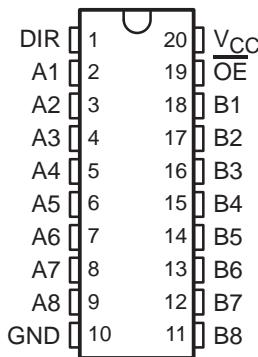
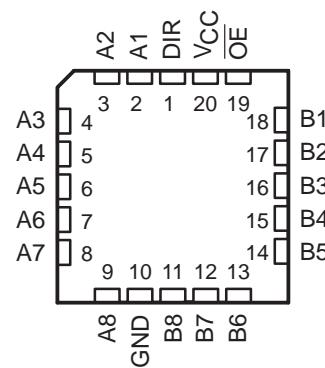


- Wide Operating Voltage Range of 2 V to 6 V
- High-Current 3-State Outputs Drive Bus Lines Directly or Up To 15 LSTTL Loads
- Low Power Consumption, 80- μ A Max I_{CC}
- Typical $t_{pd} = 12$ ns
- ± 6 -mA Output Drive at 5 V
- Low Input Current of 1 μ A Max

**SN54HC245 . . . J OR W PACKAGE
SN74HC245 . . . DB, DW, N, NS, OR PW PACKAGE
(TOP VIEW)**



**SN54HC245 . . . FK PACKAGE
(TOP VIEW)**



description/ordering information

These octal bus transceivers are designed for asynchronous two-way communication between data buses. The control-function implementation minimizes external timing requirements.

The devices allow data transmission from the A bus to the B bus or from the B bus to the A bus, depending on the logic level at the direction-control (DIR) input. The output-enable (OE) input can be used to disable the device so that the buses are effectively isolated.

ORDERING INFORMATION

T _A	PACKAGE [†]		ORDERABLE PART NUMBER	TOP-SIDE MARKING
–40°C to 85°C	PDIP – N	Tube of 20	SN74HC245N	SN74HC245N
	SOIC – DW	Tube of 25	SN74HC245DW	HC245
		Reel of 2000	SN74HC245DWR	
	SOP – NS	Reel of 2000	SN74HC245NSR	HC245
	SSOP – DB	Reel of 2000	SN74HC245DBR	HC245
	TSSOP – PW	Tube of 70	SN74HC245PW	HC245
		Reel of 2000	SN74HC245PWR	
		Reel of 250	SN74HC245PWT	
–55°C to 125°C	CDIP – J	Tube of 20	SNJ54HC245J	SNJ54HC245J
	CFP – W	Tube of 85	SNJ54HC245W	SNJ54HC245W
	LCCC – FK	Tube of 55	SNJ54HC245FK	SNJ54HC245FK

[†] Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are

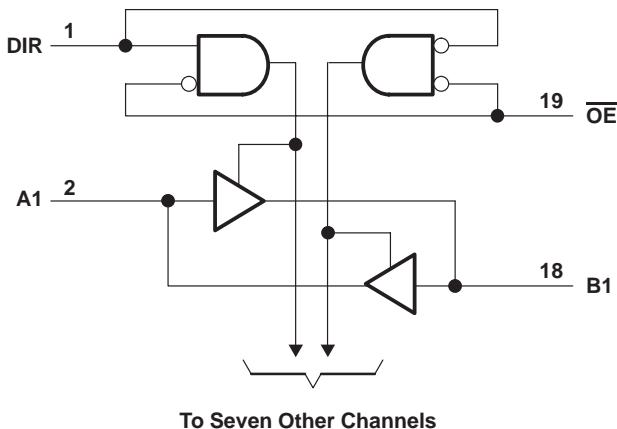
**SN54HC245, SN74HC245
OCTAL BUS TRANSCEIVERS
WITH 3-STATE OUTPUTS**

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FUNCTION TABLE

INPUTS		OPERATION
\overline{OE}	DIR	
L	L	B data to A bus
L	H	A data to B bus
H	X	Isolation

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 clamp current, I_{IK} ($V_I < 0$ or $V_I > V_{CC}$) (see Note 1)	± 20 mA
Output clamp current, I_{OK} ($V_O < 0$ or $V_O > V_{CC}$) (see Note 1)	± 20 mA
Continuous output current, I_O ($V_O = 0$ to V_{CC})	± 35 mA
Continuous current through V_{CC} or GND	± 70 mA
Package thermal impedance, θ_{JA} (see Note 2): DB package	70°C/W
DW package	58°C/W
N package	69°C/W
NS package	60°C/W
PW package	83°C/W
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 JEDEC 51-7.

**SN54HC245, SN74HC245
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recommended operating conditions (see Note 3)

			SN54HC245			SN74HC245			UNIT
			MIN	NOM	MAX	MIN	NOM	MAX	
V _{CC}	Supply voltage		2	5	6	2	5	6	V
V _{IH}	High-level input voltage	V _{CC} = 2 V	1.5			1.5			V
		V _{CC} = 4.5 V	3.15			3.15			
		V _{CC} = 6 V	4.2			4.2			
V _{IL}	Low-level input voltage	V _{CC} = 2 V		0.5			0.5		V
		V _{CC} = 4.5 V		1.35			1.35		
		V _{CC} = 6 V		1.8			1.8		
V _I	Input voltage		0	V _{CC}		0	V _{CC}		V
V _O	Output voltage		0	V _{CC}		0	V _{CC}		V
Δt/Δv	Input transition rise/fall time	V _{CC} = 2 V		1000			1000		ns
		V _{CC} = 4.5 V		500			500		
		V _{CC} = 6 V		400			400		
T _A	Operating free-air temperature		-55		125	-40		85	°C

NOTE 3: All unused inputs of the device must be held at V_{CC} or GND to ensure proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number SCBA004.

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

PARAMETER	TEST CONDITIONS	V _{CC}	T _A = 25°C			SN54HC245		SN74HC245		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
V _{OH}	V _I = V _{IH} or V _{IL}	I _{OH} = -20 μA	2 V	1.9	1.998	1.9		1.9		V
			4.5 V	4.4	4.499	4.4		4.4		
			6 V	5.9	5.999	5.9		5.9		
		I _{OH} = -6 mA	4.5 V	3.98	4.3	3.7		3.84		V
		I _{OH} = -7.8 mA	6 V	5.48	5.8	5.2		5.34		
			2 V	0.002	0.1	0.1		0.1		
V _{OL}	V _I = V _{IH} or V _{IL}	I _{OL} = 20 μA	4.5 V	0.001	0.1	0.1		0.1		V
			6 V	0.001	0.1	0.1		0.1		
			I _{OL} = 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		
I _I	DIR or \overline{OE}	V _I = V _{CC} or 0	6 V	±0.1	±100	±1000		±1000	nA	
I _{OZ}	A or B	V _O = V _{CC} or 0	6 V	±0.01	±0.5	±10		±5	μA	
I _{CC}		V _I = V _{CC} or 0, I _O = 0	6 V		8	160		80	μA	
C _i	DIR or \overline{OE}		2 V to 6 V	3	10	10		10	pF	

**SN54HC245, SN74HC245
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switching characteristics over recommended operating free-air temperature range, $C_L = 50 \text{ pF}$ (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC}	$T_A = 25^\circ\text{C}$			SN54HC245	SN74HC245	UNIT
				MIN	TYP	MAX	MIN	MAX	
t_{pd}	A or B	B or A	2 V	40	105		160	130	ns
			4.5 V	15	21		32	26	
			6 V	12	18		27	22	
t_{en}	\overline{OE}	A or B	2 V	125	230		340	290	ns
			4.5 V	23	46		68	58	
			6 V	20	39		58	49	
t_{dis}	\overline{OE}	A or B	2 V	74	200		300	250	ns
			4.5 V	25	40		60	50	
			6 V	21	34		51	43	
t_t		A or B	2 V	20	60		90	75	ns
			4.5 V	8	12		18	15	
			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 (INPUT)	TO (OUTPUT)	V_{CC}	$T_A = 25^\circ\text{C}$			SN54HC245	SN74HC245	UNIT
				MIN	TYP	MAX	MIN	MAX	
t_{pd}	A or B	B or A	2 V	54	135		200	170	ns
			4.5 V	18	27		40	34	
			6 V	15	23		34	29	
t_{en}	\overline{OE}	A or B	2 V	150	270		405	335	ns
			4.5 V	31	54		81	67	
			6 V	25	46		69	56	
t_t		A or B	2 V	45	210		315	265	ns
			4.5 V	17	42		63	53	
			6 V	13	36		53	45	

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

PARAMETER	TEST CONDITIONS	TYP	UNIT
C_{pd} Power dissipation capacitance per transceiver	No load	40	pF