



# TRI-STATE OCTAL BUFFERS

The SN54/74LS795 thru SN54/74LS798 device types provide a second source for the 71/81LS95 thru 71/81LS98 series. These devices are octal low power Schottky versions of the 70/8095 thru 70/8098 3-STATE Hex Buffers. The LS795 and LS797 are noninverting and the LS796 and LS798 are inverting functions. On each buffer, one of the two inputs is used as a control line to gate the output into the high impedance state, while the other input passes the data through the buffer. On the LS795 and LS796 access is through a 2-input NOR gate, with all eight 3-STATE enable lines common. On the LS797 and LS798, four buffers are enabled from one common line and the other four buffers from another common line. On all device types the 3-STATE condition is achieved by applying a high logic level to the enable pins.

## TRUTH TABLES

**LS795**

INPUTS			OUTPUT
G1	G2	A	Y
H	X	X	Z
X	H	X	Z
L	L	H	H
L	L	L	L

**LS796**

INPUTS			OUTPUT
G1	G2	A	Y
H	X	X	Z
X	H	X	Z
L	L	H	L
L	L	L	H

**LS797**

INPUTS		OUTPUT
G	A	Y
H	X	Z
L	H	H
L	L	L

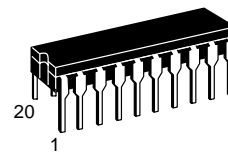
**LS798**

INPUTS		OUTPUT
G	A	Y
H	X	Z
L	H	L
L	L	H

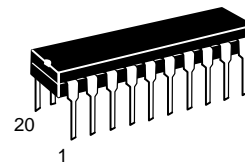
**SN54/74LS795**  
**SN54/74LS796**  
**SN54/74LS797**  
**SN54/74LS798**

## TRI-STATE OCTAL BUFFERS

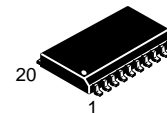
**LOW POWER SCHOTTKY**



**J SUFFIX**  
 CERAMIC  
 CASE 732-03



**N SUFFIX**  
 PLASTIC  
 CASE 738-03



**DW SUFFIX**  
 SOIC  
 CASE 751D-03

## ORDERING INFORMATION

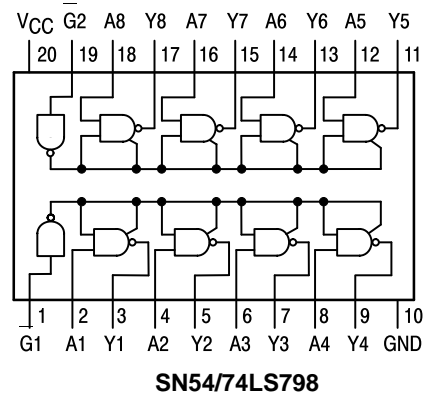
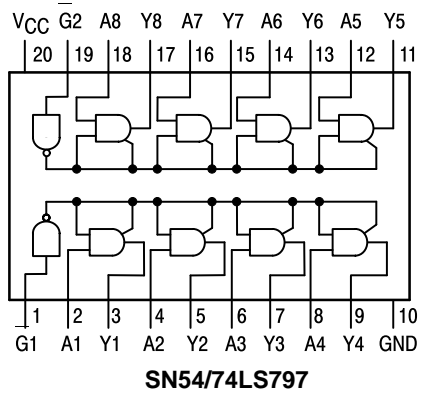
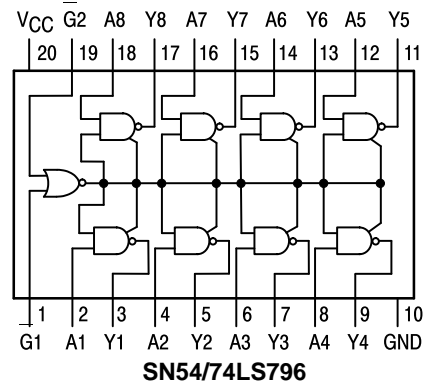
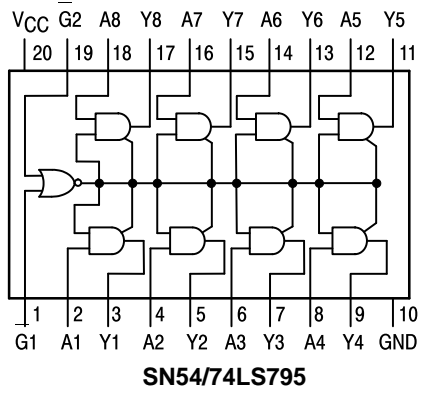
SN54LSXXXJ Ceramic  
 SN74LSXXXN Plastic  
 SN74LSXXXDW SOIC

## GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V <sub>CC</sub>	Supply Voltage	54	4.5	5.0	5.5	V
		74	4.75	5.0	5.25	
T <sub>A</sub>	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
I <sub>OH</sub>	Output Current — High	54			-2.6	mA
		74			-5.0	
I <sub>OL</sub>	Output Current — Low	54			8.0	mA
		74			16	

**SN54/74LS795 • SN54/74LS796**  
**SN54/74LS797 • SN54/74LS798**

**LOGIC DIAGRAMS**



# SN54/74LS795 THRU SN54/74LS798

## DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

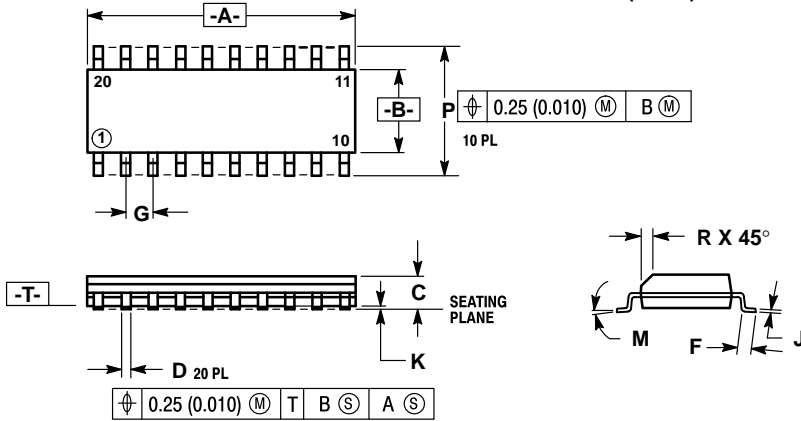
Symbol	Parameter		Limits			Unit	Test Conditions	
			Min	Typ	Max			
V <sub>IH</sub>	Input HIGH Voltage		2.0			V	Guaranteed Input HIGH Voltage for All Inputs	
V <sub>IL</sub>	Input LOW Voltage	54			0.7	V	Guaranteed Input LOW Voltage for All Inputs	
		74			0.8			
V <sub>IK</sub>	Input Clamp Diode Voltage			-0.65	-1.5	V	V <sub>CC</sub> = MIN, I <sub>IN</sub> = -18 mA	
V <sub>OH</sub>	Output HIGH Voltage	54	2.5	3.5		V	V <sub>CC</sub> = MIN, I <sub>OH</sub> = MAX	
		74	2.7	3.5		V		
V <sub>OL</sub>	Output LOW Voltage	54, 74		0.25	0.4	V	I <sub>OL</sub> = 8.0 mA	V <sub>CC</sub> = V <sub>CC</sub> MIN, V <sub>IN</sub> = V <sub>IL</sub> or V <sub>IH</sub> per Truth Table
		74		0.35	0.5	V	I <sub>OL</sub> = 16 mA	
I <sub>OZH</sub>	Output Off Current — HIGH				20	μA	V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 2.7 V	
I <sub>OZL</sub>	Output Off Current — LOW				-20	μA	V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 0.4 V	
I <sub>IH</sub>	Input HIGH Current				20	μA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 2.7 V	
					-0.1	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 7.0 V	
I <sub>IL</sub>	Input LOW Current A Input, Both G at 0.4 V				-0.4	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 0.4 V	
	G Input				-0.4			
I <sub>IL</sub>	A Input, Both G at 2.0 V				-20	μA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 0.5 V	
I <sub>OS</sub>	Short Circuit Current (Note 1)		-30		-130	mA	V <sub>CC</sub> = MAX	
I <sub>CC</sub>	Power Supply Current	LS795/LS797			26	mA	V <sub>CC</sub> = MAX	
		LS795/LS798			21	mA		

Note 1: Not more than one output should be shorted at a time, nor for more than 1 second.

## AC CHARACTERISTICS (T<sub>A</sub> = 25°C)

Symbol	Parameter	Limits						Unit	Test Conditions
		LS795/LS797			LS796/LS798				
		Min	Typ	Max	Min	Typ	Max		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay		11 15	16 22		6.0 13	10 17	ns	V <sub>CC</sub> = 5.0 V C <sub>L</sub> = 15 pF
t <sub>PZH</sub> t <sub>PZL</sub>	Output Enable Time		16 13	25 20		17 16	27 25	ns	
t <sub>PHZ</sub> t <sub>PLZ</sub>	Output Disable Time		13 19	20 27		13 18	20 27	ns	C <sub>L</sub> = 5.0 pF

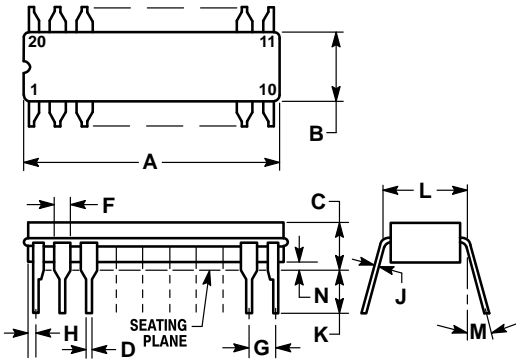
**Case 751D-03 DW Suffix  
20-Pin Plastic  
SO-20 (WIDE)**



- NOTES:
- 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.
  - 751D-01, AND -02 OBSOLETE, NEW STANDARD 751D-03.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	12.65	12.95	0.499	0.510
B	7.40	7.60	0.292	0.299
C	2.35	2.65	0.093	0.104
D	0.35	0.49	0.014	0.019
F	0.50	0.90	0.020	0.035
G	1.27 BSC		0.050 BSC	
J	0.25	0.32	0.010	0.012
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	10.05	10.55	0.395	0.415
R	0.25	0.75	0.010	0.029

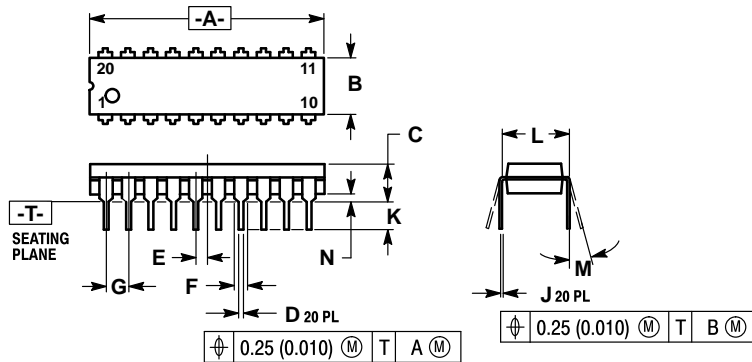
**Case 732-03 J Suffix  
20-Pin Ceramic Dual In-Line**



- NOTES:
- LEADS WITHIN 0.25 mm (0.010) DIA., TRUE POSITION AT SEATING PLANE, AT MAXIMUM MATERIAL CONDITION.
  - DIM L TO CENTER OF LEADS WHEN FORMED PARALLEL.
  - DIM A AND B INCLUDES MENISCUS.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	23.88	25.15	0.940	0.990
B	6.60	7.49	0.260	0.295
C	3.81	5.08	0.150	0.200
D	0.38	0.56	0.015	0.022
F	1.40	1.65	0.055	0.065
G	2.54 BSC		0.100 BSC	
H	0.51	1.27	0.020	0.050
J	0.20	0.30	0.008	0.012
K	3.18	4.06	0.125	0.160
L	7.62 BSC		0.300 BSC	
M	0°	15°	0°	15°
N	0.25	1.02	0.010	0.040

**Case 738-03 N Suffix  
20-Pin Plastic**



- NOTES:
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  - CONTROLLING DIMENSION: INCH.
  - DIMENSION "L" TO CENTER OF LEAD WHEN FORMED PARALLEL.
  - DIMENSION "B" DOES NOT INCLUDE MOLD FLASH.
  - 738-02 OBSOLETE, NEW STANDARD 738-03.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	25.66	27.17	1.010	1.070
B	6.10	6.60	0.240	0.260
C	3.81	4.57	0.150	0.180
D	0.39	0.55	0.015	0.022
E	1.27 BSC		0.050 BSC	
F	1.27	1.77	0.050	0.070
G	2.54 BSC		0.100 BSC	
J	0.21	0.38	0.008	0.015
K	2.80	3.55	0.110	0.140
L	7.62 BSC		0.300 BSC	
M	0°	15°	0°	15°
N	0.51	1.01	0.020	0.040

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SYMBOL	SW1	SW2
tPZH	Open	Closed
tPZL	Closed	Open
tPLZ	Closed	Closed

