

74ABT126 Quad Buffer with TRI-STATE® Outputs

General Description

The 74ABT126 contains four independent non-inverting buffers with TRI-STATE outputs.

Features

- Non-inverting buffers
- Output sink capability of 64 mA, source capability of 32 mA

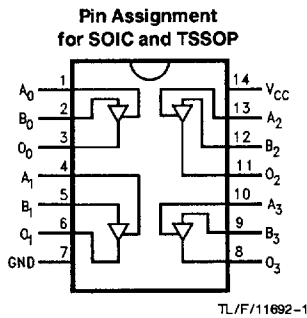
- Guaranteed latchup protection
- High impedance glitch free bus loading during entire power up and power down cycle
- Nondestructive hot insertion capability
- Disable time less than enable time to avoid bus contention

Commercial	Package Number	Package Description
74ABT126CSC (Note 1)	M14D	14-Lead (0.150" Wide) Molded Small Outline, JEDEC
74ABT126CSJ (Note 1)	M14D	14-Lead (0.300" Wide) Molded Small Outline, EIAJ
74ABT126CMTX (Notes 1, 2)	MTC14	14-Lead Molded Thin Shrink Small Outline, JEDEC

Note 1: Devices also available in 13" reel. Use suffix = SCX, SJX and MTCX.

Note 2: Contact factory for package availability

Connection Diagram



Pin Names	Description
A_n, B_n	Inputs
O_n	Outputs

Function Table

Inputs		Output
A_n	B_n	O_n
H	L	L
H	H	H
L	X	Z

H = HIGH Voltage Level
L = LOW Voltage Level
Z = HIGH Impedance
X = Immaterial

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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 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 Any Output in the Disabled or Power-Off State in the HIGH State	-0.5V to 5.5V -0.5V to V _{CC}
Current Applied to Output in LOW State (Max)	twice the rated I _{OL} (mA)

DC Latchup Source Current (Across Comm Operating Range)	-500 mA A -300 mA
Over Voltage Latchup (I/O)	10V

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 Commercial	-40°C to +85°C
Supply Voltage Commercial	+4.5V to +5.5V
Minimum Input Edge Rate Data Input	(ΔV/Δt) 50 mV/ns
Enable Input	100 mV/ns

DC Electrical Characteristics

Symbol	Parameter	ABT126			Units	V _{CC}	Conditions
		Min	Typ	Max			
V _{IH}	Input HIGH Voltage	2.0			V		Recognized HIGH Signal
V _{IL}	Input LOW Voltage			0.8	V		Recognized LOW Signal
V _{CD}	Input Clamp Diode Voltage			-1.2	V	Min	I _{IN} = -18 mA
V _{OH}	Output HIGH Voltage	74ABT	2.5		V	Min	I _{OH} = -3 mA
		74ABT	2.0		V	Min	I _{OH} = -32 mA
V _{OL}	Output LOW Voltage	74ABT		0.55	V	Min	I _{OL} = 64 mA
I _{IH}	Input HIGH Current			5 5	μA	Max	V _{IN} = 2.7V (Note 2) V _{IN} = V _{CC}
I _{BVI}	Input HIGH Current Breakdown Test			7	μA	Max	V _{IN} = 7.0V
I _{IL}	Input LOW Current			-5 -5	μA	Max	V _{IN} = 0.5V (Note 2) V _{IN} = 0.0V
V _{ID}	Input Leakage Test	4.75			V	0.0	I _{ID} = 1.9 μA, All Other Pins Grounded
I _{OZH}	Output Leakage Current			50	μA	0 - 5.5V	V _{OUT} = 2.7V; \overline{OE}_n = 2.0V
I _{OZL}	Output Leakage Current			-50	μA	0 - 5.5V	V _{OUT} = 0.5V; \overline{OE}_n = 2.0V
I _{OS}	Output Short-Circuit Current	-100		-275	mA	Max	V _{OUT} = 0.0V
I _{CEX}	Output High Leakage Current			50	μA	Max	V _{OUT} = V _{CC}
I _{ZZ}	Bus Drainage Test			100	μA	0.0	V _{OUT} = 5.5V; All Others GND
I _{CCH}	Power Supply Current			50	μA	Max	All Outputs HIGH
I _{CCL}	Power Supply Current			15	mA	Max	All Outputs LOW
I _{CCZ}	Power Supply Current			50	μA	Max	\overline{OE}_n = V _{CC} ; All Others at V _{CC} or Ground
I _{CCT}	Additional I _{CC} /Input	Outputs Enabled Outputs TRI-STATE Outputs TRI-STATE		1.5 1.5 50	mA mA μA	Max	V _I = V _{CC} - 2.1V Enable Input V _I = V _{CC} - 2.1V Data Input V _I = V _{CC} - 2.1V All Others at V _{CC} or Ground
I _{CCD}	Dynamic I _{CC} (Note 2)	No Load		0.1	mA/ MHz	Max	Outputs Open \overline{OE}_n = GND, (Note 1) One Bit Toggling, 50% Duty Cycle

Note 1: For 8 bits toggling, I_{CCD} < 0.8 mA/MHz.

Note 2: Guaranteed, but not tested.

AC Electrical Characteristics (SOIC and SSOP package)

Symbol	Parameter	74ABT			74ABT		Units
		T _A = +25°C V _{CC} = +5V C _L = 50 pF			T _A = -40°C to +85°C V _{CC} = 4.5V-5.5V C _L = 50 pF		
		Min	Typ	Max	Min	Max	
t _{PLH}	Propagation Delay	1.0		4.4	1.0	4.4	ns
t _{PHL}	Data to Outputs	1.0		4.6	1.0	4.6	
t _{PZH}	Output Enable	1.0		6.5	1.0	6.5	ns
t _{PZL}	Time	1.0		6.5	1.0	6.5	
t _{PHZ}	Output Disable	1.0		5.8	1.0	5.8	ns
t _{PLZ}	Time	1.0		5.5	1.0	5.5	

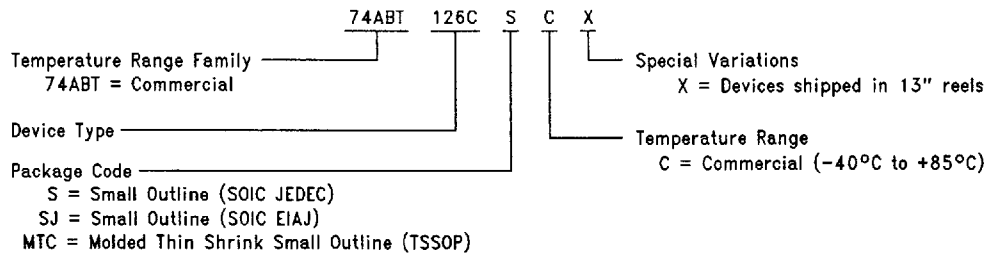
Capacitance

Symbol	Parameter	Typ	Units	Conditions T _A = 25°C
C _{IN}	Input Capacitance	5.0	pF	V _{CC} = 0V
C _{OUT} (Note 1)	Output Capacitance	9.0	pF	V _{CC} = 5.0V

Note 1: C_{OUT} is measured at frequency f = 1 MHz, per MIL-STD-883B, Method 3012

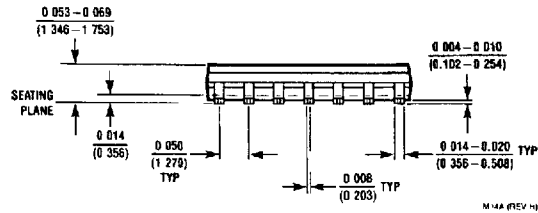
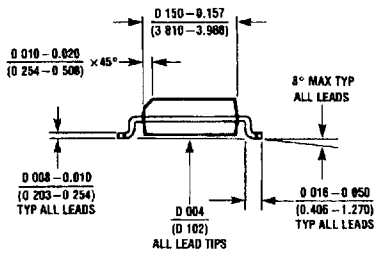
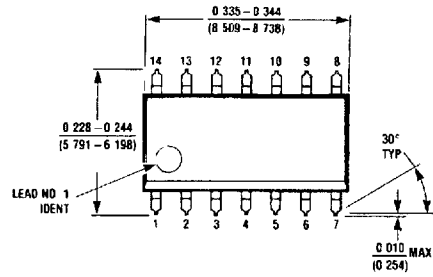
Ordering Information

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

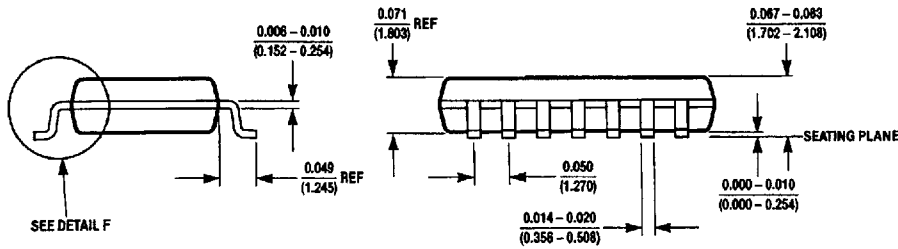
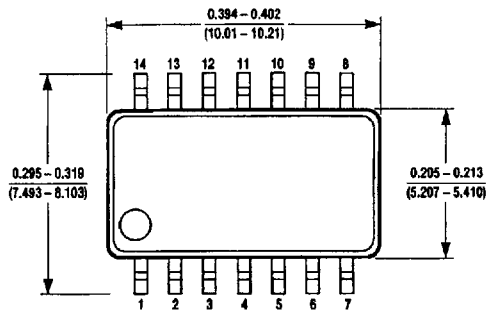
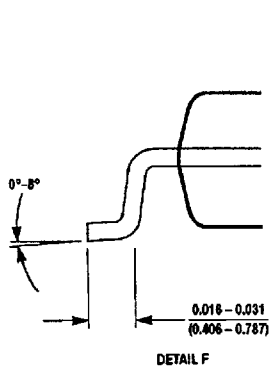


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Physical Dimensions inches (millimeters) (Continued)

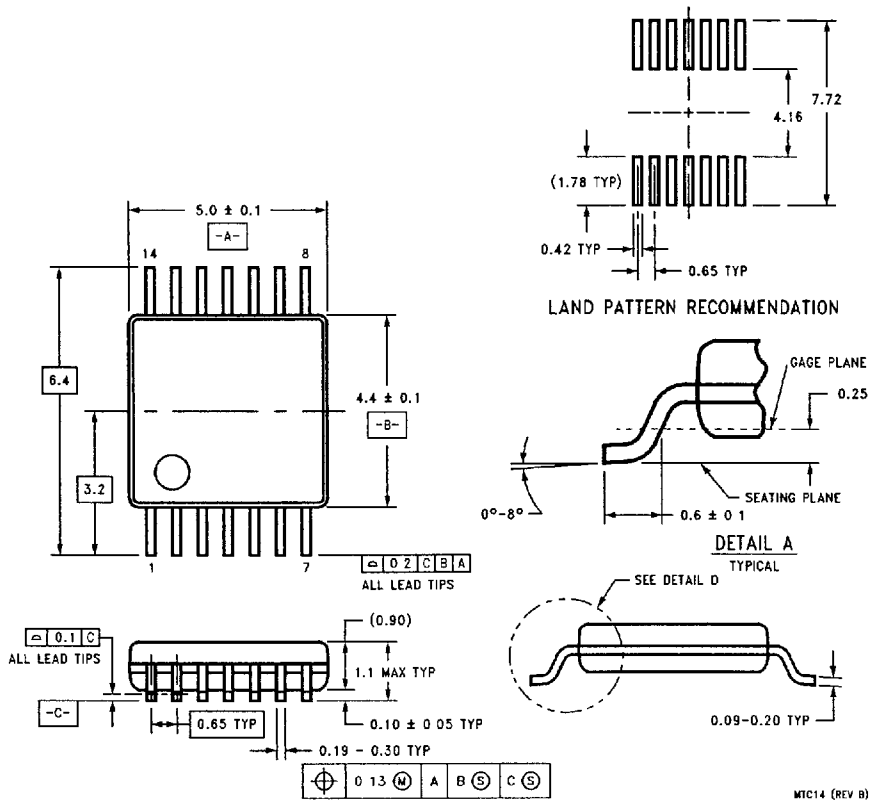


14-Lead Small Outline Integrated Circuit (S)
NS Package Number M14A



14-Lead Small Outline Package—EIAJ (SJ)
NS Package Number M14D

Physical Dimensions millimeters (Continued)



**14-Lead Molded Thin Shink Small Outline Package, JEDEC
NS Package Number MTC14**

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