

Is Now Part of



ON Semiconductor®

To learn more about ON Semiconductor, please visit our website at www.onsemi.com

Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild guestions@onsemi.com.

ON Semiconductor and the ON Semiconductor logo are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any EDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officer



January 2008

74LVT2245, 74LVTH2245 Low Voltage Octal Bidirectional Transceiver with 3-STATE Inputs/Outputs and 25 Ω Series Resistors in the B Port Outputs

Features

- Input and output interface capability to systems at 5V V_{CC}
- Equivalent 25Ω series resistor on B Port outputs
- Bushold data inputs eliminate the need for external pull-up resistors to hold unused inputs (74LVTH2245), also available without bushold feature (74LVT2245)
- Live insertion/extraction permitted
- Power Up/Down high impedance provides glitch-free bus loading
- Outputs source/sink –12mA/+12mA on B Port, –32mA/+64mA on A Port
- Latch-up performance exceeds 500mA
- ESD performance:
 - Human-body model > 2000V
 - Machine model > 200V
 - Charged-device model > 1000V

General Description

The LVT2245 and LVTH2245 contain eight non-inverting bidirectional buffers with 3-STATE outputs and are intended for bus-oriented applications. The Transmit/Receive (T/ \overline{R}) input determines the direction of data flow through the bidirectional transceiver. Transmit (active-HIGH) enables data from A Ports to B Ports; Receive (active-LOW) enables data from B Ports to A Ports. The Output Enable input, when HIGH, disables both A and B Ports by placing them in a high impedance state. The equivalent 25 Ω -series resistor in the B Port helps reduce output overshoot and undershoot.

The LVTH2245 data inputs include bushold, eliminating the need for external pull-up resistors to hold unused inputs.

These transceivers are designed for low voltage (3.3V) V_{CC} applications, but with the capability to provide a TTL interface to a 5V environment. The LVT2245 and LVTH2245 are fabricated with an advanced BiCMOS technology to achieve high speed operation similar to 5V ABT while maintaining low power dissipation.

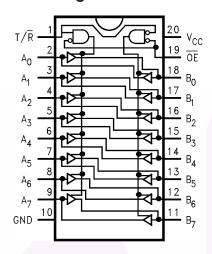
Ordering Information

Order Number	Package Number	Package Description
74LVT2245WM	M20B	20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300" Wide
74LVT2245SJ	M20D	20-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
74LVT2245MTC	MTC20	20-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide
74LVTH2245WM	M20B	20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300" Wide
74LVTH2245SJ	M20D	20-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
74LVTH2245MTC	MTC20	20-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide

Device also available in Tape and Reel. Specify by appending suffix letter "X" to the ordering number.

All packages are lead free per JEDEC: J-STD-020B standard.

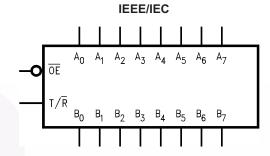
Connection Diagram

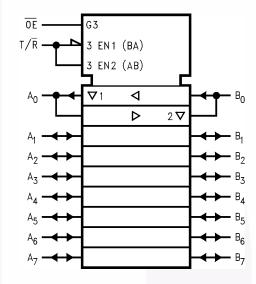


Pin Description

Pin Names	Description
ŌĒ	Output Enable Input
T/R	Transmit/Receive Input
A ₀ -A ₇	Side A Inputs or 3-STATE Outputs
B ₀ –B ₇	Side B Inputs or 3-STATE Outputs

Logic Symbols





Truth Table

Inp	uts	
ŌĒ	T/R	Outputs
L	L	Bus B Data to Bus A
L	Н	Bus A Data to Bus B
Н	Х	HIGH-Z State

H = HIGH Voltage Level

L = LOW Voltage Level

X = Immaterial

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

Symbol	Parameter	Rating
V _{CC}	Supply Voltage	-0.5V to +4.6V
V _I	DC Input Voltage	-0.5V to +7.0V
Vo	DC Output Voltage	
	Output in 3-STATE	-0.5V to +7.0V
	Output in HIGH or LOW State ⁽¹⁾	-0.5V to +7.0V
I _{IK}	DC Input Diode Current, V _I < GND	–50mA
I _{OK}	DC Output Diode Current, V _O < GND	_50mA
I _O	DC Output Current, V _O > V _{CC}	
	Output at HIGH State	64mA
	Output at LOW State	128mA
I _{CC}	DC Supply Current per Supply Pin	±64mA
I _{GND}	DC Ground Current per Ground Pin	±128mA
T _{STG}	Storage Temperature	−65°C to +150°C

Note:

1. I_O Absolute Maximum Rating must be observed.

Recommended Operating Conditions

The Recommended Operating Conditions table defines the conditions for actual device operation. Recommended operating conditions are specified to ensure optimal performance to the datasheet specifications. Fairchild does not recommend exceeding them or designing to absolute maximum ratings.

Symbol	Parameter	Min	Max	Units	
V _{CC}	Supply Voltage		2.7	3.6	V
VI	Input Voltage		0	5.5	V
I _{OH}	HIGH-Level Output Current	A Port	//	-32	mA
		B Port		-12	
I _{OL}	LOW-Level Output Current	A Port		64	mA
		B Port		12	
T _A	Free Air Operating Temperature	-40	+85	°C	
Δt/ΔV	Input Edge Rate, $V_{IN} = 0.8V-2.0V$, V_{CC}	; = 3.0V	0	10	ns/V

DC Electrical Characteristics

					T _A = -40°C	to +85°C	
Symbol	Parame	ter	V _{CC} (V)	Conditions	Min.	Max.	Units
V _{IK}	Input Clamp Diode Vo	oltage	2.7	I _I = -18mA		-1.2	V
V_{IH}	Input HIGH Voltage		2.7–3.6	$V_0 \le 0.1V$ or	2.0		V
V _{IL}	Input LOW Voltage		2.7–3.6	$V_O \ge V_{CC} - 0.1V$		0.8	V
V _{OH}	Output HIGH Voltage	A Port	2.7	$I_{OH} = -8mA$	2.4		V
			3.0	$I_{OH} = -32mA$	2.0		
		B Port	3.0	$I_{OH} = -12mA$	2.0		
			2.7–3.6	$I_{OH} = -100\mu A$	V _{CC} -0.2		
V_{OL}	Output LOW Voltage	A Port	2.7	$I_{OL} = 24mA$		0.5	V
			3.0	$I_{OL} = 16mA$		0.4	
			3.0	$I_{OL} = 32mA$		0.5	
			3.0	$I_{OL} = 64 \text{mA}$		0.55	
		B Port	3.0	$I_{OL} = 12mA$		0.8	
			2.7	$I_{OL} = 100 \mu A$		0.2	
I _{I(HOLD)} ⁽²⁾	Bushold Input Minimu	ım Drive	3.0	$V_1 = 0.8V$	75		μA
				$V_1 = 2.0V$	– 75		
I _{I(OD)} ⁽²⁾	Bushold Input Over-D	rive Current to	3.0	(3)	500		μA
	Change State			(4)	-500		
I _I	I _I Input Current		3.6	$V_1 = 5.5V$		10	μA
		Control Pins	3.6	$V_I = 0V \text{ or } V_{CC}$		±1	
		Data Pins	3.6	$V_I = 0V$		- 5	
				$V_I = V_{CC}$		1	
I _{OFF}	Power Off Leakage C	urrent	0	$0V \le V_I \text{ or } V_O \le 5.5V$		±100	μA
I _{PU/PD}	Power Up/Down, 3-S	TATE Current	0–1.5	$V_O = 0.5V$ to 3.0V, $V_I = GND$ or V_{CC}		±100	μA
I _{OZL}	3-STATE Output Leak	rage Current	3.6	$V_O = 0.5V$		- 5	μA
I _{OZL} ⁽²⁾	3-STATE Output Leak		3.6	$V_O = 0.0V$			μA
I _{OZH}	3-STATE Output Leak		3.6	$V_0 = 3.0V$		5	μA
I _{OZH} ⁽²⁾	3-STATE Output Leak	age Current	3.6	V _O = 3.6V		5	μA
I _{OZH} +	3-STATE Output Leak	age Current	3.6	$V_{CC} < V_O \le 5.5V$		10	μA
I _{CCH}	Power Supply Curren	t	3.6	Outputs High		0.19	mA
I _{CCL}	Power Supply Current		3.6	Outputs Low		5	mA
I _{CCZ}	Power Supply Current		3.6	Outputs Disabled		0.19	mA
I _{CCZ} +	Power Supply Current		3.6	$V_{CC} \le V_O \le 5.5V$, Outputs Disabled		0.19	mA
Δl _{CC}	Increase in Power Supply Current ⁽⁵⁾		3.6	One Input at V _{CC} – 0.6V, Other Inputs at V _{CC} or GND		0.2	mA

Notes:

- 2. Applies to Bushold versions only (74LVTH2245).
- 3. An external driver must source at least the specified current to switch from LOW-to-HIGH.
- 4. An external driver must sink at least the specified current to switch from HIGH-to-LOW.
- 5. This is the increase in supply current for each input that is at the specified voltage level rather than V_{CC} or GND.

Dynamic Switching Characteristics⁽⁶⁾

			Conditions	T,	A = 25°	С	
Symbol	Parameter	V _{CC} (V)	$C_L = 50 pF, R_L = 500 \Omega$	Min.	Тур.	Max.	Units
V _{OLP}	Quiet Output Maximum Dynamic V _{OL}	3.3	(7)		0.8		V
V _{OLV}	Quiet Output Minimum Dynamic V _{OL}	3.3	(7)		-0.8		V

Notes:

- 6. Characterized in SOIC package. Guaranteed parameter, but not tested.
- 7. Max number of outputs defined as (n). n-1 data inputs are driven 0V to 3V. Output under test held LOW.

AC Electrical Characteristics

		$T_A = -40$ °C to +85°C, $C_L = 50$ pF, $R_L = 500$ Ω				
		$V_{CC} = 3.3$	3V ± 0.3V	V _{CC} =	= 2.7V	
Symbol	Parameter	Min.	Max.	Min.	Max.	Units
t _{PLH}	Propagation Delay Data to B Port Output	1.2	4.4	1.2	5.1	ns
t _{PHL}		1.2	4.4	1.2	5.1	
t _{PLH}	Propagation Delay Data to A Port Output	1.2	3.6	1.2	4.0	ns
t _{PHL}		1.2	3.5	1.2	4.0	
t _{PZH}	Output Enable Time for B Port Output	1.3	6.2	1.3	7.3	ns
t _{PZL}		1.7	6.2	1.7	7.3	
t _{PZH}	Output Enable Time for A Port Output	1.3	5.5	1.3	7.1	ns
t _{PZL}		1.7	5.7	1.7	6.7	
t _{PHZ}	Output Disable Time for B Port Output	2.0	5.9	2.0	6.5	ns
t _{PLZ}		2.0	5.4	2.0	5.7	
t _{PHZ}	Output Disable Time for A Port Output	2.0	5.9	2.0	6.5	ns
t _{PLZ}		2.0	5.0	2.0	5.1	
t _{OSHL} , t _{OSLH}			1.0		1.0	ns
toshl, toslh	B Port Output to Output Skew ⁽⁸⁾		1.0		1.0	ns

Note:

8. Skew is defined as the absolute value of the difference between the actual propagation delay for any two separate outputs of the same device. The specification applies to any outputs switching in the same direction, either HIGH-to-LOW (t_{OSHL}) or LOW-to-HIGH (t_{OSLH}).

Capacitance⁽⁹⁾

Symbol	Parameter	Conditions	Typical	Units
C _{IN}	Input Capacitance	$V_{CC} = 0V$, $V_I = 0V$ or V_{CC}	4	pF
C _{I/O}	Input/Output Capacitance	$V_{CC} = 3.0V$, $V_{O} = 0V$ or V_{CC}	8	pF

Note:

9. Capacitance is measured at frequency f = 1MHz, per MIL-STD-883, Method 3012.

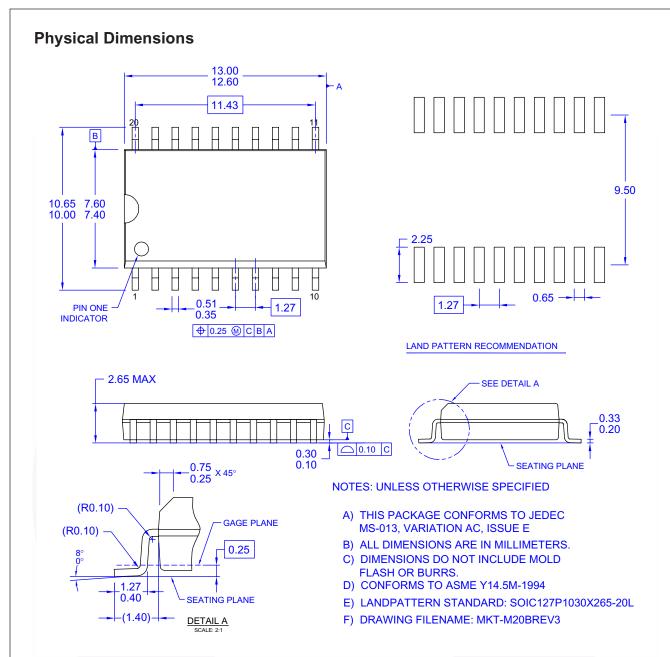
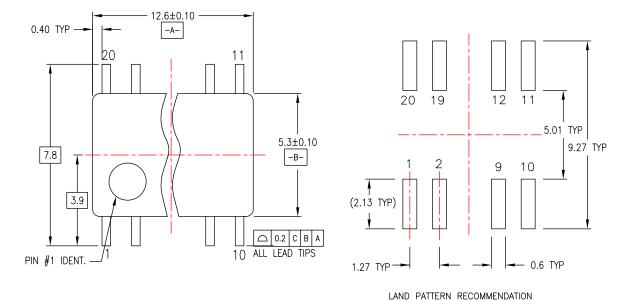


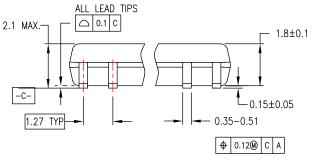
Figure 1. 20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300" Wide

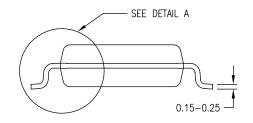
Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner without notice. Please note the revision and/or date on the drawing and contact a Fairchild Semiconductor representative to verify or obtain the most recent revision. Package specifications do not expand the terms of Fairchild's worldwide terms and conditions, specifically the warranty therein, which covers Fairchild products.

Always visit Fairchild Semiconductor's online packaging area for the most recent package drawings: http://www.fairchildsemi.com/packaging/

Physical Dimensions (Continued)



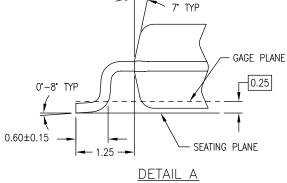




DIMENSIONS ARE IN MILLIMETERS

NOTES:

- A. CONFORMS TO EIAJ EDR-7320 REGISTRATION,
- ESTABLISHED IN DECEMBER, 1998. DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.

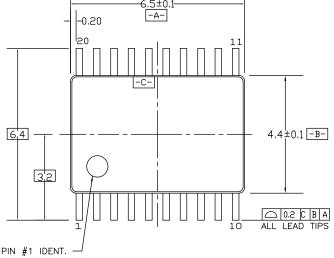


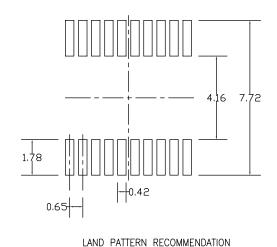
M20DREVC

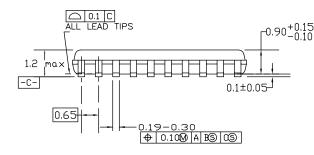
Figure 2. 20-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide

Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner without notice. Please note the revision and/or date on the drawing and contact a Fairchild Semiconductor representative to verify or obtain the most recent revision. Package specifications do not expand the terms of Fairchild's worldwide terms and conditions, specifically the warranty therein, which covers Fairchild products.

Always visit Fairchild Semiconductor's online packaging area for the most recent package drawings: http://www.fairchildsemi.com/packaging/









SEE DETAIL A

DIMENSIONS ARE IN MILLIMETERS

R0.09min GAGE PLANE -0.6±0.1 -0.6±0.1 -0.09min

DETAIL A

NOTES:

- A. CONFORMS TO JEDEC REGISTRATION MD-153, VARIATION AC, REF NOTE 6, DATE 7/93.
- B. DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLDS FLASH, AND TIE BAR EXTRUSIONS.
- D. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M, 1982.

MTC20REVD1

Figure 3. 20-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide

Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner without notice. Please note the revision and/or date on the drawing and contact a Fairchild Semiconductor representative to verify or obtain the most recent revision. Package specifications do not expand the terms of Fairchild's worldwide terms and conditions, specifically the warranty therein, which covers Fairchild products.

Always visit Fairchild Semiconductor's online packaging area for the most recent package drawings: http://www.fairchildsemi.com/packaging/





TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

ACEX®
Build it Now™
CorePLUS™
CROSSVOLT™
CTL™

Current Transfer Logic™ EcoSPARK[®] EZSWITCH™ *

FZ[®]

Fairchild[®]
Fairchild Semiconductor[®]
FACT Quiet Series[™]

FACT[®]
FAST[®]
FastvCore[™]
FlashWriter[®]*

FPS™ FRFET®

Global Power Resource^{sм}

Green FPS™

Green FPS™e-Series™

GTO™ *i-Lo™*IntelliMAX™
ISOPLANAR™

MegaBuck™
MICROCOUPLER™

MicroFET™
MicroPak™
MillerDrive™
Motion-SPM™
OPTOLOGIC®

OPTOPLANAR®

PDP-SPM™ Power220® POWEREDGE® Power-SPM™ PowerTrench®

Programmable Active Droop™
OFFT®

QFE1 QS™

QT Optoelectronics™
Quiet Series™
RapidConfigure™
SMART START™
SPM®
STEALTH™
SuperFET™
SuperSOT™3
SuperSOT™6

SuperSOT™8

SupreMOS™
SyncFET™
SYSTEM®
GENERAL
The Power Franchise®

Franchise
FinyBoost™
FinyBoost™
FinyLogic®
FinyOPTO™
FinyPower™
FinyPWM™
FinyWire™

µSerDes™ UHC[®] Ultra FRFET™ UniFET™ VCX™

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
- A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild Semiconductor. The datasheet is printed for reference information only.

Rev. I33

^{*} EZSWITCH™ and FlashWriter® are trademarks of System General Corporation, used under license by Fairchild Semiconductor.

ON Semiconductor and in are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdt/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and exp

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com N. American Technical Support: 800–282–9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910

Phone: 421 33 790 2910

Japan Customer Focus Center

Phone: 81–3–5817–1050

ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Bus Transceivers category:

Click to view products by ON Semiconductor manufacturer:

Other Similar products are found below:

74LS645N PI74LVCC3245AS 5962-8683401DA 5962-8968201LA 5962-8953501KA 5962-86834012A 5962-7802002MFA

TC74VCX164245(EL,F MC74LCX245MNTWG TC7WPB8306L8X,LF(S MM74HC245AMTCX 74LVX245MTC 74ALVC16245MTDX

74LCXR162245MTX 74LVXC3245MTCX 74VHC245M 74VHC245MX JM38510/65553BRA FXL2TD245L10X 74LVC1T45GM,115

74LVC245ADTR2G TC74AC245P(F) SNJ54LS245FK 74LVT245BBT20-13 74AHC245D.112 74AHCT245D.112

SN74LVCH16952ADGGR CY74FCT16245TPVCT 74AHCT245PW.118 74LV245DB.118 74LV245D.112 74LV245PW.112

74LVC2245APW.112 74LVCH245AD.112 SN75138NSR AP54RHC506ELT-R AP54RHC506BLT-R 74LVCR162245ZQLR

SN74LVCR16245AZQLR MC100EP16MNR4G MC100LVEP16MNR4G 714100R 74HCT643N MC100EP16DTR2G 5962-9221403MRA

74ALVC164245PAG 74FCT16245ATPAG 74FCT16245ATPVG 74FCT16245ETPAG 74FCT245CTSOG