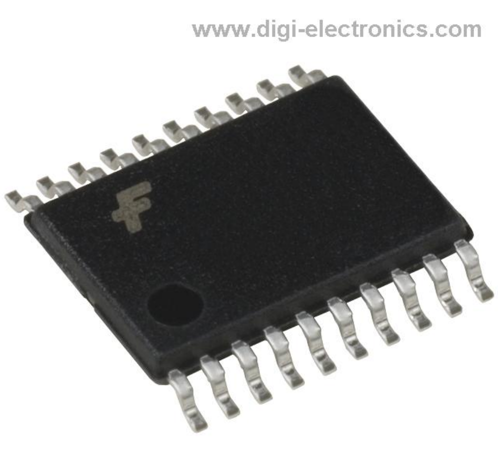
74ABT240CMTCX Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	74ABT240CMTCX-DG
Manufacturer	onsemi
Manufacturer Product Number	74ABT240CMTCX
Description	IC BUFFER INVERT 5.5V 20TSSOP
Detailed Description	Buffer, Inverting 2 Element 4 Bit per Element 3-State Output 20-TSSOP

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
74ABT240CMTCX	onsemi
Series:	Product Status:
74ABT	Obsolete
Logic Type:	Number of Elements:
Buffer, Inverting	2
Number of Bits per Element:	Input Type:
4	-
Output Type:	Current - Output High, Low:
3-State	32mA, 64mA
Voltage - Supply:	Operating Temperature:
4.5V ~ 5.5V	-40°C ~ 85°C (TA)
Mounting Type:	Package / Case:
Surface Mount	20-TSSOP (0.173", 4.40mm Width)
Supplier Device Package:	Base Product Number:
20-TSSOP	74ABT240

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8542.39.0001

FAIRCHILD
SEMICONDUCTOR®

March 1994
Revised March 2005

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

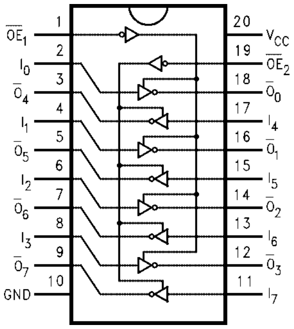
- Output sink capability of 64 mA, source capability of 32 mA
- Guaranteed latchup protection
- High impedance glitch free bus loading during entire power up and power down cycle
- Nondestructive hot insertion capability

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
$\overline{OE}_1$, $\overline{OE}_2$	3-STATE Output Enable Inputs
I_0–I_7	Inputs
$\overline{O}_0$–$\overline{O}_7$	Outputs

Truth Tables

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

Inputs		Outputs
$\overline{OE}_2$	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 ($\Delta V/\Delta t$)	
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 1	µA	Max	$V_{IN} = 2.7V$ (Note 3) $V_{IN} = V_{CC}$
I_{BVI}	Input HIGH Current Breakdown Test			7	µA	Max	$V_{IN} = 7.0V$
I_{IL}	Input LOW Current			−1 −1	µA	Max	$V_{IN} = 0.5V$ (Note 3) $V_{IN} = 0.0V$
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			1.5	mA	Max	$V_I = V_{CC} - 2.1V$
	Outputs 3-STATE			1.5	mA		Enable Input $V_I = V_{CC} - 2.1V$
	Outputs 3-STATE			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

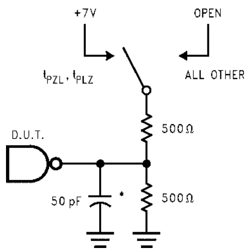
Symbol	Parameter	$T_A = +25°C$ $V_{CC} = +5V$ $C_L = 50$ pF			$T_A = -55°C$ to $+125°C$ $V_{CC} = 4.5V–5.5V$ $C_L = 50$ pF		$T_A = -40°C$ to $+85°C$ $V_{CC} = 4.5V–5.5V$ $C_L = 50$ pF		Units
		Min	Typ	Max	Min	Max	Min	Max	
t_{PLH}	Propagation Delay	1.0		4.8	0.8	5.5	1.0	4.8	ns
t_{PHL}	Data to Outputs	1.6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

Capacitance

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

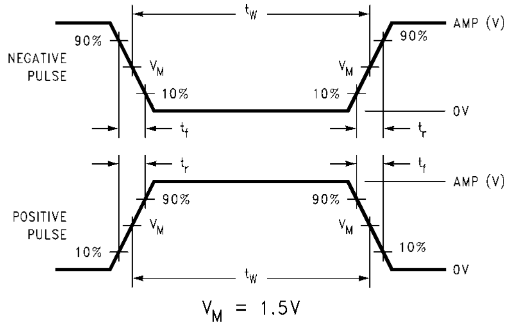
Note 5: C_{OUT} is measured at frequency f = 1 MHz, per MIL-STD-883, Method 3012.

AC Loading



*Includes jig and probe capacitance

Standard AC Test Load

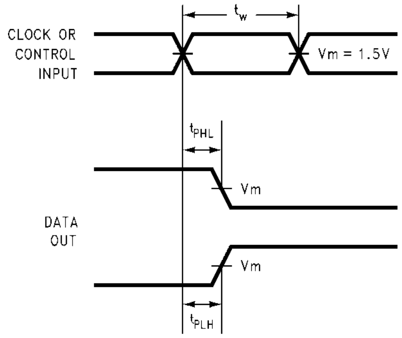


Test Input Signal Levels

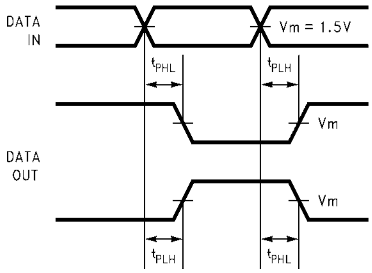
Amplitude	Rep. Rate	t_W	t_r	t_f
3.0V	1 MHz	500 ns	2.5 ns	2.5 ns

Test Input Signal Requirements

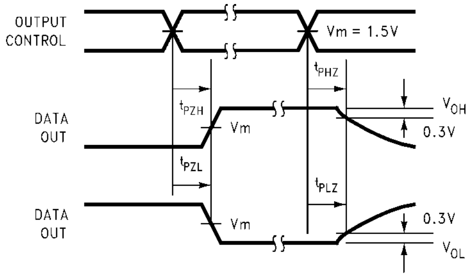
AC Waveforms



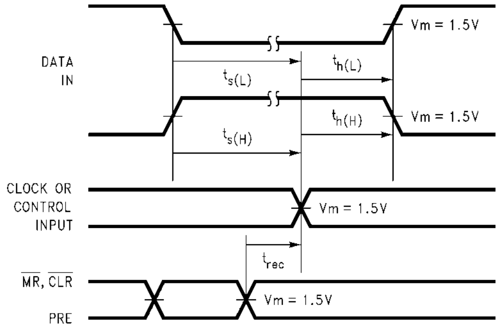
**Propagation Delay,
Pulse Width Waveforms**



**Propagation Delay Waveforms for
Inverting and Non-Inverting Functions**

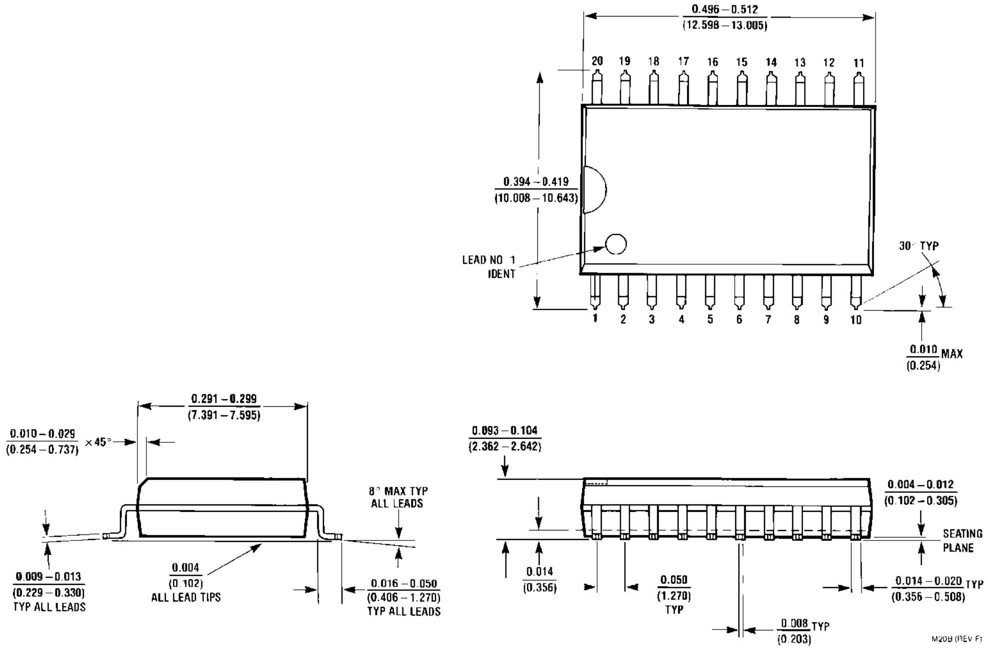


**3-STATE Output HIGH
and LOW Enable and Disable Times**



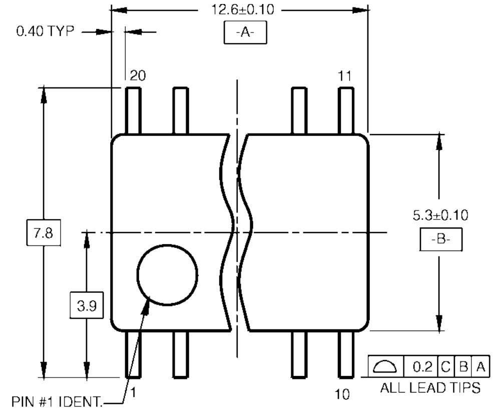
**Setup Time, Hold Time
and Recovery Time Waveforms**

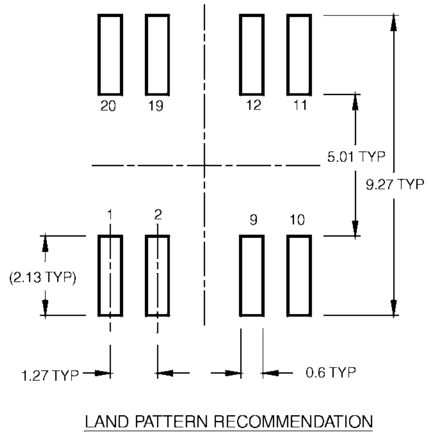
Physical Dimensions inches (millimeters) unless otherwise noted

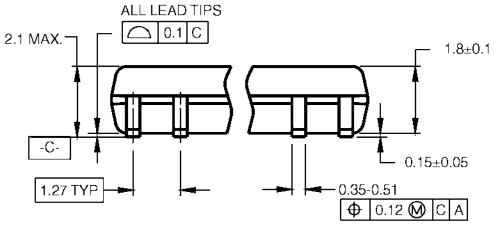


20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300" Wide Package Number M20B

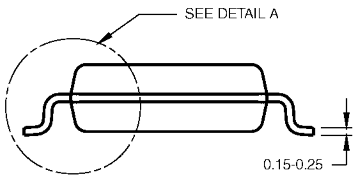
Physical Dimensions inches (millimeters) unless otherwise noted (Continued)







DIMENSIONS ARE IN MILLIMETERS



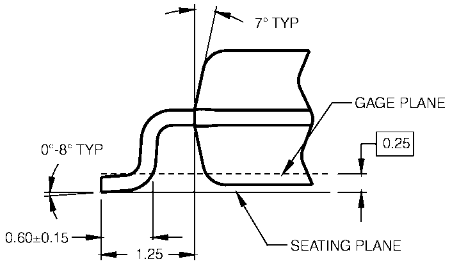
NOTES:

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.

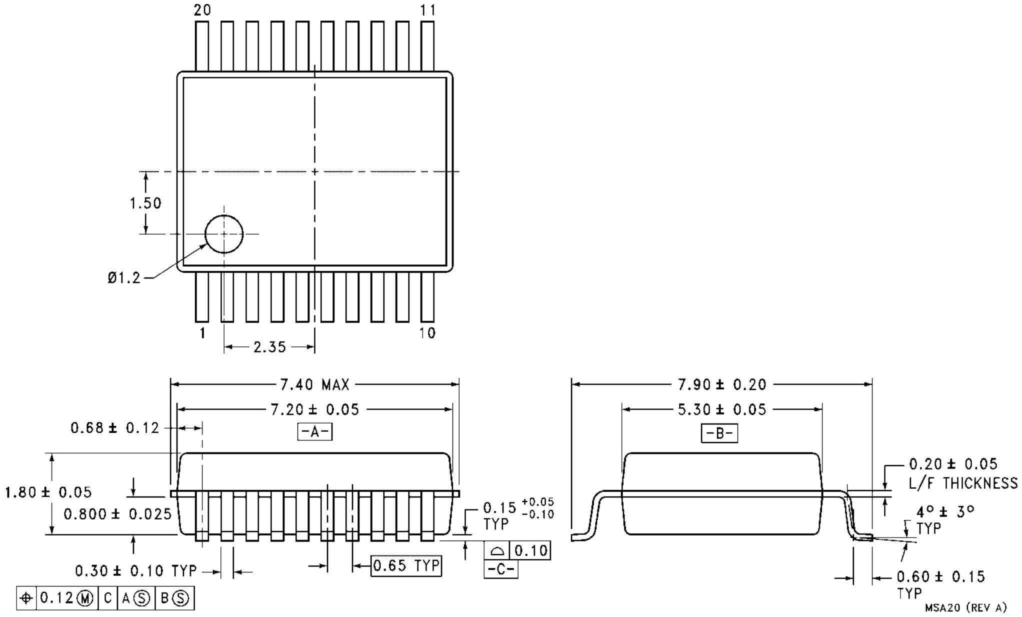
M20DRevB1



DETAIL A

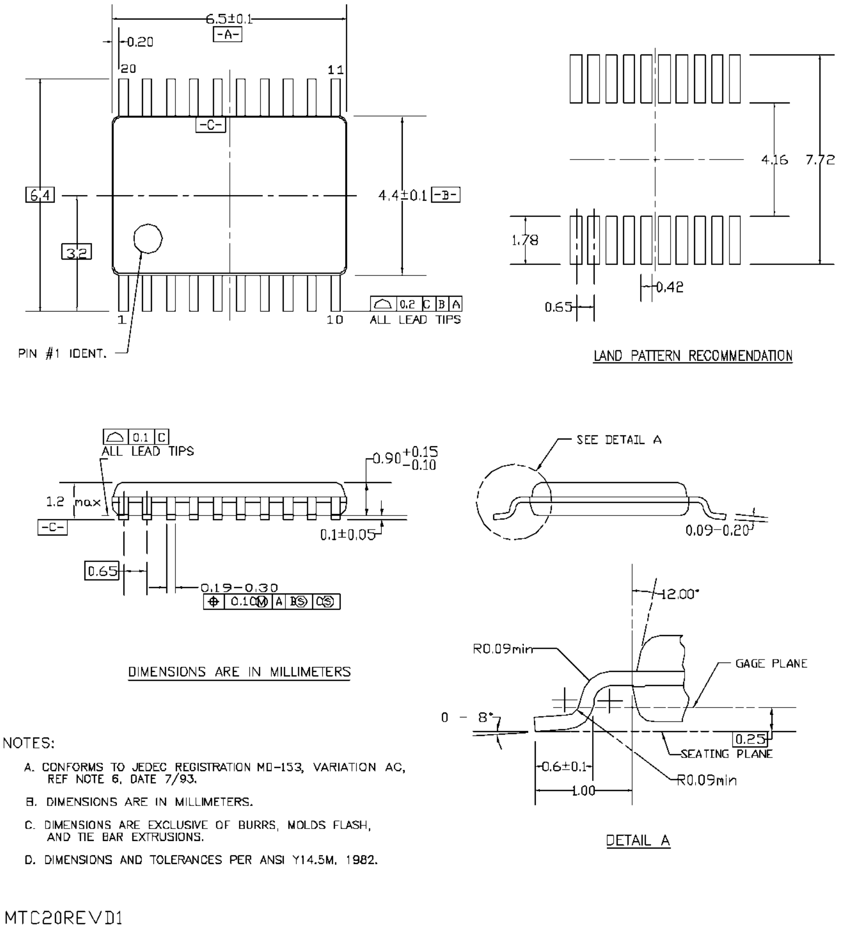
Pb-Free 20-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
Package Number M20D

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



20-Lead Shrink Small Outline Package (SSOP), JEDEC MO-150, 5.3mm Wide
Package Number MSA20

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



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.

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

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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.

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CERTIFICATE OF INCORPORATION

I hereby certify that

is this day incorporated in Hong Kong under the Companies Ordinance (Chapter 622 of the Laws of Hong Kong), and that this company is a limited company.

Registrar of Companies
Hong Kong Special Administrative Region

MEMBERSHIP
Certificate

The Aviation Suppliers Association has enrolled as a Regular Member

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