

SN74BCT757
OCTAL BUFFER/DRIVER
WITH OPEN-COLLECTOR OUTPUTS

SCBS041D – NOVEMBER 1989 – REVISED NOVEMBER 1993

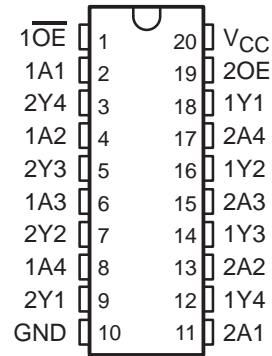
- BiCMOS Design Significantly Reduces I_{CCZ}
- ESD Protection Exceeds 2000 V Per MIL-STD-883C, Method 3015; Exceeds 200 V Using Machine Model ($C = 200$ pF, $R = 0$)
- Open-Collector Outputs Drive Bus Lines or Buffer Memory Address Registers
- Package Options Include Plastic Small-Outline (DW) Packages and Standard Plastic 300-mil DIPs (N)

description

This octal buffer and line driver is designed specifically to improve both the performance and density of 3-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters. This device provides complementary output-enable (OE and \overline{OE}) inputs and noninverting outputs.

The SN74BCT757 is characterized for operation from 0°C to 70°C.

DW OR N PACKAGE
(TOP VIEW)



FUNCTION TABLES

INPUTS		OUTPUT 1Y
$\overline{1OE}$	1A	
H	X	H
L	L	L
L	H	H

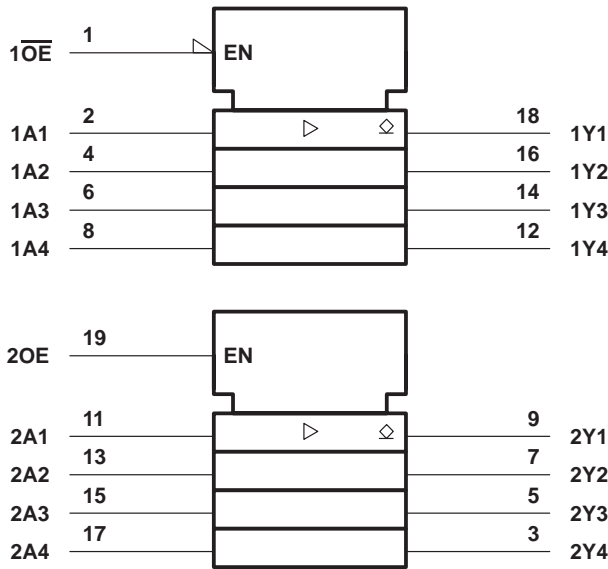
INPUTS		OUTPUT 2Y
2OE	2A	
L	X	H
H	L	L
H	H	H

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.



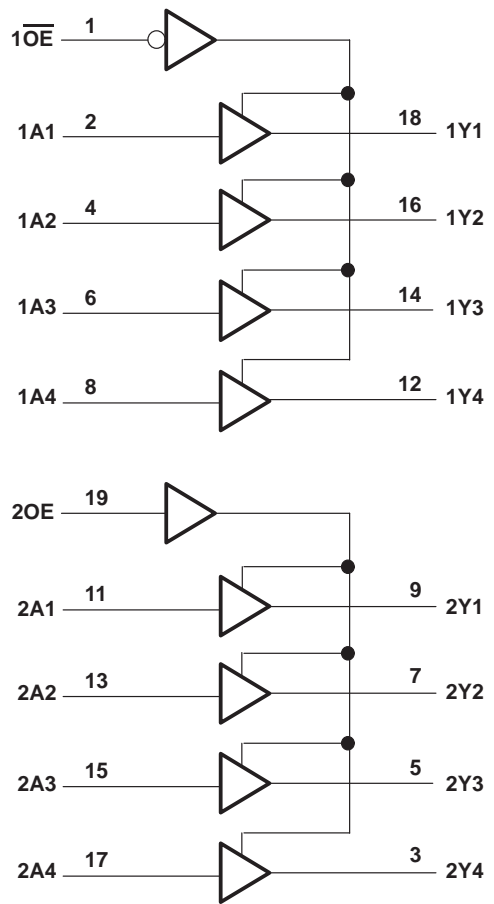
SN74BCT757
OCTAL BUFFER/DRIVER
WITH OPEN-COLLECTOR OUTPUTS
 SCBS041D – NOVEMBER 1989 – REVISED NOVEMBER 1993

logic symbol†



† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagram (positive logic)



absolute maximum ratings over operating free-air temperature range (unless otherwise noted)‡

Supply voltage range, V_{CC}	-0.5 V to 7 V
Input voltage range, V_I	-0.5 V to 7 V
Input current range, I_I	-30 mA to 5 mA
Voltage range applied to any output in the disabled or power-off state, V_O	-0.5 V to 5.5 V
Voltage range applied to any output in the high state, V_O	-0.5 V to V_{CC}
Current into any output in the low state, I_O	128 mA
Operating free-air temperature range	0°C to 70°C
Storage temperature range	-65°C to 150°C

‡ Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

recommended operating conditions (see Note 1)

	MIN	NOM	MAX	UNIT
V _{CC} Supply voltage	4.5	5	5.5	V
V _{IH} High-level input voltage	2			V
V _{IL} Low-level input voltage			0.8	V
V _{OH} High-level output voltage			5.5	V
I _{IK} Input clamp current			-18	mA
I _{OL} Low-level output current			64	mA
T _A Operating free-air temperature	0		70	°C

NOTE 1: Unused or floating inputs must be held high or low.

electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS		MIN	TYP†	MAX	UNIT
V _{IK}	V _{CC} = 4.5 V,	I _I = -18 mA			-1.2	V
V _{OL}	V _{CC} = 4.5 V,	I _{OL} = 64 mA		0.42	0.55	V
I _I	V _{CC} = 5.5 V,	V _I = 7 V			0.1	mA
I _{IH}	V _{CC} = 5.5 V,	V _I = 2.7 V			20	μA
I _{IL}	V _{CC} = 5.5 V,	V _I = 0.5 V			-1	mA
I _{OH}	V _{CC} = 4.5 V,	V _{OH} = 5.5 V			0.1	mA
I _{CC}	V _{CC} = 5.5 V,	Outputs open	Outputs high		34	mA
			Outputs low		77	
			OE and $\overline{\text{OE}}$ inactive		10	
C _i	V _{CC} = 5 V,	V _I = 2.5 V or 0.5 V			6	pF
C _o	V _{CC} = 5 V,	V _O = 2.5 V or 0.5 V			4	pF

† All typical values are at V_{CC} = 5 V, T_A = 25°C.

switching characteristics over recommended ranges of supply voltage and operating free-air temperature, C_L = 50 pF (unless otherwise noted) (see Note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V _{CC} = 5 V, T _A = 25°C			MIN	MAX	UNIT
			MIN	TYP	MAX			
t _{PLH}	A	Y	6.9	8.3	9.6	6.6	10.1	ns
t _{PHL}			2.4	4.2	6	2	6.6	
t _{PLH}	2OE	Y	11	14.8	17.9	10.8	19.7	ns
t _{PHL}			2.9	4.6	6.2	2.6	6.9	
t _{PLH}	1OE	Y	11.4	13.9	16.1	10	18	ns
t _{PHL}			4.4	6.1	7.8	4	8.5	

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

IMPORTANT NOTICE

Texas Instruments and its subsidiaries (TI) reserve the right to make changes to their products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgement, including those pertaining to warranty, patent infringement, and limitation of liability.

TI warrants performance of its semiconductor products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are utilized to the extent TI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.

CERTAIN APPLICATIONS USING SEMICONDUCTOR PRODUCTS MAY INVOLVE POTENTIAL RISKS OF DEATH, PERSONAL INJURY, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE ("CRITICAL APPLICATIONS"). TI SEMICONDUCTOR PRODUCTS ARE NOT DESIGNED, AUTHORIZED, OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT DEVICES OR SYSTEMS OR OTHER CRITICAL APPLICATIONS. INCLUSION OF TI PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE FULLY AT THE CUSTOMER'S RISK.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance or customer product design. TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used. TI's publication of information regarding any third party's products or services does not constitute TI's approval, warranty or endorsement thereof.