

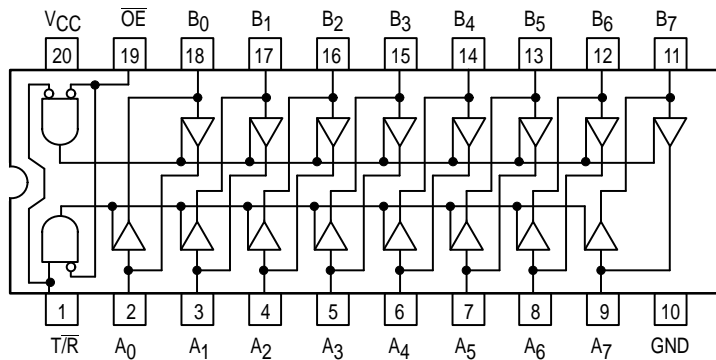


OCTAL BIDIRECTIONAL TRANSCEIVER WITH 3-STATE INPUTS/OUTPUTS

The MC54/74F245 contains eight noninverting bidirectional buffers with 3-state outputs and is intended for bus-oriented applications. Current sinking capability is 24 mA at the A ports and 64 mA at the B ports. The Transmit/Receive (T/R) input determines the direction of data flow through the bidirectional transceiver. Transmit (active HIGH) enables data from A ports to B ports; Receive (active LOW) enables data from B ports to A ports. The Output Enable input, when HIGH, disables both A and B ports by placing them in a high-Z condition.

- Noninverting Buffers
- Bidirectional Data Path
- B Outputs Sink 64 mA
- ESD > 4000 Volts

CONNECTION DIAGRAM (TOP VIEW)



FUNCTION TABLE

Inputs		Output
OE	T/R	
L	L	Bus B Data to Bus A
L	H	Bus A Data to Bus B
H	X	High-Z State

H = HIGH Voltage Level
L = LOW Voltage Level
X = Don't Care

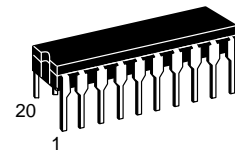
GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V _{CC}	Supply Voltage	54, 74	4.5	5.0	5.5	V
T _A	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
I _{OH}	Output Current — High	A _n Outputs	54, 74		-3.0	mA
			74		24	
I _{OL}	Output Current — Low	A _n Outputs	54		20	mA
			74			
I _{OH}	Output Current — High	B _n Outputs	54		-12	mA
			74		-15	
I _{OL}	Output Current — Low	B _n Outputs	54		48	mA
			74		64	

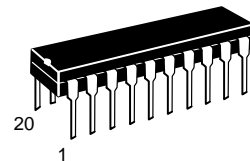
MC54/74F245

OCTAL BIDIRECTIONAL TRANSCEIVER WITH 3-STATE INPUTS/OUTPUTS

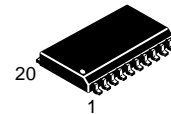
FAST™ SCHOTTKY TTL



J SUFFIX
CERAMIC
CASE 732-03



N SUFFIX
PLASTIC
CASE 738-03



DW SUFFIX
SOIC
CASE 751D-03

ORDERING INFORMATION

MC54FXXXJ Ceramic
MC74FXXXN Plastic
MC74FXXXDW SOIC

MC54/74F245

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions		
		Min	Typ	Max				
V _{IH}	Input HIGH Voltage	2.0			V	Guaranteed Input HIGH Voltage		
V _{IL}	Input LOW Voltage			0.8	V	Guaranteed Input LOW Voltage		
V _{IK}	Input Clamp Diode Voltage			-1.2	V	I _{IN} = -18 mA	V _{CC} = MIN	
V _{OH}	Output HIGH Voltage, A _n Outputs	54, 74	2.4	3.3	V	I _{OH} = -3.0 mA	V _{CC} = 4.50 V	
		74	2.7	3.3	V	I _{OH} = -3.0 mA	V _{CC} = 4.75 V	
V _{OH}	Output HIGH Voltage, B _n Outputs	54, 74	2.4	3.4	V	I _{OH} = -3.0 mA	V _{CC} = 4.50 V	
		74	2.7	3.4	V	I _{OH} = -3.0 mA	V _{CC} = 4.75 V	
		54	2.0		V	I _{OH} = -12 mA	V _{CC} = 4.50 V	
		74	2.0		V	I _{OH} = -15 mA		
V _{OL}	Output LOW Voltage, A _n Outputs	54		0.35	0.5	V	I _{OL} = 20 mA	V _{CC} = MIN
		74		0.35	0.5	V	I _{OL} = 24 mA	
V _{OL}	Output LOW Voltage, B _n Outputs	54			0.55	V	I _{OL} = 48 mA	V _{CC} = MIN
		74			0.55	V	I _{OL} = 64 mA	
I _{OZH} + I _{IH}	Output Off Current HIGH				70	μA	V _{OUT} = 2.7 V	V _{CC} = MAX
I _{OZL} + I _{IL}	Output Off Current LOW				-650	mA	V _{OUT} = 0.5 V	V _{CC} = MAX
I _{IH}	Input HIGH Current	OE, T/R Inputs			20	μA	V _{IN} = 2.7 V	V _{CC} = MAX
		OE, T/R Inputs			100	μA	V _{IN} = 7.0 V	
		A _n , B _n Inputs			1.0	mA	V _{IN} = 5.5 V	
I _{IL}	Input LOW Current	T/R Input			-0.8	mA	V _{IN} = 0.5 V	V _{CC} = MAX
		OE Input			-1.2	mA		
I _{OS}	Output Short Circuit Current (Note 2)	A _n Outputs	-60		-150	mA	V _{OUT} = GND	V _{CC} = MAX
		B _n Outputs	-100		-225	mA	V _{OUT} = GND	V _{CC} = MAX
I _{CCH}	Power Supply Current HIGH				90	mA	V _{CC} = MAX, Outputs HIGH	
I _{CCL}	Power Supply Current LOW				120	mA	V _{CC} = MAX, Outputs LOW	
I _{CCZ}	Power Supply Current OFF				110	mA	V _{CC} = MAX, Outputs OFF	

NOTES:

- For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
- Not more than one output should be shorted at a time.

AC CHARACTERISTICS

Symbol	Parameter	54/74F		54F		74F		Unit
		T _A = +25°C V _{CC} = +5.0 V C _L = 50 pF		T _A = -55°C to +125°C V _{CC} = 5.0 V ± 10% C _L = 50 pF		T _A = 0°C to +70°C V _{CC} = 5.0 V ± 10% C _L = 50 pF		
		Min	Max	Min	Max	Min	Max	
t _{PLH}	Propagation Delay	2.5	6.0	2.5	8.0	2.5	7.0	ns
t _{PHL}	A _n to B _n or B _n to A _n	2.5	6.0	2.5	8.0	2.5	7.0	
t _{PZH}	Output Enable Time	3.0	7.0	3.0	9.0	3.0	8.0	ns
t _{PZL}		3.5	8.0	3.5	10	3.5	9.0	
t _{PHZ}	Output Disable Time	2.5	6.5	2.5	8.5	2.5	7.5	ns
t _{PLZ}		2.0	6.5	2.0	8.5	2.0	7.5	