

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

74ABT240

Octal Buffer/Line Driver with 3-STATE Outputs

General Description

The ABT240 is an inverting 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.

Features

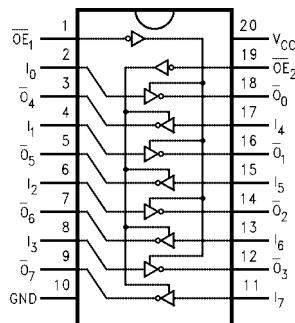
- Output sink capability of 64 mA, source capability of 32 mA
- Guaranteed latchup protection
- High impedance glitch free bus loading during entire power up and power down cycle
- Nondestructive hot insertion capability

Ordering Code:

Order Number	Package Number	Package Description
74ABT240CSC	M20B	20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300" Wide
74ABT240CSJ	M20D	Pb-Free 20-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
74ABT240CMSA	MSA20	20-Lead Shrink Small Outline Package (SSOP), JEDEC MO-150, 5.3mm Wide
74ABT240CMTC	MTC20	20-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide

Device also available in Tape and Reel. Specify by appending suffix letter "X" to the ordering code.
Pb-Free package per JEDEC J-STD-020B.

Connection Diagram



Pin Descriptions

Pin Names	Description
OE ₁ , OE ₂	3-STATE Output
I ₀ -I ₇	Enable Inputs
O ₀ -O ₇	Inputs
O ₀ -O ₇	Outputs

Truth Tables

Inputs		Outputs
OE ₁	I _n	(Pins 12, 14, 16, 18)
L	L	H
L	H	L
H	X	Z

Inputs		Outputs
OE ₂	I _n	(Pins 3, 5, 7, 9)
L	L	H
L	H	L
H	X	Z

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

Absolute Maximum Ratings^(Note 1)

Storage Temperature	−65°C to +150°C	
Junction Temperature under Bias	−55°C to +150°C	
V _{CC} Pin Potential to Ground Pin	−0.5V to +7.0V	
Input Voltage (Note 2)	−0.5V to +7.0V	
Input Current (Note 2)	−30 mA to +5.0 mA	
Voltage Applied to Any Output in the Disabled or Power-Off State	−0.5V to 5.5V	
in the HIGH State	−0.5V to V _{CC}	
Current Applied to Output in LOW State (Max)	twice the rated I _{OL} (mA)	
DC Latchup Source Current (Across Comm Operating Range)	−150 mA	
Over Voltage Latchup (I/O)	10V	

Recommended Operating Conditions

Free Air Ambient Temperature	−40°C to +85°C
Supply Voltage	+4.5V to +5.5V
Minimum Input Edge Rate (ΔV/Δt)	
Data Input	50 mV/ns
Enable Input	20 mV/ns

Note 1: Absolute maximum ratings are values beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

Note 2: Either voltage limit or current limit is sufficient to protect inputs.

DC Electrical Characteristics

Symbol	Parameter	Min	Typ	Max	Units	V _{CC}	Conditions
V _{IH}	Input HIGH Voltage	2.0			V		Recognized HIGH Signal
V _{IL}	Input LOW Voltage		0.8		V		Recognized LOW Signal
V _{CD}	Input Clamp Diode Voltage		−1.2		V	Min	I _{IN} = −18 mA
V _{OH}	Output HIGH Voltage	2.5			V	Min	I _{OH} = −3 mA
		2.0			V	Min	I _{OH} = −32 mA
V _{OL}	Output LOW Voltage		0.55		V	Min	I _{OL} = 64 mA
I _{IH}	Input HIGH Current		1		μA	Max	V _{IN} = 2.7V (Note 3) V _{IN} = V _{CC}
			1		μA	Max	V _{IN} = 7.0V
I _{BVI}	Input HIGH Current Breakdown Test		7		μA	Max	V _{IN} = 7.0V
I _{IL}	Input LOW Current		−1		μA	Max	V _{IN} = 0.5V (Note 3) V _{IN} = 0.0V
			−1		μA	Max	V _{IN} = 0.0V
V _{ID}	Input Leakage Test	4.75			V	0.0	I _{ID} = 1.9 μA All Other Pins Grounded
I _{OZH}	Output Leakage Current		10		μA	0 − 5.5V	V _{OUT} = 2.7V; \overline{OE}_n = 2.0V
I _{OZL}	Output Leakage Current		−10		μA	0 − 5.5V	V _{OUT} = 0.5V; \overline{OE}_n = 2.0V
I _{OS}	Output Short-Circuit Current	−100	−275		mA	Max	V _{OUT} = 0.0V
I _{CEx}	Output HIGH Leakage Current		50		μA	Max	V _{OUT} = V _{CC}
I _{zz}	Bus Drainage Test	100			μA	0.0	V _{OUT} = 5.5V; All Others GND
I _{CCH}	Power Supply Current		50		μA	Max	All Outputs HIGH
I _{CCL}	Power Supply Current		30		mA	Max	All Outputs LOW
I _{CCZ}	Power Supply Current		50		μA	Max	\overline{OE}_n = V _{CC} ; All Others at V _{CC} or Ground
I _{CCT}	Additional I _{CC} /Input Outputs Enabled Outputs 3-STATE Outputs 3-STATE		1.5		mA	Max	V _I = V _{CC} − 2.1V
			1.5		mA		Enable Input V _I = V _{CC} − 2.1V
			50		μA		Data Input V _I = V _{CC} − 2.1V All Others at V _{CC} or Ground
I _{CCD}	Dynamic I _{CC} (Note 3)	No Load		0.1	mA/ MHz	Max	Outputs Open \overline{OE}_n = GND, (Note 4) One Bit Toggling, 50% Duty Cycle

Note 3: Guaranteed, but not tested.

Note 4: For 8 bits toggling, I_{CCD} < 0.8 mA/MHz.

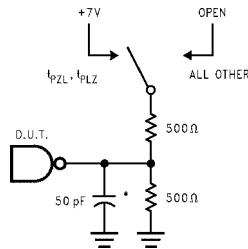
AC Electrical Characteristics

Symbol	Parameter	$T_A = +25^\circ C$ $V_{CC} = +5V$ $C_L = 50 pF$			$T_A = -55^\circ C$ to $+125^\circ C$ $V_{CC} = 4.5V-5.5V$ $C_L = 50 pF$			$T_A = -40^\circ C$ to $+85^\circ C$ $V_{CC} = 4.5V-5.5V$ $C_L = 50 pF$			Units
		Min	Typ	Max	Min	Max	Min	Max	Min	Max	
t_{PLH}	Propagation Delay	1.0	4.8	0.8	5.5	1.0	4.8	1.0	4.8	1.0	ns
t_{PHL}	Data to Outputs	1.6	4.8	1.0	5.5	1.6	4.8	1.6	4.8	1.6	ns
t_{PZH}	Output Enable	1.1	6.2	0.8	7.5	1.1	6.2	1.1	6.2	1.1	ns
t_{PZL}	Time	1.1	6.2	0.8	7.7	1.1	6.2	1.1	6.2	1.1	ns
t_{PHZ}	Output Disable	1.8	6.4	1.0	7.5	1.8	6.4	1.8	6.4	1.8	ns
t_{PLZ}	Time	1.6	5.8	1.0	7.2	1.6	5.8	1.6	5.8	1.6	ns

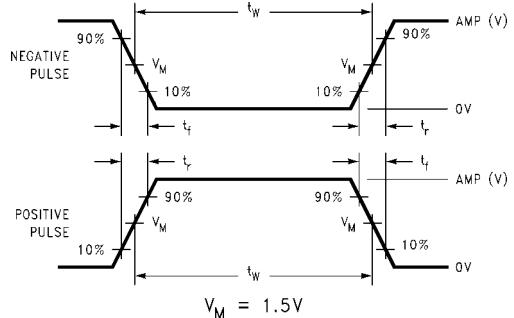
Capacitance

Symbol	Parameter	Typ	Units	Conditions	
				$T_A = 25^\circ C$	
C_{IN}	Input Capacitance	5.0	pF	$V_{CC} = 0V$	
C_{OUT} (Note 5)	Output Capacitance	9.0	pF	$V_{CC} = 5.0V$	

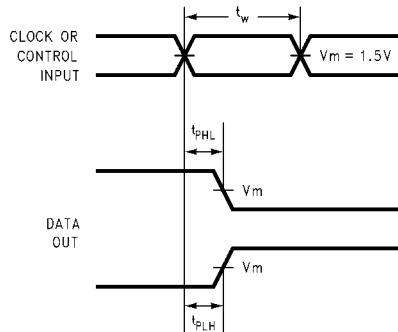
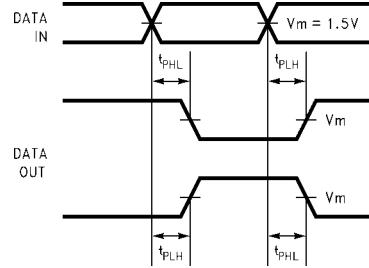
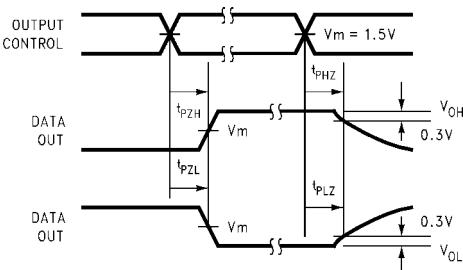
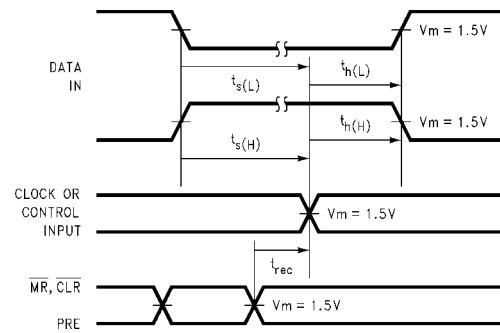
Note 5: C_{OUT} is measured at frequency $f = 1$ MHz, per MIL-STD-883, Method 3012.

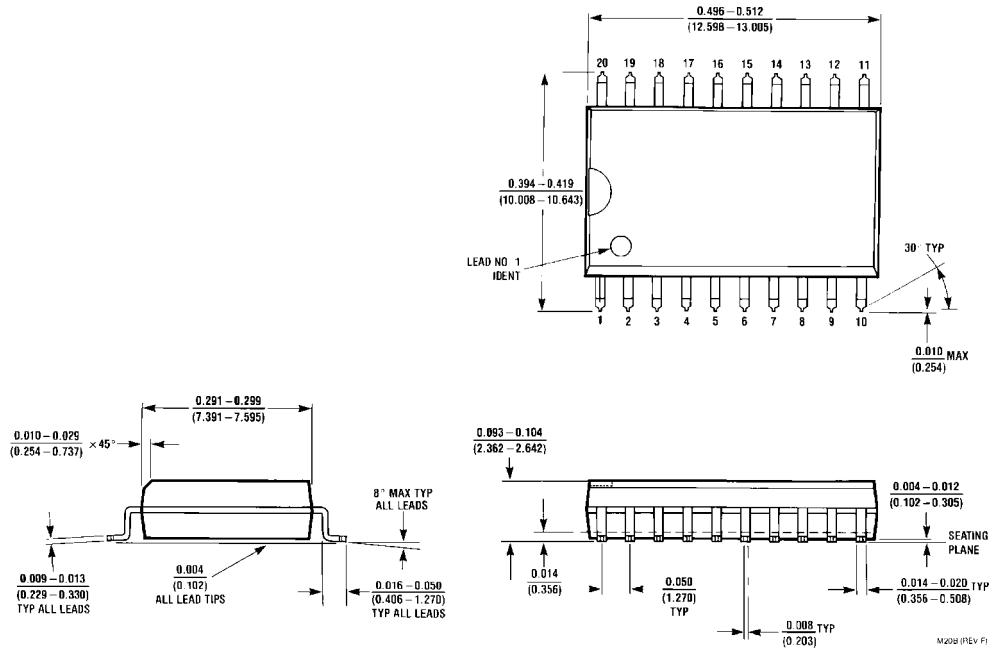
AC Loading

*Includes jig and probe capacitance

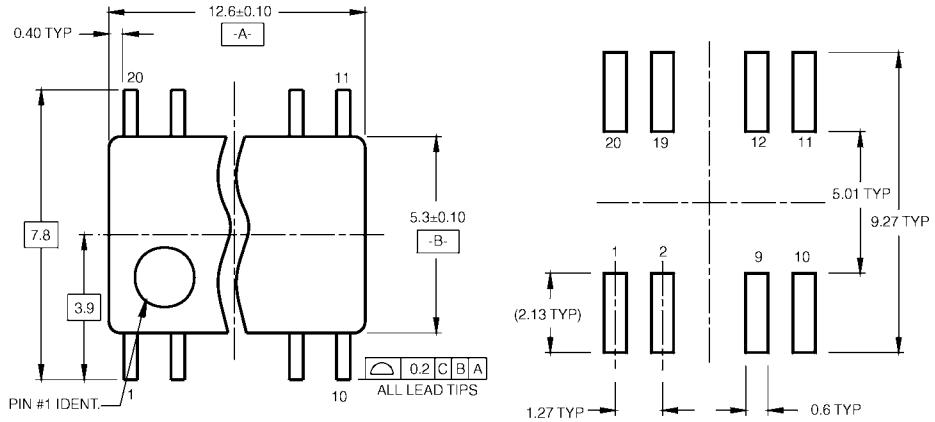
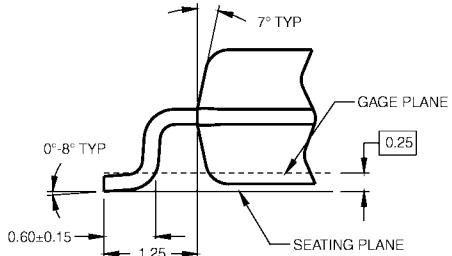
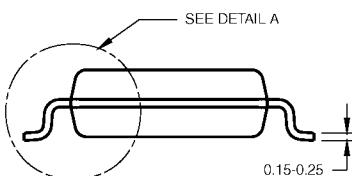
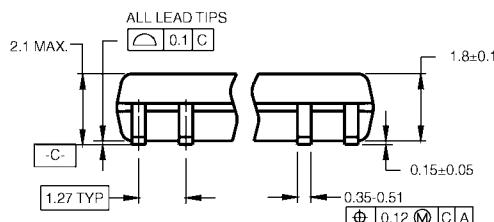
**Standard AC Test Load**

Amplitude	Rep. Rate	t_W	t_f	t_f
3.0V	1 MHz	500 ns	2.5 ns	2.5 ns

Test Input Signal Requirements**AC Waveforms****Propagation Delay,
Pulse Width Waveforms****Propagation Delay Waveforms for
Inverting and Non-Inverting Functions****3-STATE Output HIGH
and LOW Enable and Disable Times****Setup Time, Hold Time
and Recovery Time Waveforms**

Physical Dimensions inches (millimeters) unless otherwise noted

20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300" Wide
Package Number M20B

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)LAND PATTERN RECOMMENDATION

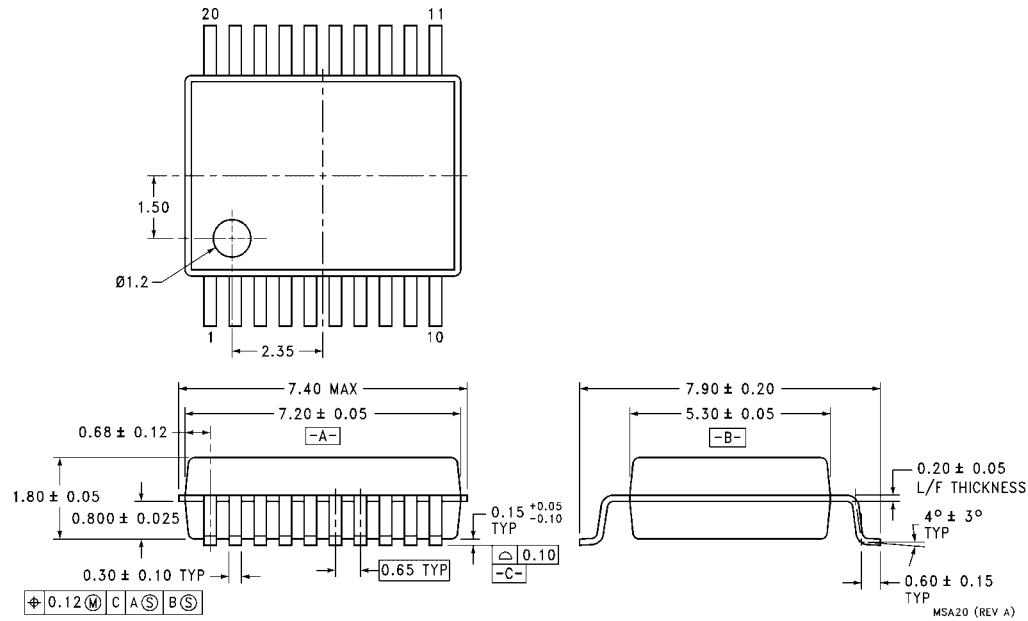
NOTES:

- A. CONFORMS TO EIAJ EDR-7320 REGISTRATION, ESTABLISHED IN DECEMBER, 1998.
- B. DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.

M20DRevB1

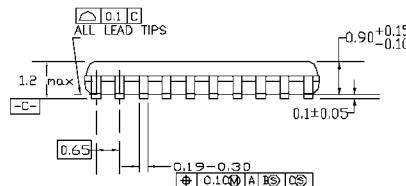
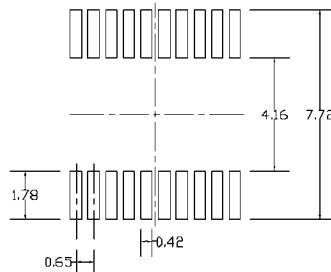
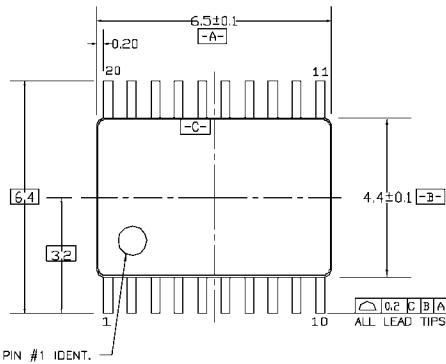
DETAIL A

Pb-Free 20-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
Package Number M20D

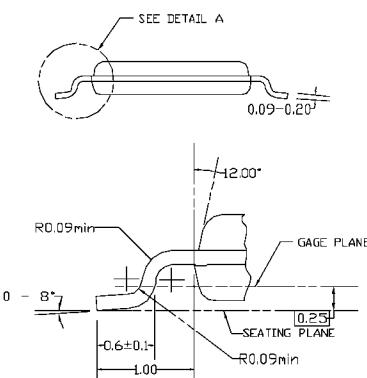
Physical Dimensions inches (millimeters) unless otherwise noted (Continued)

74ABT240 Octal Buffer/Line Driver with 3-STATE Outputs

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



DIMENSIONS ARE IN MILLIMETERS



DETAIL A

NOTES:

- A. CONFORMS TO JEDEC REGISTRATION MO-153, VARIATION AC, REF NOTE 6, DATE 7/93.
- B. DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLDS FLASH, AND TIE BAR EXTRUSIONS.
- D. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M, 1982.

MTC20REV01

20-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide
Package Number MTC20

Fairchild does not assume any responsibility for use of any circuitry described, no circuit patent licenses are implied and Fairchild reserves the right at any time without notice to change said circuitry and specifications.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

www.fairchildsemi.com