

74F2243 Quad Bus Transceiver with 25Ω Series Resistors in the Outputs

General Description

The 74F2243 is a quad bus transmitter/receiver which can be used for 4-line asynchronous 2-way data communications between data busses. It is designed to drive the capacitive inputs of MOS memory drivers, address drivers, clock drivers, and bus-oriented transmitters/receivers.

The 25Ω series resistors in the outputs reduce ringing and eliminate the need for external resistors.

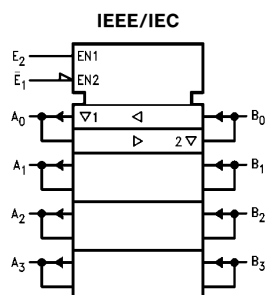
Features

- 25Ω series resistors in outputs eliminate the need for external resistors
- 2-Way asynchronous data bus communication
- TRI-STATE® outputs
- 12 mA source current
- Designed to drive the capacitive inputs of MOS devices
- Guaranteed 4000V minimum ESD protection

Commercial	Package Number	Package Description
74F2243SC (Note 1)	M14A	14-Lead (0.150" Wide) Molded Small Outline, JEDEC

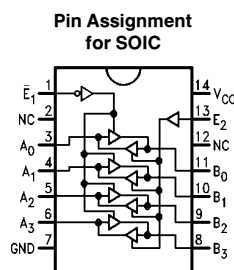
Note 1: Devices also available in 13" reel. Use suffix = SCX.

Logic Symbol



TL/F/9530-1

Connection Diagram



TL/F/9530-2

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Unit Loading/Fan Out

Pin Names	Description	74F	
		U.L. HIGH/LOW	Input I_{IH}/I_{IL} Output I_{OH}/I_{OL}
$\bar{E}_1$	Enable Input (Active LOW)	1.0/1.67	20 μA / -1 mA
E_2	Enable Input (Active HIGH)	1.0/1.67	20 μA / -1 mA
A_n, B_n	Inputs	3.5/2.67	70 μA / -1.6 mA
	Outputs	750/20	-15 mA/12 mA

Truth Table

Inputs		Inputs/Outputs	
$\bar{E}_1$	E_2	A_n	B_n
L	L	Input	B = A
L	H	N/A	N/A
H	L	Z	Z
H	H	A = B	Input

H = HIGH Voltage Level
 L = LOW Voltage Level
 Z = High Impedance
 N/A = Not Allowed

Absolute Maximum Ratings (Note 1)

Storage Temperature	−65°C to +150°C
Ambient Temperature under Bias	−55°C to +125°C
Junction Temperature under Bias	−55°C to +175°C
Plastic	−55°C to +150°C
V _{CC} Pin Potential to Ground Pin	−0.5V to +7.0V
Input Voltage (Note 2)	−0.5V to +7.0V
Input Current (Note 2)	−30 mA to +5.0 mA
Voltage Applied to Output in HIGH State (with V _{CC} = 0V)	
Standard Output	−0.5V to V _{CC}
TRI-STATE Output	−0.5V to +5.5V
Current Applied to Output in LOW State (Max)	twice the rated I _{OL} (mA)
ESD Last Passing Voltage (Min)	4000V

Note 1: Absolute maximum ratings are values beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

Note 2: Either voltage limit or current limit is sufficient to protect inputs.

Recommended Operating Conditions

Free Air Ambient Temperature	0°C to +70°C
Commercial	
Supply Voltage	+4.5V to +5.5V
Commercial	

DC Electrical Characteristics

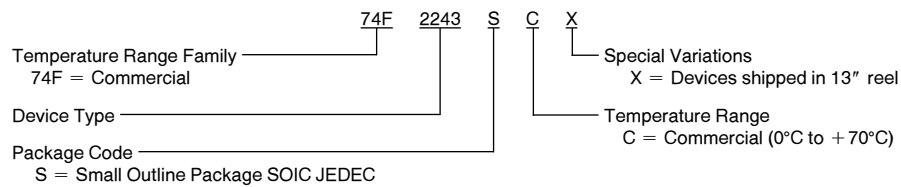
Symbol	Parameter	74F			Units	V _{CC}	Conditions
		Min	Typ	Max			
V _{IH}	Input HIGH Voltage	2.0			V		Recognized as a HIGH Signal
V _{IL}	Input LOW Voltage			0.8	V		Recognized as a LOW Signal
V _{CD}	Input Clamp Diode Voltage			−1.2	V	Min	I _{IN} = −18 mA
V _{OH}	Output HIGH Voltage 74F 10% V _{CC} 74F 10% V _{CC} 74F 5% V _{CC}	2.4 2.0 2.7			V	Min	I _{OH} = −3 mA (A _n , B _n) I _{OH} = −15 mA (A _n , B _n) I _{OH} = −3 mA (A _n , B _n)
V _{OL}	Output LOW Voltage			0.50 0.75	V	Min	I _{OL} = 1 mA (A _n , B _n) I _{OL} = 12 mA (A _n , B _n)
I _{IH}	Input HIGH Current			20	μA	Max	V _{IN} = 2.7V (E ₁ , E ₂)
I _{BVI}	Input HIGH Current Breakdown Test			100	μA	Max	V _{IN} = 7.0V (E ₁ , E ₂)
I _{BVIT}	Input HIGH Current Breakdown Test (I/O)			1.0	mA	Max	V _{IN} = 5.5V (A _n , B _n)
I _{IL}	Input LOW Current			−1.0	mA	Max	V _{IN} = 0.5V (E ₁ , E ₂)
I _{IH} + I _{OZH}	Output Leakage Current			70	μA	Max	V _{OUT} = 2.7V (A _n , B _n)
I _{IL} + I _{OZL}	Output Leakage Current			−1.6	mA	Max	V _{OUT} = 0.5V (A _n , B _n)
I _{OS}	Output Short-Circuit Current	−100		−225	mA	Max	V _{OUT} = 0V (A _n , B _n)
I _{CEx}	Output HIGH Leakage Current			250	μA	Max	V _{OUT} = V _{CC}
I _{CCH}	Power Supply Current		64	80	mA	Max	V _O = HIGH
I _{CCL}	Power Supply Current		64	90	mA	Max	V _O = LOW
I _{CCZ}	Power Supply Current		71	90	mA	Max	V _O = HIGH Z

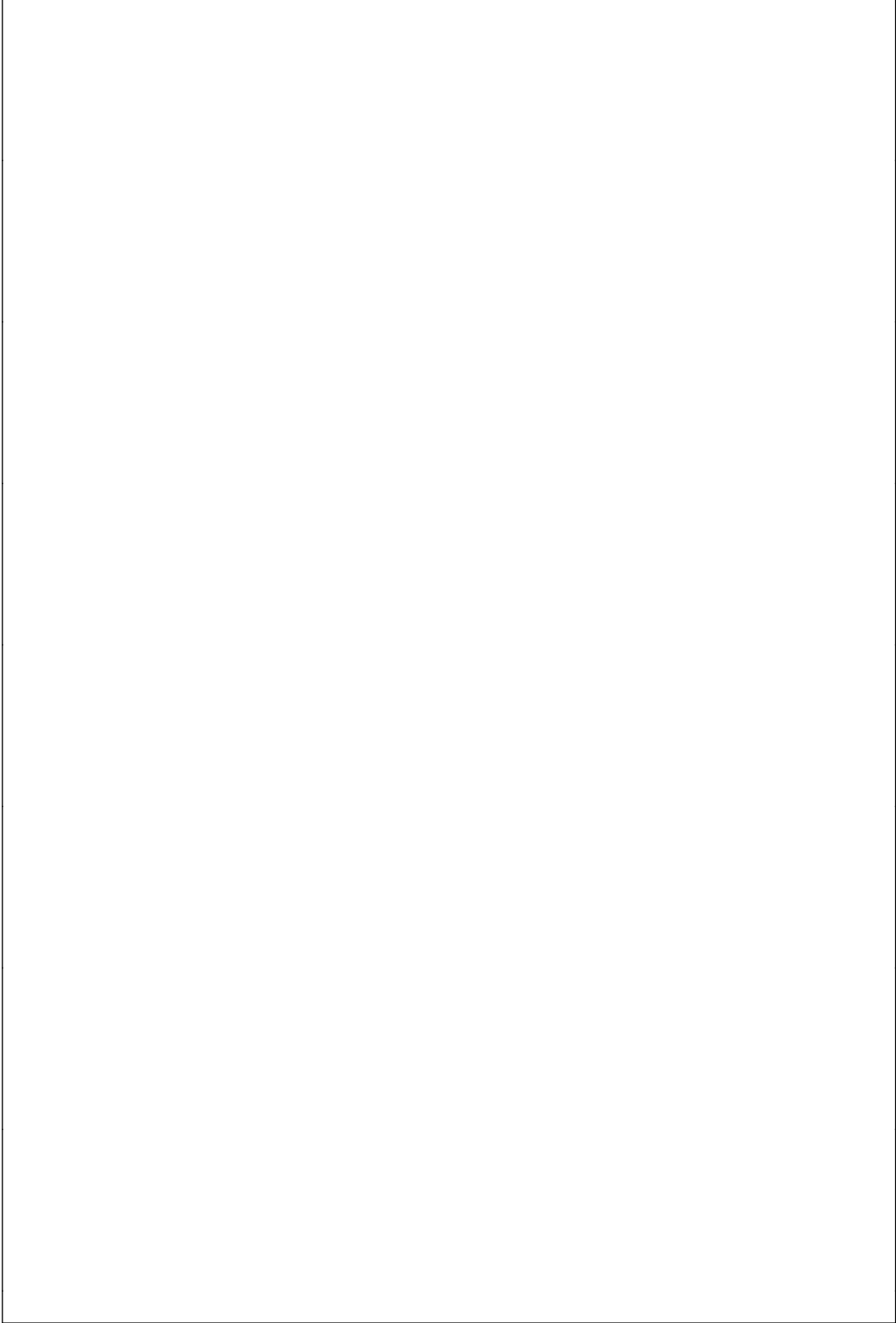
AC Electrical Characteristics

Symbol	Parameter	74F			74F		Units
		T _A = +25°C V _{CC} = +5.0V C _L = 50 pF			T _A , V _{CC} = Com C _L = 50 pF		
		Min	Typ	Max	Min	Max	
t _{PLH}	Propagation Delay	1.5		7.0	1.5	7.0	ns
t _{PHL}	A _n to B _n , B _n to A _n	2.5		8.0	2.0	8.0	
t _{PZH}	Output Enable Time	1.5		9.0	1.0	9.5	ns
t _{PZL}	$\bar{E}_1$ to B _n , E ₂ to A _n	2.5		11.5	2.5	12.0	
t _{PHZ}	Output Disable Time	1.5		9.0	1.0	9.5	
t _{PLZ}	$\bar{E}_1$ to B _n , E ₂ to A _n	1.5		8.5	1.5	9.5	

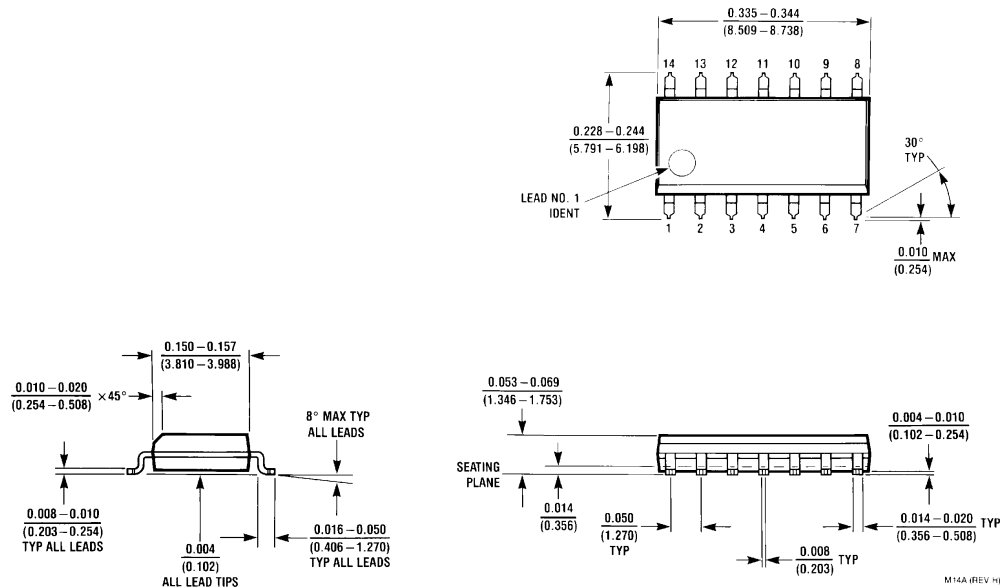
Ordering Information

The device number is used to form part of a simplified purchasing code where a package type and temperature range are defined as follows:





Physical Dimensions inches (millimeters)



14-Lead (0.150" Wide) Molded Small Outline Package, JEDEC (S)
NS Package Number M14A

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