

011693

# 54F/74F242 • 54F/74F243

*quad single-ended,  
3-state*

## Quad Bus Transceiver With 3-State Outputs

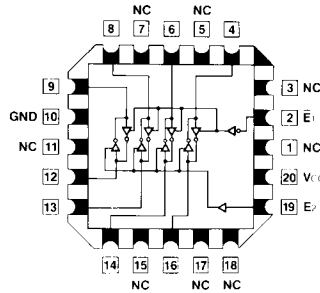
### Description

The 'F242 and 'F243 are quad bus transmitters/receivers designed for 4-line asynchronous 2-way data communications between data busses.

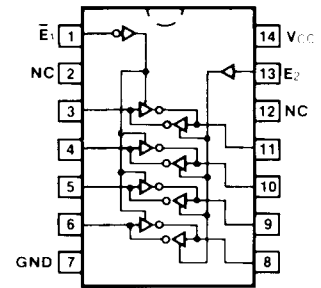
- 2-Way Asynchronous Data Bus Communication
- Input Clamp Diodes Limit High-Speed Termination Effects

Ordering Code: See Section 5

### Connection Diagrams

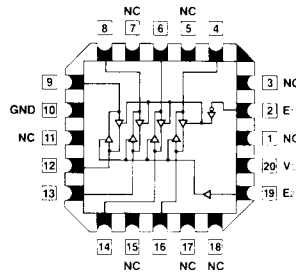


**Pin Assignment  
for LCC and PCC**

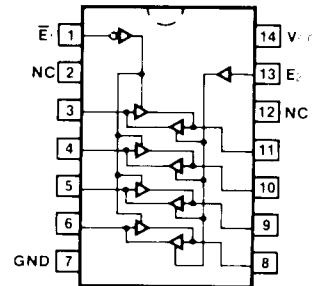


**Pin Assignment  
for DIP and SOIC**

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**Pin Assignment  
for LCC and PCC**



**Pin Assignment  
for DIP and SOIC**

Input Loading/Fan-Out: See Section 3 for U.L. definitions

Pin Names	Description	54F/74F(U.L.) HIGH/LOW
$\bar{E}_1$	Enable Input (Active LOW)	0.5/0.625
$E_2$	Enable Input (Active HIGH)	0.5/0.625
	Inputs ('F242)	1.75/0.625*
	Inputs ('F243)	1.75/1.0*
	Outputs	75/40 (30)

\*Worst-case ('F242 enabled, 'F243 disabled)

Truth Tables

'F242

Inputs		Output
$\bar{E}_1$	D	
L	L	H
L	H	L
H	X	Z

'F243

Inputs		Output
$\bar{E}_1$	D	
L	L	L
L	H	H
H	X	Z

Inputs		Output
$E_2$	D	
L	X	Z
H	L	H
H	H	L

Inputs		Output
$E_2$	D	
L	X	Z
H	L	L
H	H	H

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

DC Characteristics over Operating Temperature Range (unless otherwise specified)

Symbol	Parameter	54F/74F			Units	Conditions
		Min	Typ	Max		
$I_{CCH}$ $I_{CCL}$ $I_{CCZ}$	Power Supply Current 'F242		30 46 42	46 69 63	mA	Outputs HIGH Outputs LOW Outputs OFF
$I_{CCH}$ $I_{CCL}$ $I_{CCZ}$	Power Supply Current 'F243		64 64 71	80 90 90	mA	Outputs HIGH Outputs LOW Outputs OFF

$V_{CC} = \text{Max}$

**AC Characteristics:** See Section 3 for waveforms and load configurations

Symbol	Parameter	54F/74F			54F		74F		Units	Fig. No.
		$T_A = +25^\circ\text{C}$ $V_{CC} = +5.0\text{ V}$ $C_L = 50\text{ pF}$			$T_A, V_{CC} =$ Mil $C_L = 50\text{ pF}$		$T_A, V_{CC} =$ Com $C_L = 50\text{ pF}$			
		Min	Typ	Max	Min	Max	Min	Max		
$t_{PLH}$ $t_{PHL}$	Propagation Delay Data to Output ('F242)			7.0				ns	3-1 3-3	
$t_{PZH}$ $t_{PZL}$	Output Enable Time ('F242)			4.7 9.0				ns	3-1 3-12 3-13	
$t_{PHZ}$ $t_{PLZ}$	Output Disable Time ('F242)			5.3 6.5						

**AC Characteristics:** See Section 3 for waveforms and load configurations

Symbol	Parameter	54F/74F			54F		74F		Units	Fig. No.
		$T_A = +25^\circ\text{C}$ $V_{CC} = +5.0\text{ V}$ $C_L = 50\text{ pF}$			$T_A, V_{CC} =$ Mil $C_L = 50\text{ pF}$		$T_A, V_{CC} =$ Com $C_L = 50\text{ pF}$			
		Min	Typ	Max	Min	Max	Min	Max		
$t_{PLH}$ $t_{PHL}$	Propagation Delay Data to Output ('F243)	2.5	4.0	5.2	2.0	6.5	2.0	6.2	ns	3-1 3-4
		2.5	4.0	5.2	2.0	8.5	2.0	6.5		
$t_{PZH}$ $t_{PZL}$	Output Enable Time ('F243)	2.0	4.3	5.7	2.0	8.0	2.0	6.7	ns	3-1 3-12 3-13
		2.0	5.8	7.5	2.0	10.5	2.0	8.5		
$t_{PHZ}$ $t_{PLZ}$	Output Disable Time ('F243)	2.0	4.5	6.0	1.5	7.5	1.5	7.0		
		2.0	4.5	6.0	2.0	8.5	2.0	7.0		