查询SN74HC240N供应商

捷多邦,专业PCB打样工厂SN54时@240,5SN74HC240 OCTAL BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS SCLS128B - DECEMBER 1982 - REVISED MAY 1997

- 3-State Outputs Drive Bus Lines or Buffer Memory Address Registers
- High-Current Outputs Drive up to 15 LSTTL Loads
- Package Options Include Plastic (DW) and Ceramic Flat (W) Packages, Ceramic Chip Carriers (FK), and Standard Plastic (N) and Ceramic (J) 300-mil DIPs

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 'HC240 are organized as two 4-bit buffers/drivers with separate output-enable (\overline{OE}) inputs. When \overline{OE} is low, the device passes inverted data from the A inputs to the Y outputs. When \overline{OE} is high, the outputs are in the high-impedance state.

The SN54HC240 is characterized for operation over the full military temperature range of -55°C to 125°C. The SN74HC240 is characterized for operation from -40°C to 85°C.

SN74HC240 D	OR W PACKAGE W OR N PACKAGE VIEW)
	20] V <u>CC</u> 19] 20E

10E [1	20	J V _{CC}
1A1 [2	19] V <u>CC</u>] 20E
2Y4 [3] 1Y1
1A2 [4] 2A4
2Y3 [5	16] 1Y2
1A3 [6] 2A3
2Y2 [7	14] 1Y3
1A4 [8	13] 2A2
2Y1 [9	12] 1Y4
GND [10	11] 2A1

SN54HC240 ... FK PACKAGE (TOP VIEW)

		2Y4	1A1	10E	V _{CC}	2 <u>0</u> E			
1A2	\int	3	2	1	20	19	<u>а</u> г	1Y1	
2Y3	4 5					1	8L 7[2A4 1Y2	
1A3	6					1	6	1Y2	
2Y2 1A4]7]8					1	5 [4 [2A3 1Y3	
174	۱°	9	10	11	12	13	4 L	115	
-	2	2Y1	GND	2A1	174	2A2	25	c.5	

	FUNCTION TABLE (each buffer/driver)											
	INPU	JTS	OUTPUT									
1	OE	Α	Y									
	L	Н	L									
	L	L	Н									
	Н	Х	Z									

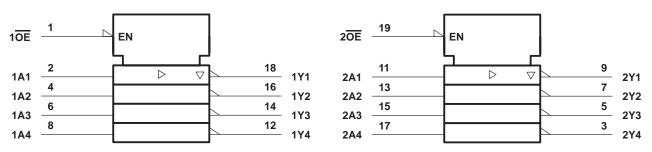
Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.



SN54HC240, SN74HC240 OCTAL BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS

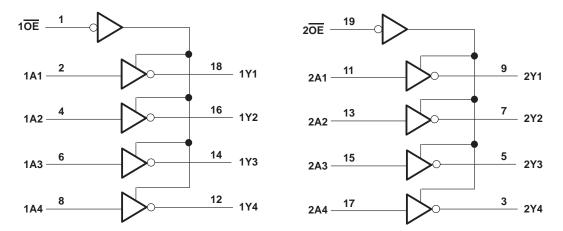
SCLS128B - DECEMBER 1982 - REVISED MAY 1997

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[‡]

Supply voltage range, V _{CC}	–0.5 V to 7 V
Input clamp current, I_{IK} (V _I < 0 or V _I > V _{CC}) (see Note 1)	
Output clamp current, I_{OK} ($V_O < 0$ or $V_O > V_{CC}$) (see Note 1)	
Continuous output current, $I_O (V_O = 0 \text{ to } V_{CC})$	
Continuous current through V _{CC} or GND	
Package thermal impedance, θ_{JA} (see Note 2): DW package	
N package	
Storage temperature range, T _{stg}	–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.

NOTES: 1. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

2. The package thermal impedance is calculated in accordance with JESD 51, except for through-hole packages, which use a trace length of zero.





SN54HC240, SN74HC240 **OCTAL BUFFERS AND LINE DRIVERS** WITH 3-STATE OUTPUTS SCLS128B – DECEMBER 1982 – REVISED MAY 1997

			SN	154HC24	10	SN74HC240			UNIT
			MIN	NOM	MAX	MIN	NOM	MAX	UNIT
VCC	Supply voltage		2	5	6	2	5	6	V
		$V_{CC} = 2 V$	1.5			1.5			
V_{IH}	High-level input voltage	$V_{CC} = 4.5 V$	3.15			3.15			V
		Λ CC = 6 Λ	4.2			4.2			
		$V_{CC} = 2 V$	0		0.5	0		0.5	
VIL	Low-level input voltage	$V_{CC} = 4.5 V$	0		1.35	0		1.35	V
		Λ CC = 6 Λ	0		1.8	0		1.8	
VI	Input voltage		0		VCC	0		VCC	V
VO	Output voltage		0		VCC	0		VCC	V
		V _{CC} = 2 V	0		1000	0		1000	
t _t	Input transition (rise and fall) time	V _{CC} = 4.5 V	0		500	0		500	ns
		VCC = 6 V	0		400	0		400	
Т _А	Operating free-air temperature		-55		125	-40		85	°C

recommended operating conditions

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

PARAMETER	TEST CONDITIONS		Vee	Т	A = 25°C	;	SN54H	IC240	SN74H	C240	UNIT
PARAMETER			Vcc	MIN	TYP	MAX	MIN	MAX	MIN	MAX	UNIT
			2 V	1.9	1.998		1.9		1.9		
		I _{OH} = -20 μA	4.5 V	4.4	4.499		4.4		4.4		
VOH	$V_I = V_{IH} \text{ or } V_{IL}$		6 V	5.9	5.999		5.9		5.9		V
		I _{OH} = -6 mA	4.5 V	3.98	4.3		3.7		3.84		
		I _{OH} = -7.8 mA	6 V	5.48	5.8		5.2		5.34		
	VI = VIH or VIL	I _{OL} = 20 μA	2 V		0.002	0.1		0.1		0.1	
			4.5 V		0.001	0.1		0.1		0.1	
VOL			6 V		0.001	0.1		0.1		0.1	V
		IOL = 6 mA	4.5 V		0.17	0.26		0.4		0.33	
		I _{OL} = 7.8 mA	6 V		0.15	0.26		0.4		0.33	
li li	$V_{I} = V_{CC} \text{ or } 0$		6 V		±0.1	±100		±1000		±1000	nA
I _{OZ}	VO = ACC or 0		6 V		±0.01	±0.5		±10		±5	μA
ICC	$V_I = V_{CC} \text{ or } 0,$	IO = 0	6 V			8		160		80	μA
Ci			2 V to 6 V		3	10		10		10	pF





SN54HC240, SN74HC240 OCTAL BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS SCLS128B – DECEMBER 1982 – REVISED MAY 1997

switching characteristics over recommended operating free-air temperature range, $C_L = 50 \text{ pF}$ (unless otherwise noted) (see Figure 1)

PARAMETER	FROM	то	Vaa	Τį	λ = 25°C	;	SN54H	IC240	SN74H	IC240	UNIT		
PARAMETER	(INPUT)	(OUTPUT)	Vcc	MIN	TYP	MAX	MIN	MAX	MIN	MAX	UNIT		
			2 V		50	100		150		125			
^t pd	А	Y	4.5 V		10	20		30		25	ns		
			6 V		9	17		25		21			
			2 V		75	150		225		190			
t _{en}	ŌĒ	Y	Y	Y	4.5 V		15	30		45		38	ns
			6 V		13	26		38		32			
			2 V		44	150		225		190			
^t dis	OE	Y	Y	4.5 V		22	30		45		38	ns	
			6 V		21	26		38		32			
			2 V		28	60		90		75			
tt		Y	Y	4.5 V		8	12		18		15	ns	
			6 V		6	10		15		13			

switching characteristics over recommended operating free-air temperature range, $C_L = 150 \text{ pF}$ (unless otherwise noted) (see Figure 1)

PARAMETER	FROM	то	Vaa	Τ,	ן = 25°C	;	SN54H	C240	SN74H	C240	UNIT
FARAMETER	(INPUT)	(OUTPUT)	Vcc	MIN	TYP	MAX	MIN	MAX	MIN	MAX	UNIT
			2 V		75	150		225		190	
^t pd	A	Y	4.5 V		15	30		45		38	ns
			6 V		13	26		38		32	
			2 V		100	200		300		250	
t _{en}	OE	Y	4.5 V		20	40		60		50	ns
			6 V		17	34		51		43	
			2 V		45	210		315		265	
tt		Y	4.5 V		17	42		63		53	ns
			6 V		13	36		53		45	

operating characteristics, $T_A = 25^{\circ}C$

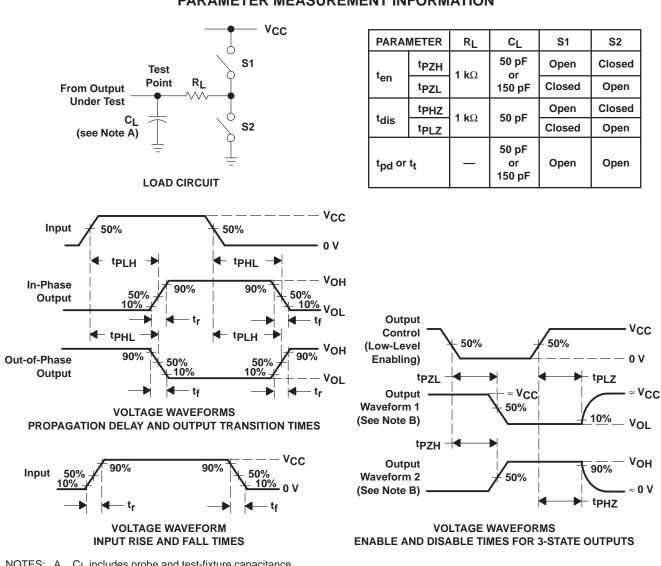
	PARAMETER	TEST CONDITIONS	TYP	UNIT
C _{pd}	Power dissipation capacitance per buffer/driver	No load	35	pF





SN54HC240, SN74HC240 **OCTAL BUFFERS AND LINE DRIVERS** WITH 3-STATE OUTPUTS

SCLS128B - DECEMBER 1982 - REVISED MAY 1997



PARAMETER MEASUREMENT INFORMATION

NOTES: A. CL includes probe and test-fixture capacitance.

- B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control. C. Phase relationships between waveforms were chosen arbitrarily. All input pulses are supplied by generators having the following
- characteristics: PRR \leq 1 MHz, Z_O = 50 Ω, t_r = 6 ns, t_f = 6 ns.
- D. The outputs are measured one at a time with one input transition per measurement.
- E. tPLZ and tPHZ are the same as tdis.
- F. tp71 and tp7H are the same as ten.
- G. tpLH and tpHL are the same as tpd.

Figure 1. Load Circuit and Voltage Waveforms





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.

Copyright © 1998, Texas Instruments Incorporated

