 independently addressable output drivers with defined rise/fall time, I <sup>2</sup> C interface, on-chip registers store driver instructions, power-down mode for minimal power consumption in stand-by	QFN-16 (4x4)
NSD-2101	Ultrasonic Piezo Motor Driver IC, Output for one SQL-RV Series Reduced Voltage SQUIGGLE® RV	I <sup>2</sup> C	2.8 - 5.5	2.3 - 5.5	1600mA DC max	50 to 200 kHz	-	Control of 2.3 to 5.5VDC input voltage allowing pulse width duty cycle control of one SQL-RV-1.8 SQUIGGLE® motor. I <sup>2</sup> C interface provides controls for two independently addressable full bridge output drivers with defined rise/fall time, on-chip	WL-CSP-16 (1.8x1.8), QFN-16 (4x4)

# The most natural sensors are the human senses. These are our inspiration. Our products should strive to be as refined, efficient and natural as they are.

**For example:**

**Ambient Light Sensors:** Automatically adjusting the display brightness on screens depending on the ambient light, ams sensors reduce the strain on our eyes and give us a more natural user-experience while reducing energy consumption.

**MEMS microphones** in mobile devices like smartphones rely on ams sensor interface solutions to make it sound like the people talking are standing right next to each other.



# Power Management

## Battery Chargers

Part No.	Description	Chemistry	# of Cells	Charger Current A	Switchmode	OVP V	Power Path Management	USB OTG/ Host boost	NTC k	FC μA	Package (mm)
AS3610	USB Compliant Step Down Charger for Li-Ion Portable Devices	Li-Ion	1	1.25	•	22	-	•	10/100	•	MLPD-14 (3×3)
AS3611	USB Compliant Step Down Charger for Li-Ion Portable Devices	Li-Ion	1	1.25	•	22	-	•	10/100	•	MLPD-14 (3×3)

## Battery Stack Monitors/Balancers

Part No.	Cell Monitoring/Balancing ICs	Typical Standby Quiescent Current μA	Balancing Current mA	Temperature Range °C	Number of Cells per IC	Cell Voltage Range V	Package (mm)
AS8506	Cell Monitoring & Balancing IC	17	typically 100	-40 to 85	3-7	1.8 - 4.5	MLF-40 (6×6)
<b>NEW ▶</b> AS8506C	Cell Monitoring & Balancing IC (non-AUT version)	17	typically 100	-40 to 85	3-7	1.8 - 4.5	MLF-40 (6×6)

## Comparators

Part No.	Inputs #	Output Type	Internal Hysteresis mV	Supply Current μA	Supply Voltage V	Package
AS1970	1	Push/Pull	3	10	2.5 - 5.5	SOT23-5
AS1971	1	Open-Drain	3	10	2.5 - 5.5	SOT23-5
AS1972	2	Push/Pull	3	17	2.5 - 5.5	MSOP-8
AS1973	2	Open-Drain	3	17	2.5 - 5.5	MSOP-8
AS1974	4	Push/Pull	3	34	2.5 - 5.5	TSSOP-14
AS1975	4	Open-Drain	3	34	2.5 - 5.5	TSSOP-14
AS1976	1	Push/Pull	3	0.2	1.8 - 5.5	SOT23-5
AS1977	1	Open-Drain	3	0.2	1.8 - 5.5	SOT23-5

## DC-DC Buck-Boost Converters

Part No.	Input Voltage V	Output Voltage V	Output Current* mA	Efficiency %	Iq µA	Architecture	fmax kHz	Enable/ SHDN	Reset/ POK	Features	Package (mm)
AS1331	1.8 - 5.5	2.5 - 3.3	300	90	22	Hysteretic, Sync	<500	•	•	Low Battery Detection	TDFN-10 (3x3)
AS1337	0.65 - 4.5	2.5 - 5.0	200	97	20	Fixed, Sync	1.200	•	•	LDO Mode	TDFN-8 (3x3)

## DC-DC Step-down Converters

Part No.	Description	Input Voltage V	Output Voltage V	Output Current mA	Efficiency %	Iq µA	Architecture	fmax kHz	Enable/ SHDN /SHDN	Reset POK	Features	Package (mm)
AS1324	DC-DC Step-Down Converter, 600mA, 1.5MHz	2.7 - 5.5	0.6 - Vin	600	96	35	fixed Frequency, sync.	1500	•	-		TSOT23-5
AS1332	DC-DC Step-Down Converter, 650mA for RF PA supply	2.7 - 5.5	1.3 - 3.16	650	96	1000	fixed Frequency, sync.	2000	•	-	Dynamical Voltage Control	WL-CSP-8
AS1334	DC-DC Step-Down Converter, 650mA Ultra-Low Ripple	3.25 - 5.5	1.2 - 3.4	650	96	1000	fixed Frequency, sync.	2000	•	•	Low Noise, Low Output Voltage Ripple	TDFN-8 (3x3)
AS1335	DC-DC Step-down Converter, Iout=1.5A 1.5MHz	2.6 - 5.25	0.6 - 5.25	1500	96	400	fixed Frequency, sync.	1500	•	-		TDFN-10 (3x3)
AS1339	DC-DC Step-Down Converter, 650mA, 2x10mA LDOs for RF PA supply	2.7 - 5.5	0.8 - 3.75	650	96	4500	fixed Frequency, sync.	2000	•	-	dynamical Voltage Control for RF-PA supply, WCDMA/NCDMA	WL-CSP-16
AS1341	HV DC-DC Step-down Converter 20V, 600mA	4.5 - 20	1.25 - Vin	600	96	12	Hysteretic, async	<250	•	•	100% Duty Cycle	TDFN-8 (3x3)
AS1347	AS1347 Dual 0.5A and 0.5A Step Down Converter	2.7 - 5.5	1.2 - 3.6	500 and 500	95	2000	fixed Frequency, sync	2000	•	•		TDFN-12 (3x3)
AS1348	AS1348 Dual 0.5A and 0.95A Step Down Converter	2.7 - 5.5	1.2 - 3.6	500 and 950	95	2000	fixed Frequency, sync	2000	•	•		TDFN-12 (3x3)
AS1349	AS1349 Dual 1.2A and 1.2A Step Down Converter	2.7 - 5.5	1.2 - 3.6	1200 and 1200	95	2000	fixed Frequency, sync	2000	•	•		TDFN-12 (3x3)
AS7620	HV DC-DC Step-Down Converter, 32V, with Dual Power Monitor	3.6 - 32	AS7620-A: 1.2 - Vin AS7620-B: 3.3	500	90	30	Hysteretic, async	>250	•	•	Early Power Fail Warning 100% Duty Cycle	QFN-12 (4x4)

\*) no load supply current

# Power Management

## DC-DC Step-up Converters

Part No.	Description	Input Voltage V	Output Voltage V	Output Current mA	Efficiency %	Iq µA	Architecture	fmax kHz	Enable/ SHDN	Reset/ POK	Features	Package (mm)
AS1302	Inductorless Boost Converter, Lowest Power, 5V/30mA	2.9 - 5.15	5.0	30	90	100	Charge Pump	1200	•	-	Inductorless	WL-CSP-8 (1.2x1.2) TDFN-10 (3x3)
AS1310	Ultra Low 1µA Quiescent Current	0.7 - 3.6	1.8V - 3.3V	100	92	1	hysteretic, sync.		•	•	Low Battery Detection	TDFN-8 (2x2)
<b>NEW ▶</b> AS1312	Ultra Low 1µA Quiescent Current	0.7 - 5.0	2.5 - 5.0	100	94	1	Hysteretic, sync		•	•	Low Battery Detection	TDFN-8 (2x2), WL-CSP-8, pitch 0.4
AS1322	DC-DC Step-Up Converter Low Voltage, 1.2 MHz	0.65 - 5.0	2.5 - 5.0	315	95	30	fixed Frequency, sync	1200	•	-	Powersave Mode	TSOT23-6
AS1323	DC-DC Step-Up Converter 1.6µA Quiescent Current	0.75 - 2.0	2.7, 3.0 and 3.3	100	85	1.6	Hysteretic, Sync		•	-	1.6µA Quiescent Curr.	TSOT23-6
AS1326	DC-DC Step-Up Converter High-Current 650mA	0.7 - 5.0	3.3, 2.5 - 5.0	650	96	65	fixed Frequency, sync	1200	•	-	Synchr. to Ext. Clock, Softstart	TDFN-10
AS1329	DC-DC Step-Up Converter Low Voltage, 1.2 MHz	0.65 - 5.0	2.5 - 5.0	315	95	30	fixed Frequency, Sync	1200	•	-	Battery Feedthrough	TSOT23-6
AS1330	DC-DC Step-up Converter 4MHz and 470nH Inductor	0.6 - 3.0	1.8 - 3.3	150	91	30	fixed Frequency, sync	4000	•	•	Output Disconnect, Low Battery Detection	TDFN-8 (2x2)
AS1337	DC-DC Step-Up Converter 200mA with Buck Mode	0.65 - 4.5	2.5 - 5.0	200	97	20	fixed Frequency, sync	1200	•	•	Buck Mode	TDFN-8 (3x3)
AS1340	HV DC-DC Step-up Converter, 50V, Adjustable Output with Shutdown Disconnect	2.7 - 50	2.7 - 50	100**	90	30	fixed Frequency, async	1000	•	•	Output Disconnect	TDFN-8 (3x3)
<b>NEW ▶</b> AS1345A	18V, High Efficiency, 100mA coil current, DC-DC Step-Up Converter	2.9 - 5.0	5.0 - 18	40	90	25	Hysteretic		•	•	Power Good Output, Shutdown, Output Disconnect in Shutdown Fixed and Adjustable Output Versions	TDFN-8 (2x2), WL-CSP-8, pitch 0.4
<b>NEW ▶</b> AS1345B	18V, High Efficiency, 200mA coil current, DC-DC Step-Up Converter	2.9 - 5.0	5.0 - 18	40	90	25	Hysteretic		•	•	Power Good Output, Shutdown, Output Disconnect in Shutdown Fixed and Adjustable Output Versions	TDFN-8 (2x2), WL-CSP-8, pitch 0.4
<b>NEW ▶</b> AS1345C	18V, High Efficiency, 350mA coil current, DC-DC Step-Up Converter	2.9 - 5.0	5.0 - 18	40	90	25	Hysteretic		•	•	Power Good Output, Shutdown, Output Disconnect in Shutdown Fixed and Adjustable Output Versions	TDFN-8 (2x2), WL-CSP-8, pitch 0.4
<b>NEW ▶</b> AS1345D	18V, High Efficiency, 500mA coil current, DC-DC Step-Up Converter	2.9 - 5.0	5.0 - 18	40	90	25	Hysteretic		•	•	Power Good Output, Shutdown, Output Disconnect in Shutdown Fixed and Adjustable Output Versions	TDFN-8 (2x2), WL-CSP-8, pitch 0.4

\*) at 2V Vin; if Vout is adjustable, Vout = 3.3V \*\*\*) at 3.3Vin, Vout=12V

## LDOs

Part No.	Outputs #	Accuracy %	Output Current** mA	Feature	Output Voltage V	Dropout Voltage @ max Current mV	Supply Current µA	Supply Voltage V	Package (mm)
AS1353	1	± 1.0	150	Low Noise	1.5 - 3.6	60	115	2.5 - 5.5	SOT23-5
AS1355	3	± 1.0	300	OTP*	1.25 - 3.6	100 @ 200mA	160	2.3 - 5.5	QFN-16 (3x3)
AS1358	1	± 0.5	150	Ultra Low Noise, High PSRR	1.5 - 4.5	70	40	2.0 - 5.5	TSOT23-5
AS1359	1	± 0.5	300	Ultra Low Noise, High PSRR	1.5 - 4.5	140	40	2.0 - 5.5	TSOT23-5
AS1360	1	± 1.5	250	High Voltage, Low IQ	1.8, 2.5, 3.0, 3.3, 5.0	400	1.5	2.0 - 20	SOT23-3
AS1363	1	±0.75	500	Ultra Low Dropout, Ultra Low Noise	1.2 - 5.3	150	40	2.0 - 5.5	SOT23-6
AS1364	1	±0.75	1000	Ultra Low Dropout, Ultra Low Noise	1.2 - 5.3	140	35	2.0 - 5.5	TDFN-8 (3x3)
AS1369	1	±0.7	200	Micro-Sized	1.2 - 5.0	80	25	2.0 - 5.5	WL-CSP-4
AS1374	2	± 1.0	200	Ultra Low Noise, High PSRR	1.2 - 3.6	120	30	2 - 5.5	WL-CSP-6
AS1375	1	± 2	200	Ultra Low Quiescent Current	1.2 - 5	200	1	2 - 5.5	TDFN-6 (2x2)
AS1376	1	2	1000	Ultra Low Input Voltage, 2 weeks availability for non-standard devices between 0.5V and 1.1V in 50mV steps and between 1.1V and 2.2V in 100mV steps.	0.5 - 2.2	120	60	0.7 - 3.6	TDFN-8 (2x2)
AS13985	1	± 1.0	150	Ultra Low Dropout	1.2 - 5.0	45	95	2.5 - 5.5	CS-WLP-5 / SOT23-5

\*) One Time Programmable: The Output Voltage of each Output port can be programmed, one time, on a PCB board, (\*\*) per output

## Power Management Units

Part No.	DC-DC Step Up Converters	DC-DC Step Down converters	RF LDOs mA	Digital LDOs mA	Current Sinks mA	Charge Pump V/mA	Audio DAC	Audio ADC	Audio Features	General Purpose ADC	Charger	Customizable Startup Sequences	Package (mm)
AS3606	1x General Purpose (Voltage or Current Output) (30V)	3x0.7A or 1.4A+0.7A	1x100, 3x250	-	2x38 (HV)	-	-	-	-	10-bit	Linear	Programmable	QFN-32 (5x5)
AS3607	1x General Purpose (Voltage or Current Output) (30V)	3x0.7A or 1.4A+0.7A	1x100, 4x250	-	2x38 (HV)	-	-	-	-	10-bit	Linear	Programmable	QFN-36 (6x6)
AS3608	1x General Purpose (Voltage or Current Output) (30V)	3x1A or 2A+1A	1x100, 4x250	-	2x38 (HV)	-	-	-	-	10-bit	Linear	Programmable	QFN-36 (6x6)
AS3658	2x General Purpose (Voltage or Current Output)	3x0.5A or 1.6A + 2x0.5A or 1.6A + 1A	1x400, 2x150	4x200	4x40, 3x40 (HV)	5/100	96dB SNR	84dB SNR	2x Headphone, 1x Line Out, 1x Line In, Mic Input, Audio Mixer, Equalizer	10-bit	Step-Down/Linear + Linear	8x + Programmable	BGA-124 (8x8)
AS3710	3x General Purpose (Voltage or Current Output)	1.5A + 2x1A or 2A + 1.5A	2x250	6x300	3x40 (HV)	-	-	-	-	10-bit	Step-Down/Linear	Programmable	QFN-56 (7x7)
AS3711	2x General Purpose (Voltage or Current Output)	1x3A + 1.5A + 2x1A or 3A + 2A + 1.5A	2x250	6x300	3x40 (HV)	-	-	-	-	10-bit	Step-Down/Linear	Programmable	QFN-56 (7x7)
AS3712	3x General Purpose (Voltage or Current Output)	1.5A + 2x1A or 2A + 1.5A	2x250	6x300	3x40 (HV)	-	-	-	-	10-bit	-	Programmable	QFN-56 (7x7)
AS3713	2x General Purpose (Voltage or Current Output)	1x3A + 1.5A + 2x1A or 3A + 2A + 1.5A	2x250	6x300	3x40 (HV)	-	-	-	-	10-bit	-	Programmable	QFN-56 (7x7)
AS3721	-	8phase + 2phase + 2phase + 4A + 2A + 2x1.5A	-	12x300	-	-	-	-	-	-	-	Programmable	BGA-124 (8x8)
AS3729	-	2phase power stage with 2x2.5A	-	-	-	-	-	-	-	-	-	-	WL-CSP-16

NEW

# Power Management

## Signal Monitoring

Part No.	Description	Resolution	Features	Supply Voltage	Temp. Range	Automotive Qualification	Package	Comments
		bit		V	°C		(mm)	
AS8002	Solar photovoltaic inverter measurement IC with fast over current detection	12	Voltage and current measurement, programmable gain amplifiers, on-chip temperature sensor, fast overcurrent detection	3.0 - 3.6	-40 to 125	-	QFN-16 (4x4)	target market: photovoltaic solar inverters

## Supervisors

Part No.	Description	Supervised Voltages				Inputs	Push/Pull Active Low	Push/Pull Active High	Open-Drain	Watch-dog	Man. Reset	Supply Current	Supply Voltage	Package
		V (IN1)	V (IN2)	V (IN3)	V (IN4)									
AS1903	230nA Low Power μP Supervisory Circuit, Open-Drain Active-Low Reset	2.2 - 3.1				1	-	-	•	-	-	0.23	1.0 - 3.6	SOT23-3
AS1904	150nA Ultra Low Power μP Supervisory Circuit, Push-Pull Active-Low Reset	2.2 - 3.1				1	•	-	-	-	-	0.15	1.0 - 3.6	SOT23-3
AS1905	150nA Ultra Low Power μP Supervisory Circuit, Push-Pull Active-High Reset	2.2 - 3.1				1	-	•	-	-	-	0.15	1.0 - 3.6	SOT23-3
AS1906	150nA Ultra Low Power μP Supervisory Circuit, Open-Drain Active-Low Reset	2.2 - 3.1				1	-	-	•	-	-	0.15	1.0 - 3.6	SOT23-3
AS1907	Low-Voltage μP Supervisory Circuit, Active-Low Push/Pull Reset	1.6 - 2.5				1	•	-	-	-	-	2.6	0.7 - 3.6	SOT23-3
AS1908	Low-Voltage μP Supervisory Circuit, Active-High Push/Pull Reset	1.6 - 2.5				1	-	•	-	-	-	2.6	0.7 - 3.6	SOT23-3
AS1909	Low-Voltage μP Supervisory Circuit, Open-Drain Reset	1.6 - 2.5				1	-	-	•	-	-	2.6	0.7 - 3.6	SOT23-3
AS1916	Microprocessor Supervisory Circuits with Manual Reset and Watchdog	1.58 - 3.6				1	-	•	-	•	•	5.5	1.0 - 3.6	SOT23-5
AS1917	Microprocessor Supervisory Circuits with Manual Reset and Watchdog	1.58 - 3.6				1	-	•	-	•	•	5.5	1.0 - 3.6	SOT23-5
AS1918	Microprocessor Supervisory Circuits with Manual Reset and Watchdog	1.58 - 3.6					-	-	•	•	•	5.5	1.0 - 3.6	SOT23-5
AS1920	Triple-Voltage Supervisory Circuit with Push/Pull Reset	3	1.8	Adjust.		3	•	-	-	-	-	6.5	1.0 - 3.6	SOT23-5
AS1922	Triple-Voltage Supervisory Circuit with Open-Drain Reset	3	1.8	Adjust.		3	-	-	•	-	-	6.5	1.0 - 3.6	SOT23-5
AS1923	Quad-Voltage Supervisory Circuit	5.0, Adj.	3.3, 3.0	2.5, 1.8, Adj.	-5.0, 1.8, Adj.	4	-	-	•	-	-	6.5	1.0 - 3.6	SOT23-5



# Technology is enhancing our lives by becoming more responsive to the world around us. Our products are crucial for this responsiveness.

## For example:

**RFID reader ICs** from ams enable consumers to make purchases using their smartphones conveniently and securely due to the reader's ability to easily detect weak incoming radio signals.

**Industrial Magnetic Position Sensors** from ams can measure the slightest movements of the arms and fingers of a surgical robot, enabling doctors to "take surgery beyond the limits of the human hand."



# RF Transmitters & Receivers

## LF Receivers

Part No.	Description	Channels	Wake-up Sensitivity	LF Carrier Freq. Range	Data Rate (Manch.)	Dynamic Range	RSSI Step	Package
		#	$\mu\text{Vpp}$	kHz	kbps	dB	dB	(mm)
AS3930	Programmable 1D LF Wake-up Receiver	1	282	110 - 150	0.5 - 4	64	2	TSSOP-16, QFN-16 (4x4)
AS3931	3D Low Power LF Wakeup Receiver	3	350	19-150	1.365	60	290mV	TSSOP-16
AS3932	Programmable 3D LF Wake-up Receiver	3	282	110 - 150	0.5 - 4	64	2	TSSOP-16, QFN-16
AS3933	Programmable 3D LF Wake-up Receiver	3	225	15 - 150	0.5 - 4	64	2	TSSOP-16, QFN-16 (4x4)

## RF Transceivers

Part No.	Description	Supply	Frequency	Clients (max)	Range	TX Power (max)	Data Rate (max)	RX Current	TX Current (typ)	Digital Output	Temp. Range	Package
		V	MHz		m (typ)	dBm	kbit/s	mA (typ)	mA @ 0dBm		°C	(mm)
AS3900	27MHz Star Network FSK Transceiver	2.0 - 3.6	27.12	8	2	10	26.5 - 212	3.8	4.9	SDI	-40 to 85	QFN-28 (5x5)
AS3940	2.4GHz Star Network FSK Transceiver	2.2 - 3.6	2405 - 2480	8	100	0	2000	20.9	21.5	SDI	-40 to 85	QFN-32 (5x5)
AS3977	Multi-Channel Narrowband FSK Transmitter	2.0 - 3.6	300 - 928	No clients - only simple Transmitter	Depending on external receiver sensitivity and antenna configuration	-20 to +10	Up to 100	No receiver	see datasheet	Only digital SPI input (for transmitter data, register settings)	-40 to 85	QFN-16 (4x4)

# Sensor Driven Lighting



## LED Drivers

Part No.	Description	Outputs	LED Current per Output	Features	Error Detection	Read-back	LED-to-LED Matching	Supply Voltage	Package	
		#	mA				%	V	(mm)	
AS3691	4x400mA Precision Current Source Driving RGB and White Color LEDs for General Lighting	4	400	Slew rate contr.	-	-	0.5	Main Supply	QFN-24 ePTSSOP-24	
AS3693A	16 Channel High Precision LED Driver for LCD Backlight	16	150	Slew rate contr.	•	-	0.5	Main Supply	epTQFP-64 (10x10), pitch 0.5 QFN-48 (6x6), pitch 0.4 QFN-48 (7x7), pitch 0.5	
AS3693B	16 Channel High Precision LED Controller for LCD Backlight	16	limited by external FET	Slew rate contr.	•	-	0.5	Main Supply	epTQFP-64 (10x10), pitch 0.5 QFN64, (9x9), pitch 0.5	
AS3693B1	16 Channel High Precision LED Controller for LCD Backlight	16	limited by external FET	Slew rate contr.	•	-	0.5	Main Supply	epTQFP-64 (10x10), pitch 0.5 QFN-64 (9x9), pitch 0.5	
AS3695A	16 Channel High Precision LED Driver for LCD Backlight	16	120	2 configurable supply regulation feedback outputs	•	•	0.5	4.0 - 5.5	QFN-48 (7x7), pitch 0.5	
AS3695C	16 Channel Precision LED Controller	16	limited by external FET	2 configurable supply regulation feedback outputs	•	•	0.5	4.0 - 5.5	QFN-64 (9x9), pitch 0.5 LQFP-64 (14x14), pitch 0.8	
AS3696	4 channel white LED controller for General Lighting or 3D-LCD backlight	4	limited by external FET	3D mode	•	-	1	Main Supply	QFN-32 (5x5), pitch 0.5 TQFP-32 (7x7), pitch 0.8	
AS3810	16 channel white LED controller for LCD backlight	16	177.5	enhanced digital feedback, 3D	•	-	0.9	4.0 - 5.5	QFN-32	
AS3820	16 channel white LED controller for LCD backlight	16	limited by external FET	2 configurable supply regulation feedback outputs	•	-	0.2	4.0 - 5.5	QFN-48 (7x7), pitch 0.5 LQFP-44 (10x10), pitch 0.8	
AS3821	12 channel LED controller	12	limited by external FET	2 configurable supply regulation feedback outputs	•	-	0.2	4.5 - 5.5	LQFP-44 (10x10), pitch 0.8	
AS3822	8 channel white LED controller for LCD backlight	8	depends on external FET	Enhanced digital feedback, 3D, DPLL	•	-	0.2	4.0 - 5.5	QFN-32, TQFP-32	
AS3823	6 Channel White LED Controller for LCD Backlight	6	depends on external FET	enhanced digital feedback, 3D, DPLL	•	-	0.2	4.0 - 5.5	QFN-32, TQFP-32	
NEW ▶	AS3833	6 channel high-precision LED controller for 3D-LCD backlight with integrated step-up controller	6	300	integrated step-up, 1 PWM input with phase shift, use of inexpensive BJTs with BETA compensation, LED string voltage only limited by BJT rating	LED short/open with BJT temp. supervision	-	0.6	12 - 50	TQFP-32 (7x7), pitch 0.8 SOIC-28, pitch 1.27
NEW ▶	AS3834	4 channel high-precision LED controller for 3D-LCD backlight with integrated step-up controller	4	300	integrated step-up, 4 PWM inputs, use of inexpensive BJTs with BETA compensation, LED string voltage only limited by BJT rating	LED short/open with BJT temp. supervision	-	0.6	12 - 50	SOIC-28, pitch 1.27
NEW ▶	AS3834B	4 channel high-precision LED controller for 3D-LCD backlight with integrated step-up controller	4	300	integrated step-up, 1 PWM input with phase shift, use of inexpensive BJTs with BETA compensation, LED string voltage only limited by BJT rating	LED short/open with BJT temp. supervision	-	0.6	12 - 50	SOIC-28, pitch 1.27

## LED Power Converters

Part No.	Description	Input Voltage	Output Voltage Boost Controller	Output Current Boost	Output Buck Converter	Overvoltage Protection	Overcurrent Protection	Overtemp. Protection	3D Features	Package
		V	V							
AS1390A	High Power Boost Controller and Buck Converter for LED Backlight	10 - 30	100	3A	5V/100mA	•	•	•	•	QFN-20
AS1390B	High Power Boost Controller and Buck Converter for LED Backlight	10 - 30	100	3A	5V/100mA	•	•	•	-	SOIC-16

# Sensor Driven Lighting

## SDL Ambient Light Sensors

Part No.	Type	Operating Voltage	I <sup>2</sup> C Bus	I <sup>2</sup> C Address	Color Sensor	IR Filter	Ambient Light Sensing	Package
		V						
TSL45311	Light-to-Digital	2.3 - 3.3	Vdd	0x39	-	•	•	CL
TSL45313	Light-to-Digital	2.3 - 3.3	1.8V	0x39	-	•	•	CL
TSL45315	Light-to-Digital	2.3 - 3.3	Vdd	0x29	-	•	•	CL
TSL45317	Light-to-Digital	2.3 - 3.3	1.8V	0x29	-	•	•	CL
TSL25721	Light-to-Digital	2.4 - 3.6	Vdd	0x39	-	•	•	FN
TSL25723	Light-to-Digital	2.7 - 3.6	1.8V	0x39	-	•	•	FN

## SDL Color Sensors

Part No.	Type	Operating Voltage	I <sup>2</sup> C Bus	I <sup>2</sup> C Address	Color Sensor	IR Filter	Ambient Light Sensing	Package
		V						
TCS34725	Light-to-Digital	2.7 - 3.6	Vdd	0x29	RGBC	•		FN
TCS34727	Light-to-Digital	2.7 - 3.3	1.8V	0x29	RGBC	•		FN

## Analog Switches

Part No.	Lines #	Type	RON Ohm	RON Flatness Ohm	RON Matching Ohm	On/Off time ns	Supply Voltage V	Package (mm)
AS1747	2	SPDT	0.45/0.55	0.4	0.15	400/200	1.8 - 5.5	TDFN-10 (3x3)
AS1753	4	SPST NO/NC	0.9	0.1	0.12	22/14	1.5 - 3.6	TSSOP-14 / QFN-16 (3x3)

## Data Acquisition Front-Ends

Part No.	Description	Channels #	Resolution bit	Sampling Rate ksps	Supply Current mA @ max speed	Supply Current mA	Supply Voltage V	Package (mm)
AS8501	Calibrated Data Acquisition IC, Single ADC	4 mux	16	8	4	3	4.9 - 5.1	SOIC-300-16
AS8510	Data Acquisition IC, Dual ADC	1 + 3 mux	16	4	5	4	3.3	SSOP-20
<b>NEW ▶</b> AS8515	Data Acquisition, LIN Communication	1+3mux	16	up to 4	5	5	12 nominal (4.3 - 18)	MLF (5x5)

## FlexRay™ Transceivers

Part No.	Network	Description	Supply Voltage V	Temperature Range °C	Package (mm)
AS8220	FlexRay™	FlexRay™ Enhanced Standard Transceiver	-	-40 to 150	TSSOP-14
AS8222	FlexRay™	FlexRay™ Enhanced Standard Transceiver	VBAT 5.5 - 40	-40 to 150	SSOP-20
AS8223	FlexRay™	FlexRay™ Active Star Device	VBAT 5.5 - 40	-40 to 125	MLF-44 (9x9)
AS8224	FlexRay™	FlexRay™ Active Star Device with Bit-Reshaper	VBAT 5.5 - 40	-40 to 125	MLF-44 (9x9)

# Sensor Interfaces

## Industrial Bus

Part No.	Description	Network	Description	Supply Voltage	Temperature Range	Package
				V	°C	(mm)
AS8202NF	TTP®-C2NF Communication Controller	TTP®	TTP® Controller	3.3	-40 to 125	LQFP-80

## LIN/CAN Bus Systems

Part No.	Description	Typical Standby Quiescent Current	Operating Supply Range	Ambient Temperature Range	Package
		µA	V	°C	(mm)
AS8525	High Side battery sensor companion IC with LIN	50	4.9 - 18	-40 to 125	punched QFN-32 (5x5)
AS8530	8 PIN LIN Companion IC with microcontroller interface	37	6 - 18	-40 to 125	epSOIC-8
AS8650	Smart Power Management Device with High Speed CAN Interface	65	6 - 18	-40 to 105 (at maximum load)	QFN-36 (6x6)

## UHF Interface and Sensor Tag

Part No.	Description	Frequency	Protocol	Supply Voltage	Temp. Range	Interface	EEPROM	Sensor Type	Package
		MHz		V	°C		kbits	integrated	(mm)
<b>NEW ▶</b> SL900A	EPC sensor tag and data logger IC	860 - 960	EPC Gen2	RF field or 1.2 to 3.6	-40 to 125	SPI (slave), analog inputs	9	Temperature	QFN-16 (5x5) or DoW

## UHF RFID Reader ICs

Part No.	Standards	ISM Range	TX Modulation	Sensitivity	Output Power	Link Frequencies Supported	Coding	Temp. Range	Package
		MHz		dBm	dBm	kHz		°C	
AS3990	EPC Class 1 - Gen 2, ISO 18000 6c/b	840 - 960	ASK-DSB, PR-ASK	-66	0	40 - 640	FM0, M2-8	-40 to 85	QFN-64
AS3991	EPC Class 1 - Gen 2, ISO 18000 6c/b	840 - 960	ASK-DSB, PR-ASK	-66	20	40 - 640	FM0, M2-8	-40 to 85	QFN-64
AS3992	EPC Class 1 - Gen 2, ISO 18000 6c/b, DRM	840 - 960	ASK-DSB, PR-ASK	-86	20	40 - 640	FM0, M2-8	-40 to 85	QFN-64
AS3993	EPC Class 1 - Gen 2, ISO 18000 6c/b, ISO 29143	840 - 960	ASK-DSB, PR-ASK	-90	20	40 - 640	FM0, M2-8	-40 to 85	QFN-48

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# Full Service Foundry Technology Overview



## Leading Edge Technology

Feature Size	ams Process Technology	Process Name	# Masks	# Metal	5V Module	High Res Poly	Poly Caps	MIM Caps	Thick Metal	Additional Information
0.18µm	CMOS Mixed-Signal 1.8/5V	C18	16-32	3-7	•	•		•	•	IBM CMOS7RF equivalent, High Density and Low Leakage libraries
0.18µm	High-Voltage CMOS 1.8/5/20/50V	H18	22-34	3-7	•	•		•	•	Ron: 130 mOhm mm <sup>2</sup> (50V) Ron: 14.4 mOhm mm <sup>2</sup> (20V) High Density and Low Leakage libraries
0.35µm	CMOS Mixed-Signal 3.3/5V	C35	13-22	3-4	•	•	•	•	•	TSMC compatible, RF extension
0.35µm	Opto-CMOS 3.3/5V	C35O	17-19	4	•	•	•			ARC layer, sensitivity 350mA/W at 550-900 nm
0.35µm	CMOS embedded Flash 3.3/5V	C35EE	21-25	3-4	•	•	•			1Kx8 - 32Kx16 block size, high reliability
0.35µm	High-Voltage CMOS 3.3/5/20/50/120V	H35	18-27	3-4	•	•	•		•	Ron: 35 mOhm mm <sup>2</sup> (20V) Ron: 120 mOhm mm <sup>2</sup> (50V) Ron: 350 mOhm mm <sup>2</sup> (120V)
0.35µm	High-Voltage CMOS embedded Flash 3.3/5/20/50/120V	H35EE	26-34	3-4	•	•	•		•	1Kx8 - 4Kx16 block size, high reliability
0.35µm	SiGe-BiCMOS 3.3/5/12V	S35	23-32	3-4	•	•	•	•	•	fT: 65 / 38 / 15 GHz fmax: 65 / 61 / 32 GHz BVCEO: 2.7 / 5.1 / 14V
0.8µm	CMOS Mixed-Signal 5V	CXQ	11-13	2	•	•	•			Suitable for high performance analog mixed-signal sensor applications
0.8µm	High-Voltage CMOS 50V	CXZ	15-17	2	•	•	•			Ron: 0.29 Ohm mm <sup>2</sup>
0.8µm	BiCMOS 5V	BYQ	16-17	2	•	•	•			fT: 12 GHz, fmax: 14 GHz, BVCEO: >6V

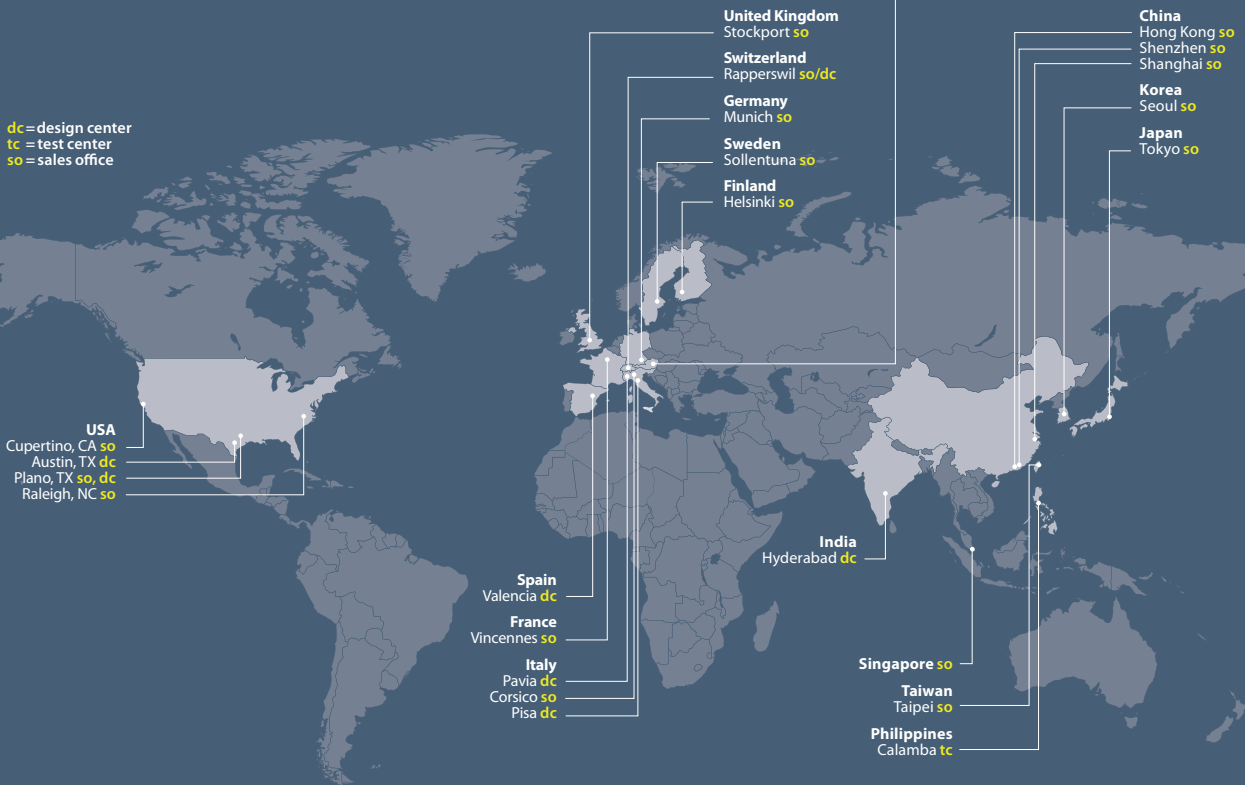
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