- **Open-Collector Version of ′BCT244**
- **Open-Collector Outputs Drive Bus Lines or Buffer Memory Address Registers**
- **ESD Protection Exceeds 2000 V Per MIL-STD-883C Method 3015**
- **Packages Options Include Plastic Small-Outline (DW) Packages, Ceramic Chip Carriers (FK) and Flatpacks (W), and Standard Plastic and Ceramic 300-mil DIPs (J, N)**
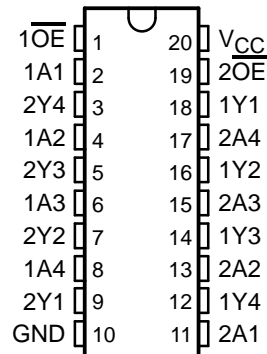
description

These octal buffers and line drivers are designed specifically to improve both the performance and density of 3-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters.
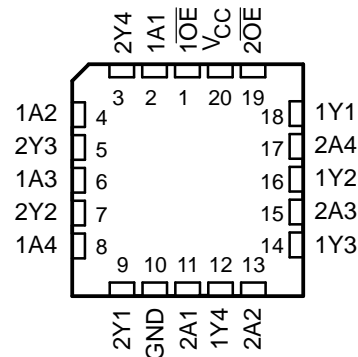
The ′BCT760 is organized as two 4-bit buffers/line drivers with separate output-enable ($\overline{OE}$) inputs. When $\overline{OE}$ is low, the device passes data from the A inputs to the Y outputs. When $\overline{OE}$ is high, the outputs are in the high-impedance state.

The SN54BCT760 is characterized for operation over the full military temperature range of −55°C to 125°C. The SN74BCT760 is characterized for operation from 0°C to 70°C.

SN54BCT760 . . . J OR W PACKAGE
SN74BCT760 . . . DW OR N PACKAGE
(TOP VIEW)

1$\overline{OE}$	1	20	V$_{CC}$
1A1	2	19	2$\overline{OE}$
2Y4	3	18	1Y1
1A2	4	17	2A4
2Y3	5	16	1Y2
1A3	6	15	2A3
2Y2	7	14	1Y3
1A4	8	13	2A2
2Y1	9	12	1Y4
GND	10	11	2A1

SN54BCT760 . . . FK PACKAGE
(TOP VIEW)

FUNCTION TABLE
(each buffer)

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

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TEXAS INSTRUMENTS

SN54BCT760, SN74BCT760
OCTAL BUFFERS/DRIVERS
WITH OPEN-COLLECTOR OUTPUTS

SCBS034B – JULY 1989 – REVISED NOVEMBER 1993
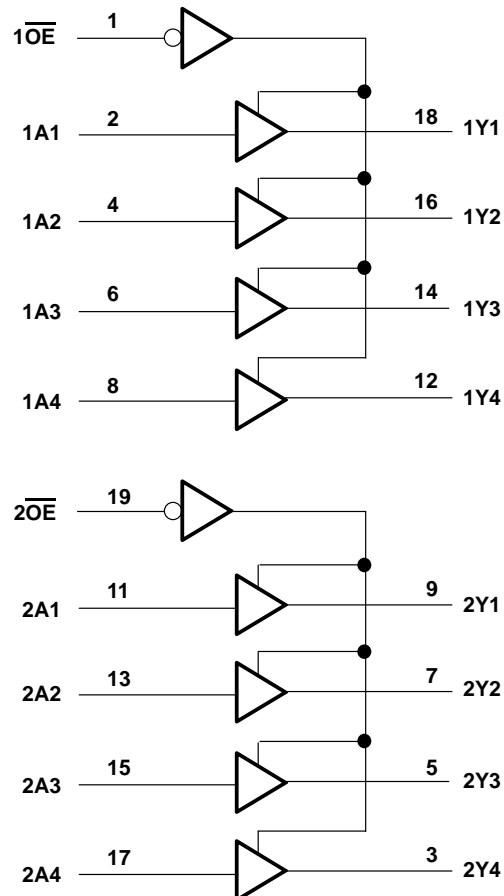
logic symbol†
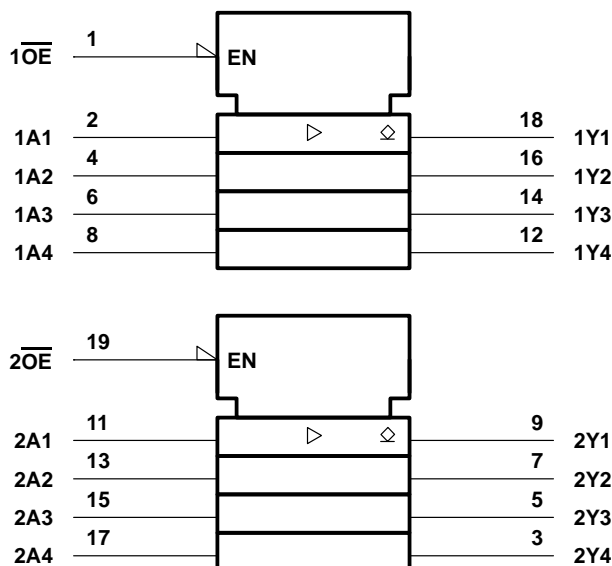
† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

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 (see Note 1) .... − 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: SN54BCT760 .... 96 mA
                                 SN74BCT760 .... 128 mA
Operating free-air temperature range: SN54BCT760 .... − 55°C to 125°C
                                             SN74BCT760 .... 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.

NOTE 1:   The negative input voltage rating may be exceeded if the input clamp current rating is observed.

recommended operating conditions

		SN54BCT760			SN74BCT760			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC}	Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage			0.8			0.8	V
V_{OH}	High-level output voltage			5.5			5.5	V
I_{IK}	Input clamp current			−18			−18	mA
I_{OL}	Low-level output current			48			64	mA
T_A	Operating free-air temperature	−55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS		SN54BCT760			SN74BCT760			UNIT
			MIN	TYP†	MAX	MIN	TYP†	MAX	
V_{IK}	V_{CC} = 4.5 V,	I_I = −18 mA			−1.2			−1.2	V
V_{OL}	V_{CC} = 4.5 V	I_{OL} = 48 mA		0.38	0.55				V
		I_{OL} = 64 mA					0.42	0.55	
I_I	V_{CC} = 5.5 V,	V_I = 7 V			0.1			0.1	mA
I_{IH}	V_{CC} = 5.5 V,	V_I = 2.7 V			20			20	µA
I_{IL}	V_{CC} = 5.5 V,	V_I = 0.5 V			−1			−1	mA
I_{OH}	V_{CC} = 4.5 V,	V_{OH} = 5.5 V			0.1			0.1	mA
I_{CC}	V_{CC} = 5.5 V, Outputs open	Outputs high		21	33		21	33	mA
		Outputs low		48	76		48	76	
		$\overline{OE}$ disabled		6	10		6	10	
C_i	V_{CC} = 5 V,	V_I = 2.5 V or 0.5 V		6			6		pF
C_o	V_{CC} = 5 V,	V_I = 2.5 V or 0.5 V		10			10		pF

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

switching characteristics (see Note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC} = 5 V, C_L = 50 pF, R_L = 500 Ω, T_A = 25°C			V_{CC} = 4.5 V to 5.5 V, C_L = 50 pF, R_L = 500 Ω, T_A = MIN to MAX‡				UNIT
			′BCT760			SN54BCT760		SN74BCT760		
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t_{PLH}	Any A	Y	6.3	8	9.5	6.3	11.1	6.3	10	ns
t_{PHL}			2.1	4.3	6.5	2.1	7.7	2.1	7.2	
t_{PLH}	$\overline{OE}$	Y	8.6	13	15.2	8.6	18.7	8.6	17.5	ns
t_{PHL}			3.2	6.2	8.9	3.2	10.4	3.2	9.9	

‡ For conditions shown as MIN or MAX, use the appropriate values specified under recommended operating conditions.
NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

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