



overview

The 74HC245TS is a high-speed CMOS device that is pin-compatible with the Low-Power Schottky TTL (LSTTL) family.

74HC245TS is a three-state output, eight-way signal bidirectional transceiver, with two control terminals (/OE, DIR); where DIR is the data flow controller, when DIR is high, the data flow direction is A→B; when DIR is low level, the data flow direction is B→A; /OE is the output state control terminal, when /OE is high level, the output is high impedance state; when /OE is low level, the data is normally transmitted.

74HC245TS is mainly used in LED screen display and other consumer electronic products to increase drive.

The 74HC245TS has an operating temperature range of -40°C to 85°C.

features

• Adopt COMS technology • Wide

voltage working range: 3.0V~5.0V • Bi-directional

three-state output • Eight-wire bi-directional

transceiver

• ESD HBM>4KV

• Package used: TSSOP-20

Applications

• Suitable for LED single and double color display modules, the maximum number of loads is greater than or

equal to 100. • Full-color LED display module.

Pin Diagram and Pin Description

Pin Diagram		serial number	pin name	Pin Description
YOU	1	1	DIR	DIR direction control terminal
A1	2	2-9	A1~A8	Data input/output terminals
A2	3			
A3	4			
A4	5			
A5	6			
A6	7			
A7	8			
A8	9			
GND	10	10	GND	logic ground
		11-18	B8~B1	Data input/output terminals
		19	/OE	output enable terminal
		20	VCC	logic power supply terminal

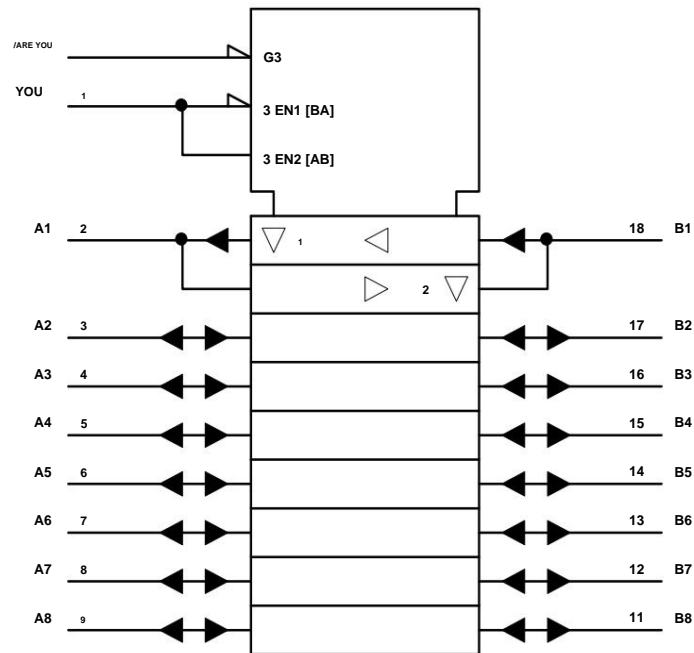


Absolute Maximum Ratings

parameter	symbol	Test Conditions	value	unit
voltage	V _{CC}		-0.5 ~ 7	IN
Input Clamp Current	I _{IK}	V _I < 0 or V _I > V _{CC}	±20	mA
Output Clamp Current	I _{OC}	V _O < 0 or V _O > V _{CC}	±20	mA
Continuous output current	I _O	V _O = 0 to V _{CC}	±90	mA
Power loss	PD		<400	mW
storage temperature range	T _{stg}		-65 ~ 150	°C

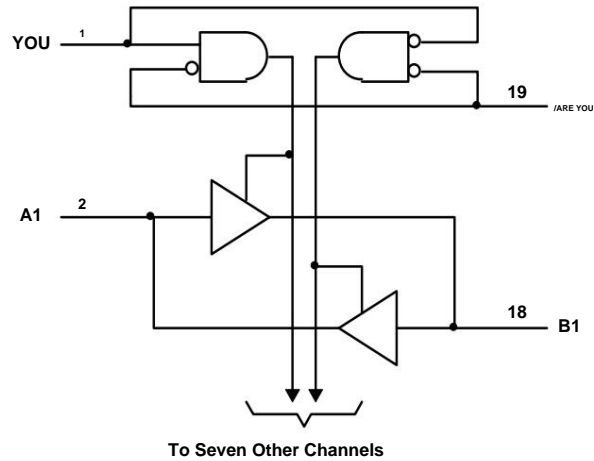
logic part

ü Logical symbols





Logic)



Recommended working conditions

parameter	Test Conditions	74HC245TS			unit
		Min	Typical	Max	
Supply voltage (Vcc)		2.56			
Input high level (VIH)	Vcc = 2V	1.5			IN
	Vcc = 4.5V	3.15			
	Vcc = 6V	4.2			
Input low level (VIL)	Vcc = 2V	0		0.5	IN
	Vcc = 4.5V	0		1.35	
	Vcc = 6V	0		1.8	
Input Voltage (VI)		0		Vcc	IN
Output Voltage (Vo)		0		Vcc	IN
Operating Temperature (TA)		-40		85	°C

electrical characteristics

parameter	Test Conditions	Vcc	TA = 25°C			unit
			Min	Typ	Max	
VOH	VI = VIH or VIL	IOH = -20uA	2V	1.9	1.998	IN
			4.5V	4.4	4.499	
			6V	5.9	5.999	
		IOH = -6mA	4.5V	3.98	4.3	
			6V	5.48	5.8	
VOL	VI = VIH or VIL	IOH = 20uA	2V	-	0.002	IN
			4.5V	-	0.001	
			6V	-	0.001	



Shenzhen Fuman Electronics Group Co., Ltd.

SHENZHEN FINE MAD ELECTRONICS GROUP CO., LTD.

Octal Non-Phase 3-State Bus Transceivers

74HC245TS (Document No.: S&CIC1482)

		IOH = 6mA IOH	4.5V	-	0.17	0.26	
		= 7.8mA	6V	-	0.15	0.26	
Output port drive current	John		5V	54		68 mA	
	IOL		5V	80		95 mA	
II DIR or /OE VI = Vcc or 0			6V	-	±0.1	±100	nA
IOZ A or B VO = VCC or 0			6V		±0.01	±0.5	uA
Icc	VI = Vcc or 0, IO = 0		6V	-	-	8	uA
Ci DIR or /OE			2V to 6V	-	3	10	pF

Switching Characteristics (CL=50pF, unless otherwise noted.)

parameter	FROM (enter)	TO (output)	VCC	TA = 25°C Min			unit
				Typ	Max		
tpd	A or B	B or A	2V	-	40	-	ns
			4.5V	-	15	-	
			6V	-	12	-	
ten	/ARE YOU	A or B	2V	-	125	-	ns
			4.5V	-	23	-	
			6V	-	20	-	
tdis	/ARE YOU	A or B	2V	-	74	-	ns
			4.5V	-	25	-	
			6V	-	21	-	
tt		A or B	2V	-	20	60	ns
			4.5V	-	8	12	
			6V	-	6	10	

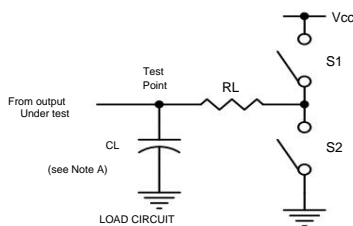
(CL=150pF unless otherwise noted.)

parameter	FROM (enter)	TO (output)	VCC	TA = 25°C Min			unit
				Typ	Max		
tpd	A or B	B or A	2V	-	54	-	ns
			4.5V	-	18	-	
			6V	-	15	-	
ten	/ARE YOU	A or B	2V	-	150	-	ns
			4.5V	-	31	-	
			6V	-	25	-	
tt		A or B	2V	-	45	210	ns
			4.5V	-	17	42	
			6V	-	13	36	

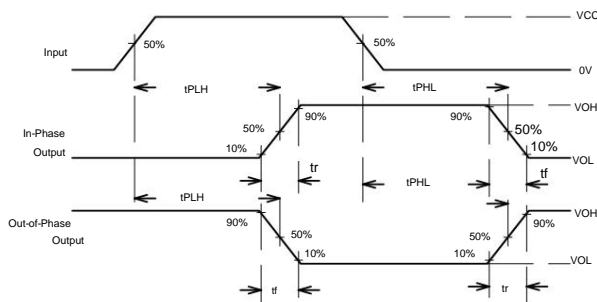
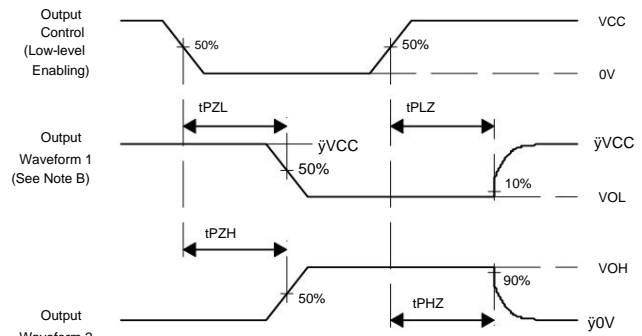


parameter	Test Conditions	typical value	unit
Power Dissipation Capacitance (Cpd)	no load	40	pF

Parameter measurement information



PARAMETER	RL	CL	S1	S2
ten	1K Ω	50pF or 150pF	Open	Closed
			Closed	Open
tdis	1K Ω	50pF	Open	Closed
			Closed	Open
tpd or tt	—	50pF or 150pF	Open	Open

VOLTAGE WAVEFORMS
PROPAGATION DELAY AND OUTPUT TRANSITION TIMESVOLTAGE WAVEFORM
INPUT RISE AND FALL TIMESVOLTAGE WAVEFORMS
ENABLE AND DISABLE TIMES FOR 3-STATE OUTPUTS

Note: 1. CL includes probe and test clip capacitance.

2. Waveform 1 is the data output when the internal output is low level, unless the output enable control terminal prohibits output. Waveform

2 is the data output when the internal output is high level, unless the output enable control terminal disables output.

3. The phase relationship between waveforms is arbitrarily selected, and all input pulses are provided by a signal generator with the following characteristics:

PRR \leq 1MHz, ZO=50 Ω , tr=6ns, tf=6ns. 4. Measure the output every

time the input data changes. 5. tPLZ and tPHZ are the same as tdis . 6.

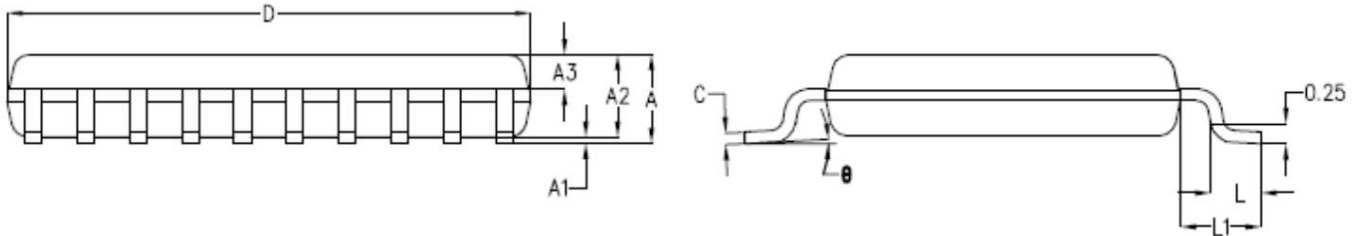
tPZL and tPZH are the same as ten . 7. tPLH and tPHL are the same as

tpd .



Package information

TSSOP-20



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	-	1.10	1.15
A1	0.02	-	0.08
A2	0.95	1.00	1.05
A3	0.38	0.43	0.48
b	0.17	0.22	0.25
c	0.10	0.15	0.20
D	6.40	6.50	6.60
E	6.30	6.40	6.50
E1	4.30	4.40	4.50
e	0.65BSC		
L	0.57	0.62	0.67
L1	1.05BSC		
θ	0°	3°	6°