

54AC/74AC533 • 54ACT/74ACT533

Octal Transparent Latch With 3-State Outputs

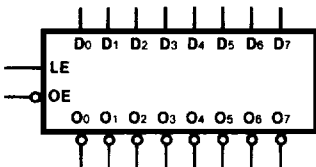
Description

The 'AC/ACT533 consists of eight latches with 3-state outputs for bus organized system applications. The flip-flops appear transparent to the data when Latch Enable (LE) is HIGH. When LE is LOW, the data that meets the setup times is latched. Data appears on the bus when the Output Enable (\overline{OE}) is LOW. When \overline{OE} is HIGH the bus output is in the high impedance state. The 'AC/ACT533 is the same as the 'AC/ACT373, except that the outputs are inverted on the 'AC/ACT533. For functional description please refer to the 'AC/ACT373 data sheet.

- Eight Latches in a Single Package
- 3-State Outputs for Bus Interfacing
- Outputs Source/Sink 24 mA
- 'ACT533 has TTL-Compatible Inputs
- Inverted Output Version of 'ACT373

Ordering Code: See Section 6

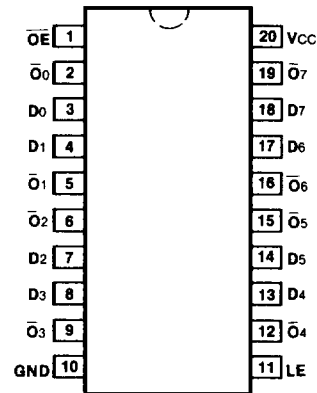
Logic Symbol



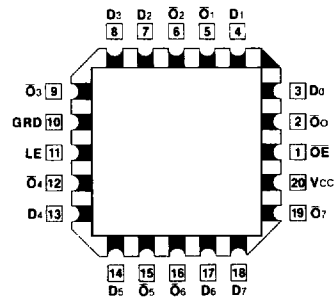
Pin Names

- D₀ - D₇ Data Inputs
- LE Latch Enable Input
- \overline{OE} Output Enable Input
- \overline{O}_0 - \overline{O}_7 Complementary 3-State Outputs

Connection Diagrams

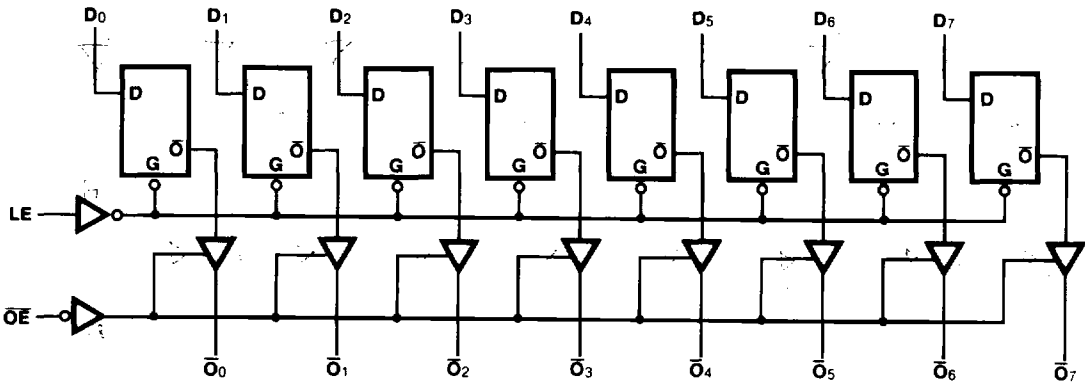


**Pin Assignment
for DIP, Flatpak and SOIC**



**Pin Assignment
for LCC**

Logic Diagram



Please note that this diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

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 = 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°C
I _{CC(T)}	Maximum Additional I _{CC} /Input (ACT533)	1.6	1.5	mA	V _{IN} = V _{CC} - 2.1 V, V _{CC} = 5.5 V, T _A = Worst Case

AC533 • ACT533

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 Dn to On	3.3 5.0		8.0 5.0					ns	3-5	
tPHL	Propagation Delay Dn to On	3.3 5.0		7.0 5.0					ns	3-5	
tPLH	Propagation Delay LE to On	3.3 5.0		8.0 5.0					ns	3-6	
tPHL	Propagation Delay LE to On	3.3 5.0		7.0 5.0					ns	3-6	
tpZH	Output Enable Time	3.3 5.0		6.5 4.5					ns	3-7	
tpZL	Output Enable Time	3.3 5.0		6.0 4.5					ns	3-8	
tpHZ	Output Disable Time	3.3 5.0		7.0 5.0					ns	3-7	
tPLZ	Output Disable Time	3.3 5.0		5.0 3.5					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

AC Operating Requirements

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			
			Typ	Guaranteed Minimum						
ts	Setup Time, HIGH or LOW Dn to LE	3.3 5.0	3.5 2.0						ns	3-9
th	Hold Time, HIGH or LOW Dn to LE	3.3 5.0	-2.5 -1.5						ns	3-9
tw	LE Pulse Width, HIGH	3.3 5.0	3.0 2.5						ns	3-6

*Voltage Range 3.3 is 3.3 V ± 0.3 V
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.

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 Dn to On	5.0	7.0							ns	3-5
tPHL	Propagation Delay Dn to On	5.0	6.5							ns	3-5
tPLH	Propagation Delay LE to On	5.0	6.5							ns	3-6
tPHL	Propagation Delay LE to On	5.0	6.0							ns	3-6
tpZH	Output Enable Time	5.0	6.0							ns	3-7
tpZL	Output Enable Time	5.0	5.5							ns	3-8
tpHZ	Output Disable Time	5.0	7.5							ns	3-7
tPLZ	Output Disable Time	5.0	5.0							ns	3-8

*Voltage Range 5.0 is 5.0 V ± 0.5 V

AC Operating Requirements

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			
			Typ	Guaranteed Minimum						
ts	Setup Time, HIGH or LOW Dn to LE	5.0	2.0						ns	3-9
th	Hold Time, HIGH or LOW Dn to LE	5.0	-1.5						ns	3-9
tw	LE Pulse Width, HIGH	5.0	2.0						ns	3-6

*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		
CIN	Input Capacitance	4.5	pF	V _{CC} = 5.5 V
CPD	Power Dissipation Capacitance		pF	V _{CC} = 5.5 V