

AC241 • ACT241

54AC/74AC241 • 54ACT/74ACT241

Octal Buffer/Line Driver With 3-State Outputs

Description

The 'AC'/ACT241 is an octal buffer and line driver designed to be employed as a memory address driver, clock driver and bus-oriented transmitter or receiver which provides improved PC board density.

- 3-State Outputs Drive Bus Lines or Buffer Memory Address Registers
- Outputs Source/Sink 24 mA
- 'ACT241 has TTL-Compatible Inputs

Ordering Code: See Section 6

Truth Tables

Inputs		Outputs (Pins 12, 14, 16, 18)
\overline{OE}_1	D	
L	L	L
L	H	H
H	X	Z

Inputs		Outputs (Pins 3, 5, 7, 9)
OE_2	D	
H	L	L
H	H	H
L	X	Z

H = HIGH Voltage Level

L = LOW Voltage Level

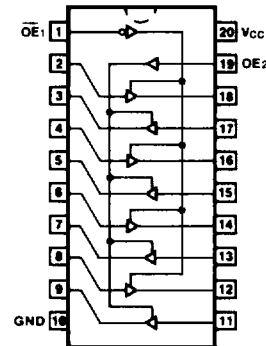
X = Immaterial

Z = High Impedance

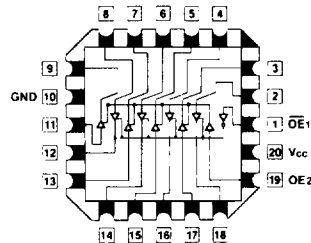
DC Characteristics (unless otherwise specified)

Symbol	Parameter	54AC/ACT	74AC/ACT	Units	Conditions
I_{CC}	Maximum Quiescent Supply Current	160	80	μA	$V_{IN} = V_{CC}$ or Ground, $V_{CC} = 5.5 V$, $T_A = \text{Worst Case}$
I_{CC}	Maximum Quiescent Supply Current	8.0	8.0	μA	$V_{IN} = V_{CC}$ or Ground, $V_{CC} = 5.5 V$, $T_A = 25^\circ C$
I_{CCT}	Maximum Additional I_{CC} /Input ('ACT241)	1.6	1.5	mA	$V_{IN} = V_{CC} - 2.1 V$ $V_{CC} = 5.5 V$, $T_A = \text{Worst Case}$

Connection Diagrams



Pin Assignment for DIP, Flatpak and SOIC



Pin Assignment for LCC

AC Characteristics

Symbol	Parameter	Vcc* (V)	74AC			54AC		74AC		Units	Fig. No.
			TA = + 25°C CL = 50 pF			TA = - 55°C to + 125°C CL = 50 pF		TA = - 40°C to + 85°C CL = 50 pF			
			Min	Typ	Max	Min	Max	Min	Max		
tPLH	Propagation Delay Data to Output	3.3 5.0	1.0 1.0	6.0 5.0	9.0 7.0	1.0 1.0	12.0 9.5	1.0 1.0	10.0 7.5	ns	3-5
tPHL	Propagation Delay Data to Output	3.3 5.0	1.0 1.0	6.0 4.5	9.0 7.0	1.0 1.0	11.0 9.0	1.0 1.0	10.5 7.5	ns	3-5
tpZH	Output Enable Time	3.3 5.0	1.0 1.0	6.5 5.5	12.5 9.0	1.0 1.0	13.0 10.0	1.0 1.0	13.0 9.5	ns	3-7
tPZL	Output Enable Time	3.3 5.0	1.0 1.0	7.0 5.5	12.0 9.0	1.0 1.0	13.0 10.0	1.0 1.0	13.0 9.5	ns	3-8
tpHZ	Output Disable Time	3.3 5.0	1.0 1.0	8.0 6.5	12.0 10.0	1.0 1.0	13.0 11.5	1.0 1.0	12.5 10.5	ns	3-7
tPLZ	Output Disable Time	3.3 5.0	1.0 1.0	7.0 6.0	12.5 10.0	1.0 1.0	13.0 11.5	1.0 1.0	13.5 10.5	ns	3-8

*Voltage Range 3.3 is 3.3 V ± 0.3 V
Voltage Range 5.0 is 5.0 V ± 0.5 V

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AC Characteristics

Symbol	Parameter	Vcc* (V)	74ACT			54ACT		74ACT		Units	Fig. No.
			TA = + 25°C CL = 50 pF			TA = - 55°C to + 125°C CL = 50 pF		TA = - 40°C to + 85°C CL = 50 pF			
			Min	Typ	Max	Min	Max	Min	Max		
tPLH	Propagation Delay Data to Output	5.0	1.0	6.5	9.0	1.0	10.0	1.0	10.0	ns	3-5
tPHL	Propagation Delay Data to Output	5.0	1.0	7.0	9.0	1.0	10.0	1.0	10.0	ns	3-5
tpZH	Output Enable Time	5.0	1.0	6.0	9.0	1.0	11.5	1.0	10.0	ns	3-7
tPZL	Output Enable Time	5.0	1.0	7.0	10.0	1.0	12.5	1.0	11.0	ns	3-8
tpHZ	Output Disable Time	5.0	1.0	8.0	10.5	1.0	12.5	1.0	11.5	ns	3-7
tPLZ	Output Disable Time	5.0	1.0	7.0	10.5	1.0	12.5	1.0	11.5	ns	3-8

*Voltage Range 5.0 is 5.0 V ± 0.5 V

Military parameters given herein are for general references only. For current military specifications and subgroup testing information please request Fairchild's Table I data sheet from your Fairchild sales engineer or account representative.

Capacitance

Symbol	Parameter	54/74AC/ACT	Units	Conditions
		Typ		
C _{IN}	Input Capacitance	4.5	pF	V _{CC} = 5.5 V
C _{PD}	Power Dissipation Capacitance	45.0	pF	V _{CC} = 5.5 V