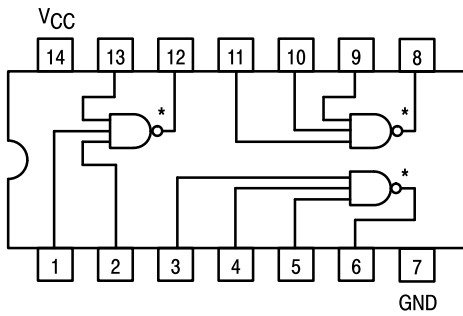




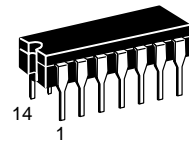
TRIPLE 3-INPUT NAND GATE



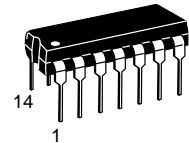
*OPEN COLLECTOR OUTPUTS

SN54/74LS12

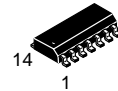
TRIPLE 3-INPUT NAND GATE
LOW POWER SCHOTTKY



J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06



D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

SN54LSXXJ Ceramic
SN74LSXXN Plastic
SN74LSXXD SOIC

GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V _{CC}	Supply Voltage	54	4.5	5.0	5.5	V
		74	4.75	5.0	5.25	
T _A	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
V _{OH}	Output Voltage — High	54, 74			5.5	V
I _{OL}	Output Current — Low	54			4.0	mA
		74			8.0	

SN54/74LS12

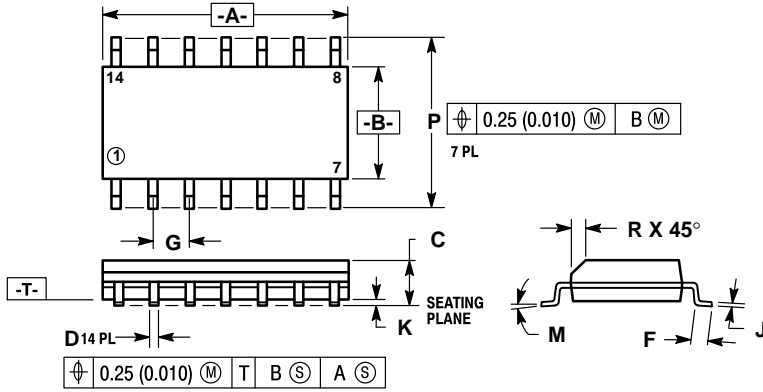
DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter		Limits			Unit	Test Conditions	
			Min	Typ	Max			
V_{IH}	Input HIGH Voltage		2.0			V	Guaranteed Input HIGH Voltage for All Inputs	
V_{IL}	Input LOW Voltage	54			0.7	V	Guaranteed Input LOW Voltage for All Inputs	
		74			0.8			
V_{IK}	Input Clamp Diode Voltage			-0.65	-1.5	V	$V_{CC} = \text{MIN}$, $I_{IN} = -18 \text{ mA}$	
I_{OH}	Output HIGH Current	54, 74			100	μA	$V_{CC} = \text{MIN}$, $V_{OH} = \text{MAX}$	
V_{OL}	Output LOW Voltage	54, 74		0.25	0.4	V	$I_{OL} = 4.0 \text{ mA}$	$V_{CC} = V_{CC} \text{ MIN}$, $V_{IN} = V_{IL} \text{ or } V_{IH}$ per Truth Table
		74		0.35	0.5	V	$I_{OL} = 8.0 \text{ mA}$	
I_{IH}	Input HIGH Current				20	μA	$V_{CC} = \text{MAX}$, $V_{IN} = 2.7 \text{ V}$	
					0.1	mA	$V_{CC} = \text{MAX}$, $V_{IN} = 7.0 \text{ V}$	
I_{IL}	Input LOW Current				-0.4	mA	$V_{CC} = \text{MAX}$, $V_{IN} = 0.4 \text{ V}$	
I_{CC}	Power Supply Current Total, Output HIGH Total, Output LOW				1.4	mA	$V_{CC} = \text{MAX}$	
					3.3			

AC CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Symbol	Parameter		Limits			Unit	Test Conditions	
			Min	Typ	Max			
t_{PLH}	Turn-Off Delay, Input to Output			17	32	ns	$V_{CC} = 5.0 \text{ V}$ $C_L = 15 \text{ pF}$, $R_L = 2.0 \text{ k}\Omega$	
t_{PHL}	Turn-On Delay, Input to Output			15	28	ns		

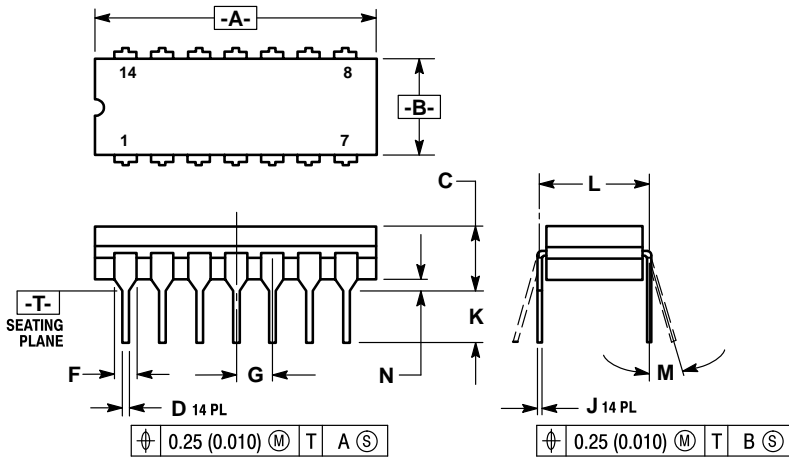
**Case 751A-02 D Suffix
14-Pin Plastic
SO-14**



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

DIM	MILLIMETERS		INCHES	
	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

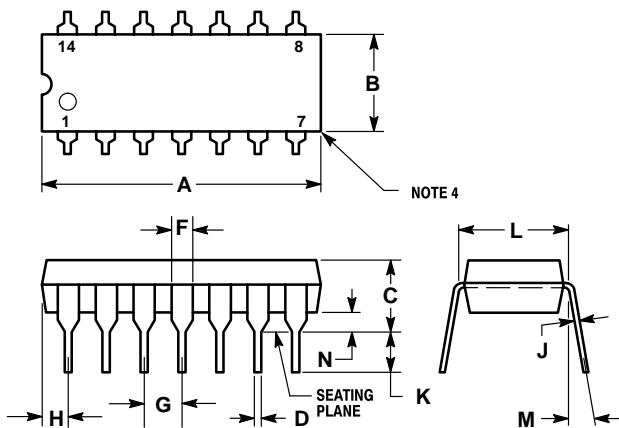
**Case 632-08 J Suffix
14-Pin Ceramic Dual In-Line**



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

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

DIM	MILLIMETERS		INCHES	
	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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