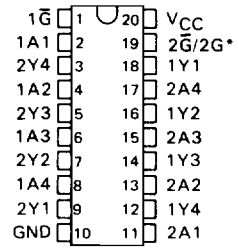
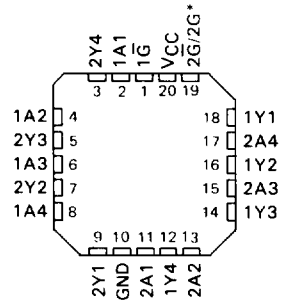
D2261, DECEMBER 1983

- **Open-Collector Outputs Drive Bus Lines or Buffer Memory Address Registers**
- **Eliminates the Need for 3-State Overlap Protection**
- **P-N-P Inputs Reduce DC Loading**
- **Dependable Texas Instruments Quality and Reliability**
- **Open-Collector Versions of 'AS240, 'AS241**

SN54AS' . . . J PACKAGE
SN74AS' . . . N PACKAGE
(TOP VIEW)



SN54AS' . . . FH PACKAGE
SN74AS' . . . FN PACKAGE
(TOP VIEW)



*2G̅ for 'AS756 or 2G for 'AS757

description

These octal bus transceivers are designed specifically to improve both the performance and density of three-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters by eliminating the need for three-state overlap protection. The designer has a choice of selected combinations of inverting and noninverting outputs, symmetrical $\overline{G}$ (active-low output control) inputs, and complementary G and $\overline{G}$ inputs. These devices feature high fan-out and improved fan-in.

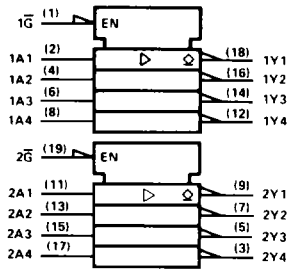
The SN54' family is characterized for operation over the full military temperature range of −55°C to 125°C. The SN74' family is characterized for operation from 0°C to 70°C.

PRODUCT PREVIEW

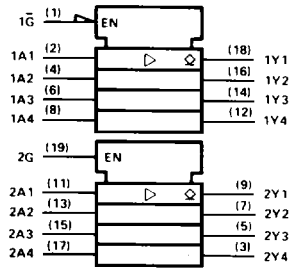
This document contains information on a product under development. Texas Instruments reserves the right to change or discontinue this product without notice.

logic symbols

'AS756

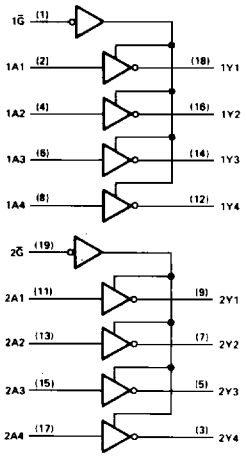


'AS757

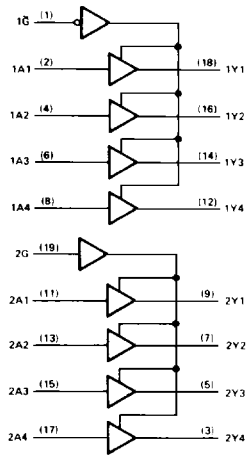


logic diagrams (positive logic)

'AS756



'AS757



Pin numbers shown are for J and N packages.

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

Supply voltage, V_{CC} . . . . . 7 V
Input voltage . . . . . 7 V
Off-state output voltage . . . . . 7 V
Operating free-air temperature range: SN54AS756, SN54AS757 . . . . . −55 °C to 125 °C
SN74AS756, SN74AS757 . . . . . 0 °C to 70 °C
Storage temperature range . . . . . −65 °C to 150 °C

recommended operating conditions

		SN54AS756 SN54AS757			SN74AS756 SN74AS757			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_{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		SN54AS756 SN54AS757			SN74AS756 SN74AS757			UNIT
				MIN	TYP†	MAX	MIN	TYP†	MAX	
V_{IK}		V_{CC} = 4.5 V,	I_I = −18 mA			−1.2			−1.2	V
I_{OH}		V_{CC} = 4.5 V,	V_{OH} = 5.5 V			0.1			0.1	mA
V_{OL}		V_{CC} = 4.5 V,	I_{OL} = 48 mA			0.55				V
		V_{CC} = 4.5 V,	I_{OL} = 64 mA						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 = 0.4 V		−0.3			−0.3		mA
I_{CC}	'AS756	V_{CC} = 5.5 V	Outputs high		16			16		mA
			Outputs low		51			51		
	'AS757		Outputs high		27			27		
			Outputs low		61			61		

† All typical values are at V_{CC} = 5 V, T_A = 25 °C
Additional information on these products can be obtained from the factory as it becomes available.

'AS756 switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC} = 4.5 V to 5.5 V, C_L = 50 pF, R_L = 500 Ω, T_A = MIN to MAX						UNIT
			SN54AS756			SN74AS756			
			MIN	TYP†	MAX	MIN	TYP†	MAX	
t_{PLH}	A	Y		20			20		ns
t_{PHL}				6			6		
t_{PLH}	$\overline{G}$	Y		22			22		ns
t_{PHL}				8			8		

'AS757 switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC} = 4.5 V to 5.5 V, C_L = 50 pF, R_L = 500 Ω, T_A = MIN to MAX						UNIT
			SN54AS757			SN74AS757			
			MIN	TYP†	MAX	MIN	TYP†	MAX	
t_{PLH}	A	Y		20			20		ns
t_{PHL}				6			6		
t_{PLH}	$1\overline{G}$	Y		22			22		ns
t_{PHL}				8			8		
t_{PLH}	2G	Y		23			23		ns
t_{PHL}				9			9		

†All typical values are at V_{CC} = 5 V, T_A = 25°C.
NOTE 1: For load circuit and voltage waveforms, see page 1-12.
Additional information on these products can be obtained from the factory as it becomes available.

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