

74F125

Quad Buffer (3-STATE)

Features

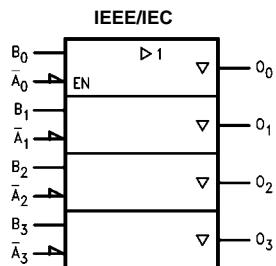
- High impedance base inputs for reduced loading

Ordering Code:

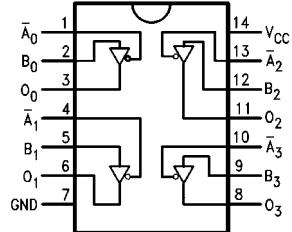
Order Number	Package Number	Package Description
74F125SC	M14A	14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-120, 0.150 Narrow
74F125SJ	M14D	14-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
74F125PC	N14A	14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide

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

Logic Symbol



Connection Diagram



Unit Loading/Fan Out

Pin Names	Description	U.L. HIGH/LOW	Input I_{IH}/I_{IL} Output I_{OH}/I_{OL}
\bar{A}_n, B_n O _n	Inputs Outputs	1.0/0.033 600/106.6 (80)	20 μ A–20 μ A –12 mA/64 mA (48 mA)

Function Table

Inputs		Output
\bar{A}_n	B _n	O
L	L	L
L	H	H
H	X	Z

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

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 +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}
3-STATE Output	-0.5V to +5.5V
Current Applied to Output	
in LOW State (Max)	twice the rated I_{OL} (mA)

Recommended Operating Conditions

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

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.

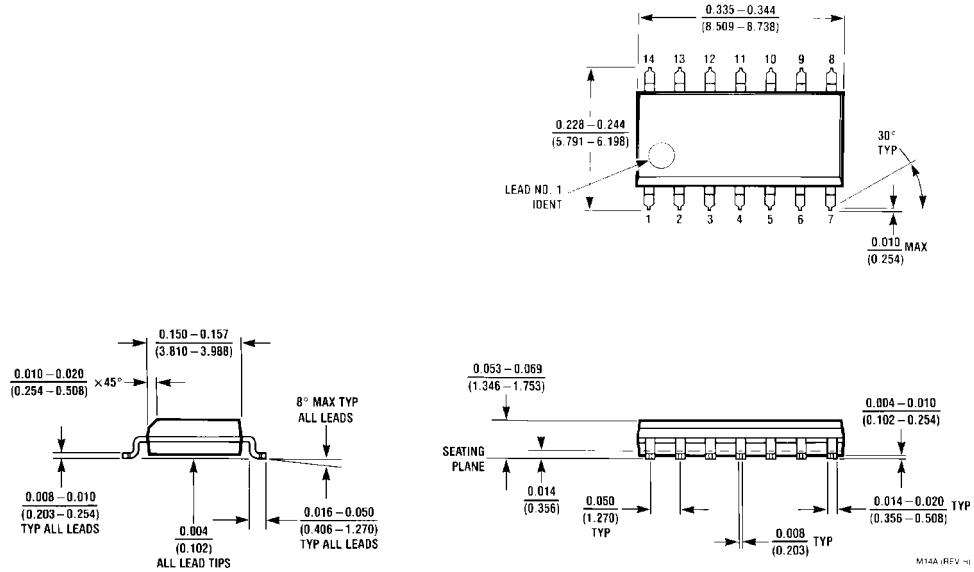
DC Electrical Characteristics

Symbol	Parameter	Min	Typ	Max	Units	V_{CC}	Conditions
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	10% V_{CC}	2.4				$I_{OH} = -3$ mA
	10% V_{CC}	2.0			V	Min	$I_{OH} = -12$ mA
	5% V_{CC}	2.7					$I_{OH} = -3$ mA
	5% V_{CC}	2.0					$I_{OH} = -15$ mA
V_{OL}	Output LOW Voltage	10% V_{CC}		0.55	V	Min	$I_{OL} = 64$ mA
I_{IH}	Input HIGH Current			20	μ A	Max	$V_{IN} = 2.7V$
I_{BVI}	Input HIGH Current Breakdown Test			100	μ A	0.0V	$V_{IN} = 7.0V$
I_{IL}	Input LOW Current			-20.0	μ A	Max	$V_{IN} = 0.5V$
I_{OZH}	Output Leakage Current			50	μ A	Max	$V_{OUT} = 2.7V$
I_{OZL}	Output Leakage Current			-50	μ A	Max	$V_{OUT} = 0.5V$
I_{OS}	Output Short-Circuit Current	-100		-225	mA	Max	$V_{OUT} = 0V$
I_{CEX}	Output HIGH Leakage Current			250	μ A	Max	$V_{OUT} = V_{CC}$
I_{ZZ}	Buss Drainage Test			500	μ A	0.0V	$V_{OUT} = 5.25V$
I_{CCH}	Power Supply Current	18.5	24.0	ma	Max	$V_O = HIGH$	
I_{CCL}	Power Supply Current	31.7	40.0	ma	Max	$V_O = LOW$	
I_{CCZ}	Power Supply Current	27.6	35.0	ma	Max	$V_O = HIGH Z$	

AC Electrical Characteristics

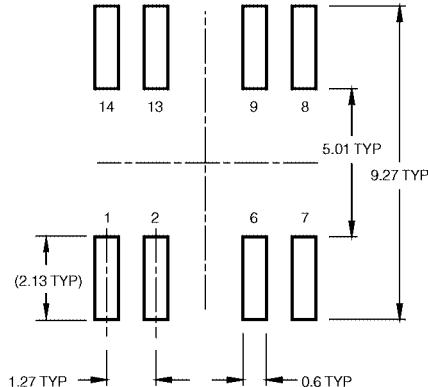
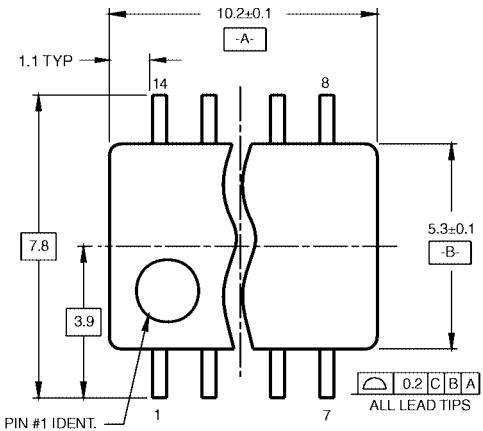
Symbol	Parameter	$T_A = +25^\circ C$ $V_{CC} = +5.0V$ $C_L = 50$ pF			$T_A = 0^\circ C$ to $+70^\circ C$ $V_{CC} = +5.0V$ $C_L = 50$ pF		Units
		Min	Typ	Max	Min	Max	
t_{PLH}	Propagation Delay	2.0	4.0	6.0	2.0	6.5	
t_{PHL}		3.0	4.6	7.5	3.0	8.0	ns
t_{PZH}	Output Enable Time	3.5	4.7	7.5	3.0	8.5	
t_{PZL}		3.5	5.3	8.0	3.5	9.0	ns
t_{PHZ}	Output Disable Time	1.5	3.9	5.5	1.5	6.0	
t_{PLZ}		1.5	4.0	6.0	1.5	6.5	ns

Physical Dimensions inches (millimeters) unless otherwise noted

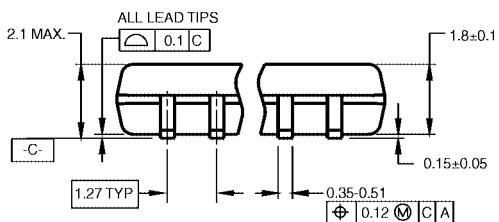


14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-120, 0.150 Narrow
Package Number M14A

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



LAND PATTERN RECOMMENDATION

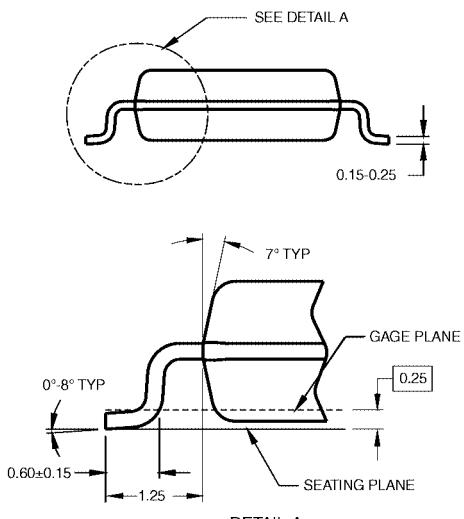


DIMENSIONS ARE IN MILLIMETERS

NOTES:

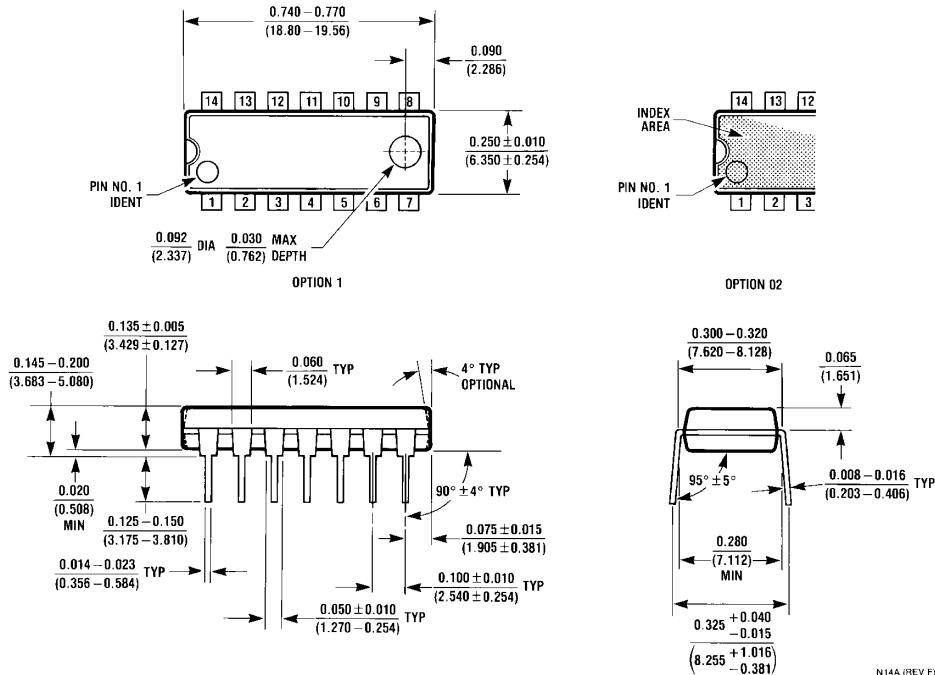
- A. CONFORMS TO EIAJ EDR-7320 REGISTRATION,
ESTABLISHED IN DECEMBER, 1998.
- B. DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD
FLASH, AND TIE BAR EXTRUSIONS.

M14DRevB1



**14-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
Package Number M14D**

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide
Package Number N14A

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