



MC54F/74F242 MC54F/74F243

QUAD BUS TRANSCEIVERS (with 3-State Outputs)

DESCRIPTION — The MC54F/74F242 and MC54F/74F243 are Quad Bus Transmitters/Receivers designed for 4-line asynchronous 2-way data communication between data buses.

- 2-WAY ASYNCHRONOUS DATA BUS COMMUNICATION
- INPUT CLAMP DIODES LIMIT HIGH-SPEED TERMINATION EFFECTS

QUAD BUS TRANSCEIVERS (WITH 3-STATE OUTPUTS) FAST™ SCHOTTKY TTL

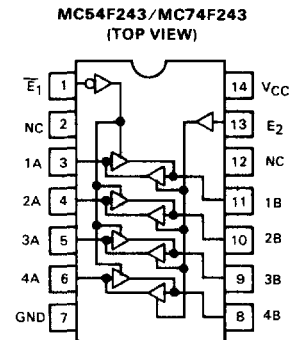
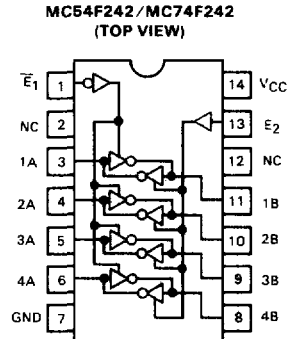
**TRUTH TABLES
MC54F242/MC74F242**

INPUTS		OUTPUT	INPUTS		OUTPUT
\bar{E}_1	D		E_2	D	
L	L	H	L	X	(Z)
L	H	L	L	X	(Z)
H	X	(Z)	H	L	H
H	X	(Z)	H	H	L

MC54F243/MC74F243

INPUTS		OUTPUT	INPUTS		OUTPUT
\bar{E}_1	D		E_2	D	
L	L	L	L	X	(Z)
L	H	H	L	X	(Z)
H	X	(Z)	H	L	L
H	X	(Z)	H	H	H

H = HIGH Voltage Level
L = LOW Voltage Level
X = Immaterial
Z = HIGH Impedance



J Suffix — Case 632-08 (Ceramic)
N Suffix — Case 646-06 (Plastic)
D Suffix — Case 751A-02 (SOIC)

GUARANTEED OPERATING RANGES

SYMBOL	PARAMETER		MIN	TYP	MAX	UNIT
VCC	Supply Voltage	54, 74	4.5	5.0	5.5	V
TA	Operating Ambient Temperature Range	54 74	-55 0	25 25	125 70	°C
I _{OH}	Output Current — High	54 74			-12 -15	mA
I _{OL}	Output Current — Low	54 74			48 64	mA

MC54F/74F242 • MC54F/74F243

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER	LIMITS			UNITS	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	54	2.0		V	I _{OH} = -12 mA	V _{CC} = 4.50 V
		74	2.0		V	I _{OH} = -15 mA	V _{CC} = 4.50 V
		54, 74	2.4		V	I _{OH} = -3.0 mA	V _{CC} = 4.50 V
		74	2.7		V	I _{OH} = -3.0 mA	V _{CC} = 4.75 V
V _{OL}	Output LOW Voltage	54		0.55	V	I _{OL} = 48 mA	V _{CC} = MIN
		74		0.55	V	I _{OL} = 64 mA	
I _{OZH}	Output Off Current HIGH			70	μA	V _{OUT} = 2.7 V	V _{CC} = MAX
				1.0	mA	V _{OUT} = 5.5 V	
I _{OZL}	Output Off Current LOW			-1.6	mA	V _{OUT} = 0.5 V	V _{CC} = MAX
I _{IH}	Input HIGH Current	Enable		20	μA	V _{IN} = 2.7 V	V _{CC} = MAX
		Data		70	μA	V _{IN} = 2.7 V	
		Data		1.0	mA	V _{IN} = 5.5 V	
		Enable		0.1	mA	V _{IN} = 7.0 V	
I _{IL}	Input LOW Current	Enable		-1.0	mA	V _{IN} = 0.5 V	V _{CC} = MAX
		Data*		-1.6	mA	V _{IN} = 0.5 V	
I _{OS}	Output Short Circuit Current (Note 2)	-100		-275	mA	V _{OUT} = 0 V	V _{CC} = MAX
I _{CCH}	Power Supply Current HIGH	F242		60	mA	Outputs HIGH	V _{CC} = MAX
		F243		80	mA		
I _{CCL}	Power Supply Current LOW	F242		75	mA	Outputs LOW	V _{CC} = MAX
		F243		90	mA		
I _{CCZ}	Power Supply Current OFF	F242		75	mA	Outputs OFF	V _{CC} = MAX
		F243		90	mA		

NOTES:

1. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
2. Not more than one output should be shorted at a time, nor for more than 1 second.

F242
AC CHARACTERISTICS

SYMBOL	PARAMETER	54F/74F		54F		74F		UNITS
		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, Data to Output	2.5	7.0	2.5	9.0	2.5	8.0	ns
t _{PHL}		1.5	4.7	1.5	6.0	1.5	5.7	
t _{PZH}	Output Enable Time	2.0	4.7	2.0	6.5	2.0	5.7	ns
t _{PZL}		4.0	9.0	4.0	12	4.0	10	
t _{PHZ}	Output Disable Time	2.0	5.3	2.0	6.5	2.0	6.3	ns
t _{PLZ}		2.0	6.5	2.0	12.5	2.0	8.0	

F243
AC CHARACTERISTICS

t _{PLH}	Propagation Delay, Data to Output	2.5	5.2	2.0	8.5	2.0	6.2	ns
t _{PHL}		2.5	5.2	2.0	8.5	2.0	6.5	
t _{PZH}	Output Enable Time	2.0	5.7	2.0	8.0	2.0	6.7	ns
t _{PZL}		2.0	7.5	2.0	10.5	2.0	8.5	
t _{PHZ}	Output Disable Time	2.0	6.0	1.5	7.5	1.5	7.0	ns
t _{PLZ}		2.0	6.5	2.0	12.5	2.0	7.5	

NOTES:

1. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
2. Not more than one output should be shorted at a time, nor for more than 1 second.

