MOTOROLA

MC54/74F125
MC54/74F126

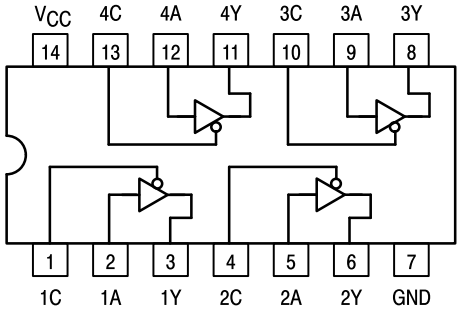
3-STATE QUAD BUFFERS

- High Impedance NPN Base Inputs for Reduced Loading

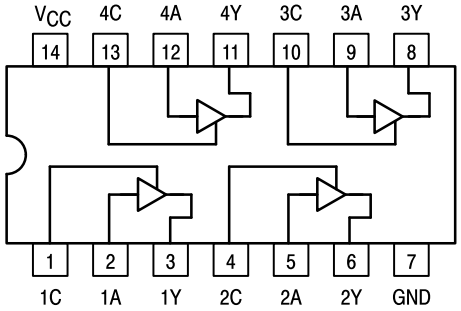
QUAD BUFFERS, 3-STATE

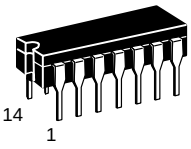
FAST™ SHOTTKY TTL

MC54/74F125

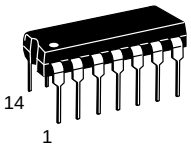


MC54/74F126

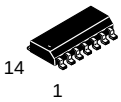




J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06



D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

MC54FXXXJ	Ceramic
MC74FXXXN	Plastic
MC74FXXXD	SOIC

GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V_{CC}	Supply Voltage	54, 74	4.5	5.0	5.5	V
T_A	Operating Ambient Temperature Range	54	–55	25	125	°C
		74	0	25	70	
I_{OH}	Output Current — High	54			–12	mA
		74			–15	
I_{OL}	Output Current — Low	54			48	mA
		74			64	

Function Table MC54/74F125

Inputs		Output
$\overline{C}$	A	Y
L	L	L
L	H	H
H	X	Z

Function Table MC54/74F126

Inputs		Output
C	A	Y
H	L	L
H	H	H
L	X	Z

L = LOW Voltage Level
H = HIGH Voltage Level
X = Don't Care
Z = High Impedance (off)

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

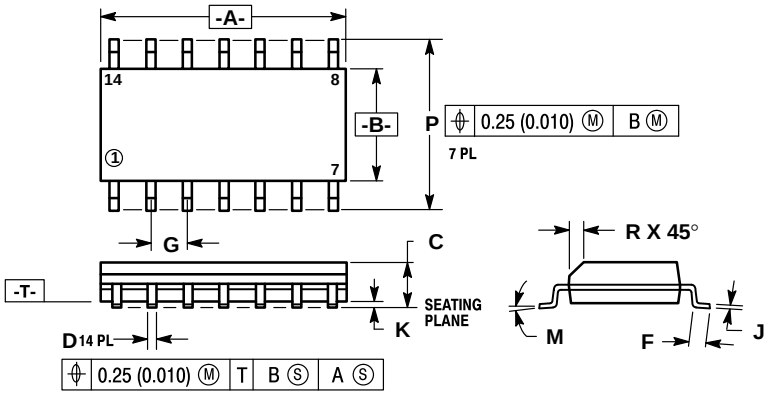
Symbol	Parameter		Limits Min	Typ	Max	Unit	Test Conditions	
V_{IH}	Input HIGH Voltage		2.0			V	Guaranteed Input HIGH Voltage	
V_{IL}	Input LOW Voltage				0.8	V	Guaranteed Input LOW Voltage	
V_{IK}	Input Clamp Diode Voltage				–1.2	V	I_{IN} = –18 mA	V_{CC} = MIN
V_{OH}	Output HIGH Voltage	54,74	2.4	3.4		V	I_{OH} = –3.0 mA	V_{CC} = 4.50 V
		74	2.7	3.4		V	I_{OH} = –3.0 mA	V_{CC} = 4.75 V
		54	2.0			V	I_{OH} = –12 mA	V_{CC} = 4.50 V
		74	2.0			V	I_{OH} = –15 mA	
V_{OL}	Output LOW Voltage	54			0.55	V	I_{OL} = 48 mA	V_{CC} = MAX
		74			0.55	V	I_{OL} = 64 mA	
I_{OZH}	Output Off Current HIGH				50	µA	V_{OUT} = 2.7 V	V_{CC} = MAX
I_{OZL}	Output Off Current LOW				–50	µA	V_{OUT} = 0.5 V	V_{CC} = MAX
I_{IH}	Input HIGH Current				20		V_{IN} = 2.7 V	V_{CC} = MAX
					100	µA	V_{IN} = 7.0 V	V_{CC} = 0 V
I_{IL}	Input LOW Current				–20	µA	V_{IN} = 0.5 V	V_{CC} = MAX
I_{OS}	Output Short Ciru'cuit Current Note 2		–100		–225	mA	V_{OUT} = GND	V_{CC} = MAX
I_{CC}	F125	I_{CCH}			24	mA	V_{CC} = MAX	
		I_{CCL}			40			
		I_{CCZ}			35			
	F126	I_{CCH}			30			
		I_{CCL}			48			
		I_{CCZ}			39			

NOTES:
1. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
2. Not more than one output should be shorted at a time, nor for more than 1 second.

AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter		54/74F T_A = +25 °C V_{CC} = +5.0 V C_L = 50 pF			54F T_A = 0°C to 70°C V_{CC} = 5.0 V ± 10% C_L = 50 pF		74F T_A = 0°C to + 70°C V_{CC} = 5.0 V ± 10% C_L = 50 pF		Unit
			Min	Typ	Max	Min	Max	Min	Max	
t_{PLH}	Propagation Delay,	F125	1.5	4.0	6.0	1.5	7.5	1.5	6.5	ns
t_{PHL}	nA to nY		3.0	5.5	7.5	3.0	9.0	3.0	8.0	
t_{PZH}	Output Enable Time		3.0	5.5	7.5	3.0	9.5	3.0	8.5	ns
t_{PZL}	to HIGH and LOW level		3.0	6.0	8.0	3.0	10	3.0	9.0	
t_{PHZ}	Output Disable Time		1.5	3.5	5.0	1.5	7.0	1.5	6.0	ns
t_{PLZ}	from HIGH and LOW level		1.5	3.5	5.5	1.5	7.0	1.5	6.0	
t_{PLH}	Propagation Delay,	F126	1.5	4.0	6.5	1.5	8.0	1.5	7.0	ns
t_{PHL}	nA to nY		3.0	5.5	8.0	3.0	9.5	3.0	8.5	
t_{PZH}	Output Enable Time		3.0	6.0	7.5	3.0	9.5	3.0	8.5	ns
t_{PZL}	to HIGH and LOW level		3.0	6.0	8.0	3.0	9.5	3.0	8.5	
t_{PHZ}	Output Disable Time		2.0	4.5	6.5	2.0	8.5	2.0	7.5	ns
t_{PLZ}	from HIGH and LOW level		3.0	5.5	7.5	3.0	9.0	3.0	8.0	

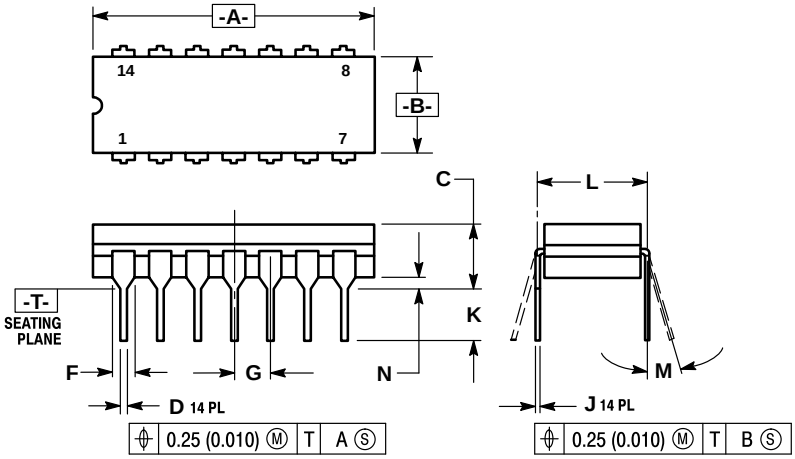
Case 751A-02 D Suffix
14-Pin Plastic
SO-14



NOTES:
1. DIMENSIONS "A" AND "B" ARE DATUMS AND "T" IS A DATUM SURFACE.
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
3. CONTROLLING DIMENSION: MILLIMETER.
4. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
5. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
6. 751A-01 IS OBSOLETE, NEW STANDARD 751A-02.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	8.55	8.75	0.337	0.344
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

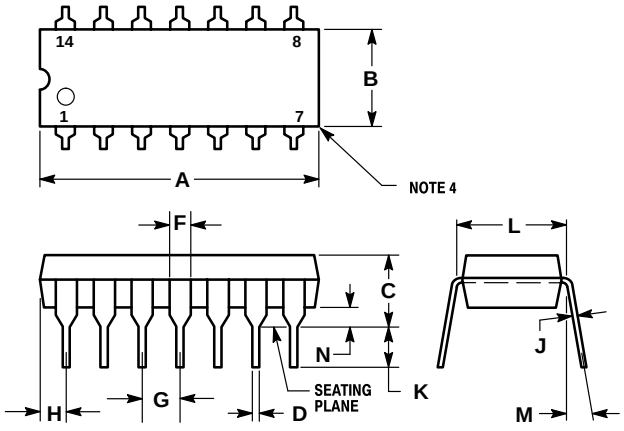
Case 632-08 J Suffix
14-Pin Ceramic Dual In-Line



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
4. DIM F MAY NARROW TO 0.76 (0.030) WHERE THE LEAD ENTERS THE CERAMIC BODY.
5. 632-01 THRU -07 OBSOLETE, NEW STANDARD 632-08.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	19.05	19.94	0.750	0.785
B	6.23	7.11	0.245	0.280
C	3.94	5.08	0.155	0.200
D	0.39	0.50	0.015	0.020
F	1.40	1.65	0.055	0.065
G	2.54 BSC		0.100 BSC	
J	0.21	0.38	0.008	0.015
K	3.18	4.31	0.125	0.170
L	7.62 BSC		0.300 BSC	
M	0°	15°	0°	15°
N	0.51	1.01	0.020	0.040

Case 646-06 N Suffix
14-Pin Plastic



NOTES:
1. LEADS WITHIN 0.13 mm (0.005) RADIUS OF TRUE POSITION AT SEATING PLANE AT MAXIMUM MATERIAL CONDITION.
2. DIMENSION "L" TO CENTER OF LEADS WHEN FORMED PARALLEL.
3. DIMENSION "B" DOES NOT INCLUDE MOLD FLASH.
4. ROUNDED CORNERS OPTIONAL.
5. 646-05 OBSOLETE, NEW STANDARD 646-06.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	18.16	19.56	0.715	0.770
B	6.10	6.60	0.240	0.260
C	3.69	4.69	0.145	0.185
D	0.38	0.53	0.015	0.021
F	1.02	1.78	0.040	0.070
G	2.54 BSC		0.100 BSC	
H	1.32	2.41	0.052	0.095
J	0.20	0.38	0.008	0.015
K	2.92	3.43	0.115	0.135
L	7.62 BSC		0.300 BSC	
M	0°	10°	0°	10°
N	0.39	1.01	0.015	0.039

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