

MC74LCX244

Low-Voltage CMOS Octal Buffer

With 5 V-Tolerant Inputs and Outputs (3-State, Non-Inverting)

The MC74LCX244 is a high performance, non-inverting octal buffer operating from a 2.3 to 3.6 V supply. High impedance TTL compatible inputs significantly reduce current loading to input drivers while TTL compatible outputs offer improved switching noise performance. A V_I specification of 5.5 V allows MC74LCX244 inputs to be safely driven from 5 V devices. The MC74LCX244 is suitable for memory address driving and all TTL level bus oriented transceiver applications.

Current drive capability is 24 mA at the outputs. The Output Enable (\overline{OE}) input, when HIGH, disables the output by placing them in a HIGH Z condition.

Features

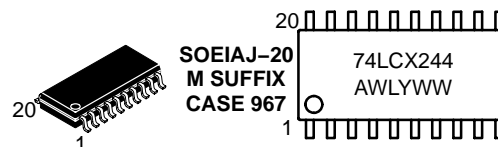
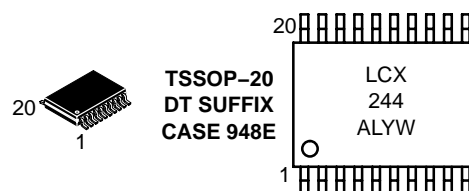
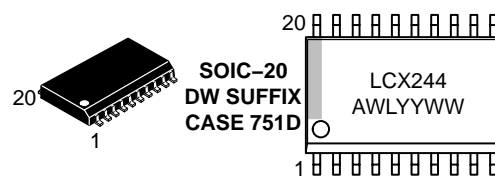
- Designed for 2.3 to 3.6 V V_{CC} Operation
- 5 V Tolerant – Interface Capability With 5 V TTL Logic
- Supports Live Insertion and Withdrawal
- I_{OFF} Specification Guarantees High Impedance When $V_{CC} = 0$ V
- LVTTL Compatible
- LVC MOS Compatible
- 24 mA Balanced Output Sink and Source Capability
- Near Zero Static Supply Current in All Three Logic States (10 μ A) Substantially Reduces System Power Requirements
- Latchup Performance Exceeds 500 mA
- ESD Performance: Human Body Model >2000 V
Machine Model >200 V
- Pb-Free Packages are Available*



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MARKING DIAGRAMS



A = Assembly Location
L, WL = Wafer Lot
Y, YY = Year
W, WW = Work Week

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 3 of this data sheet.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MC74LCX244

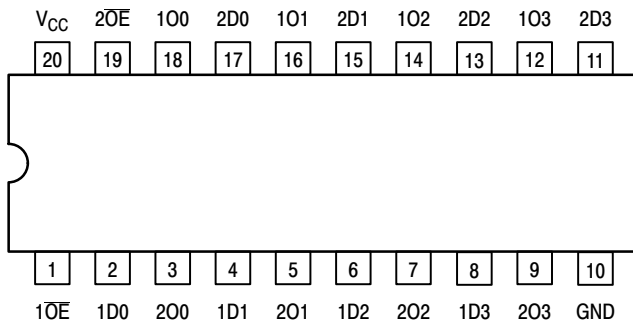


Figure 1. Pinout: 20-Lead (Top View)

PIN NAMES

PINS	FUNCTION
nOE	Output Enable Inputs
1Dn, 2Dn	Data Inputs
1On, 2On	3-State Outputs

TRUTH TABLE

INPUTS		OUTPUTS
1OE 2OE	1Dn 2Dn	1On, 2On
L	L	L
L	H	H
H	X	Z

H = High Voltage Level
 L = Low Voltage Level
 Z = High Impedance State
 X = High or Low Voltage Level and Transitions are Acceptable
 For I_{CC} reasons, DO NOT FLOAT Inputs

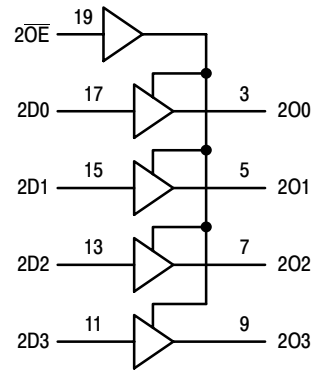
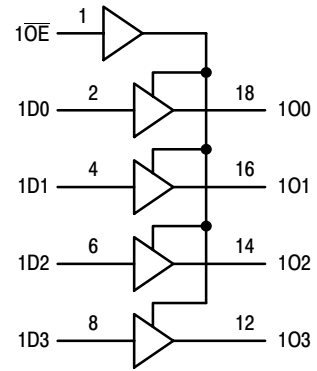


Figure 2. Logic Diagram

MC74LCX244

MAXIMUM RATINGS

Symbol	Parameter	Value	Condition	Unit
V _{CC}	DC Supply Voltage	-0.5 to +7.0		V
V _I	DC Input Voltage	-0.5 ≤ V _I ≤ +7.0		V
V _O	DC Output Voltage	-0.5 ≤ V _O ≤ +7.0	Output in 3-State	V
		-0.5 ≤ V _O ≤ V _{CC} + 0.5	Output in HIGH or LOW State (Note 1)	V
I _{IK}	DC Input Diode Current	-50	V _I < GND	mA
I _{OK}	DC Output Diode Current	-50	V _O < GND	mA
		+50	V _O > V _{CC}	mA
I _O	DC Output Source/Sink Current	±50		mA
I _{CC}	DC Supply Current Per Supply Pin	±100		mA
I _{GND}	DC Ground Current Per Ground Pin	±100		mA
T _{STG}	Storage Temperature Range	-65 to +150		°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. I_O absolute maximum rating must be observed.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Typ	Max	Unit	
V _{CC}	Supply Voltage	Operating	2.0	2.5, 3.3	3.6	V
		Data Retention Only	1.5	2.5, 3.3	3.6	
V _I	Input Voltage	0		5.5	V	
V _O	Output Voltage (HIGH or LOW State) (3-State)	0		V _{CC}	V	
		0		5.5		
I _{OH}	HIGH Level Output Current	V _{CC} = 3.0 V – 3.6 V		-24	mA	
		V _{CC} = 2.7 V – 3.0 V		-12		
I _{OL}	LOW Level Output Current	V _{CC} = 3.0 V – 3.6 V		24	mA	
		V _{CC} = 2.7 V – 3.0 V		12		
T _A	Operating Free-Air Temperature	-40		+85	°C	
Δt/ΔV	Input Transition Rise or Fall Rate, V _{IN} from 0.8 V to 2.0 V, V _{CC} = 3.0 V	0		10	ns/V	

ORDERING INFORMATION

Device	Package	Shipping†
MC74LCX244DW	SOIC-20	38 Units / Rail
MC74LCX244DWR2	SOIC-20	1000 Tape & Reel
MC74LCX244DR2G	SOIC-20 (Pb-Free)	1000 Tape & Reel
MC74LCX244DT	TSSOP-20*	75 Units / Rail
MC74LCX244DTR2	TSSOP-20*	2000 Tape & Reel
MC74LCX244MEL	SOEIAJ-20	2000 Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*This package is inherently Pb-Free.

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DC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic	Condition	T _A = -40°C to +85°C		Unit
			Min	Max	
V _{IH}	HIGH Level Input Voltage (Note 2)	2.3 V ≤ V _{CC} ≤ 2.7 V	1.7		V
		2.7 V ≤ V _{CC} ≤ 3.6 V	2.0		
V _{IL}	LOW Level Input Voltage (Note 2)	2.3 V ≤ V _{CC} ≤ 2.7 V		0.7	V
		2.7 V ≤ V _{CC} ≤ 3.6 V		0.8	
V _{OH}	HIGH Level Output Voltage	2.3 V ≤ V _{CC} ≤ 3.6 V; I _{OL} = 100 μA	V _{CC} - 0.2		V
		V _{CC} = 2.3 V; I _{OH} = -8 mA	1.8		
		V _{CC} = 2.7 V; I _{OH} = -12 mA	2.2		
		V _{CC} = 3.0 V; I _{OH} = -18 mA	2.4		
		V _{CC} = 3.0 V; I _{OH} = -24 mA	2.2		
V _{OL}	LOW Level Output Voltage	2.3 V ≤ V _{CC} ≤ 3.6 V; I _{OL} = 100 μA		0.2	V
		V _{CC} = 2.3 V; I _{OL} = 8 mA		0.6	
		V _{CC} = 2.7 V; I _{OL} = 12 mA		0.4	
		V _{CC} = 3.0 V; I _{OL} = 16 mA		0.4	
		V _{CC} = 3.0 V; I _{OL} = 24 mA		0.55	
I _I	Input Leakage Current	2.3 V ≤ V _{CC} ≤ 3.6 V; 0 V ≤ V _I ≤ 5.5 V		±5	μA
I _{OZ}	3-State Output Current	2.3 ≤ V _{CC} ≤ 3.6 V; 0 V ≤ V _O ≤ 5.5 V; V _I = V _{IH} or V _{IL}		±5	μA
I _{OFF}	Power-Off Leakage Current	V _{CC} = 0 V; V _I or V _O = 5.5 V		10	μA
I _{CC}	Quiescent Supply Current	2.3 ≤ V _{CC} ≤ 3.6 V; V _I = GND or V _{CC}		10	μA
		2.3 ≤ V _{CC} ≤ 3.6 V; 3.6 ≤ V _I or V _O ≤ 5.5 V		±10	
ΔI _{CC}	Increase in I _{CC} per Input	2.3 ≤ V _{CC} ≤ 3.6 V; V _{IH} = V _{CC} - 0.6 V		500	μA

2. These values of V_I are used to test DC electrical characteristics only.

AC CHARACTERISTICS (t_R = t_F = 2.5 ns; R_L = 500 Ω)

Symbol	Parameter	Waveform	Limits						Unit
			T _A = -40°C to +85°C						
			V _{CC} = 3.0 V to 3.6 V		V _{CC} = 2.7 V		V _{CC} = 2.5 V ±0.2		
			C _L = 50 pF		C _L = 50 pF		C _L = 30 pF		
		Min	Max	Min	Max	Min	Max		
t _{PLH} t _{PHL}	Propagation Delay Input to Output	1	1.5	6.5	1.5	7.5	1.5	7.8	ns
t _{PZH} t _{PZL}	Output Enable Time to High and Low Level	2	1.5	8.0	1.5	9.0	1.5	10	ns
t _{PHZ} t _{PLZ}	Output Disable Time From High and Low Level	2	1.5	7.0	1.5	8.0	1.5	8.4	ns
t _{OSSL} t _{OSLH}	Output-to-Output Skew (Note 3)			1.0					ns

3. Skew is defined as the absolute value of the difference between the actual propagation delay for any two separate outputs of the same device. The specification applies to any outputs switching in the same direction, either HIGH-to-LOW (t_{OSSL}) or LOW-to-HIGH (t_{OSLH}); parameter guaranteed by design.

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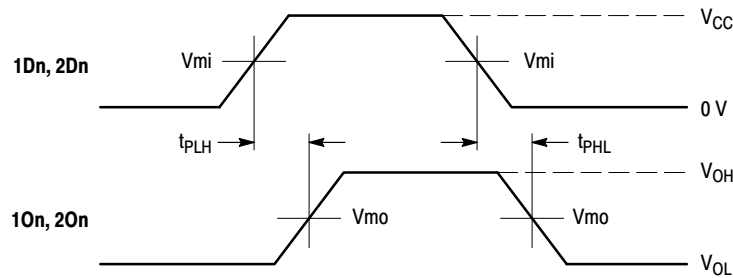
DYNAMIC SWITCHING CHARACTERISTICS

Symbol	Characteristic	Condition	T _A = +25°C			Unit
			Min	Typ	Max	
V _{OLP}	Dynamic LOW Peak Voltage (Note 4)	V _{CC} = 3.3 V, C _L = 50 pF, V _{IH} = 3.3 V, V _{IL} = 0 V V _{CC} = 2.5 V, C _L = 30 pF, V _{IH} = 2.5 V, V _{IL} = 0 V		0.8 0.6		V
V _{OLV}	Dynamic LOW Valley Voltage (Note 4)	V _{CC} = 3.3 V, C _L = 50 pF, V _{IH} = 3.3 V, V _{IL} = 0 V V _{CC} = 2.5 V, C _L = 30 pF, V _{IH} = 2.5 V, V _{IL} = 0 V		-0.8 -0.6		V

4. Number of outputs defined as "n". Measured with "n-1" outputs switching from HIGH-to-LOW or LOW-to-HIGH. The remaining output is measured in the LOW state.

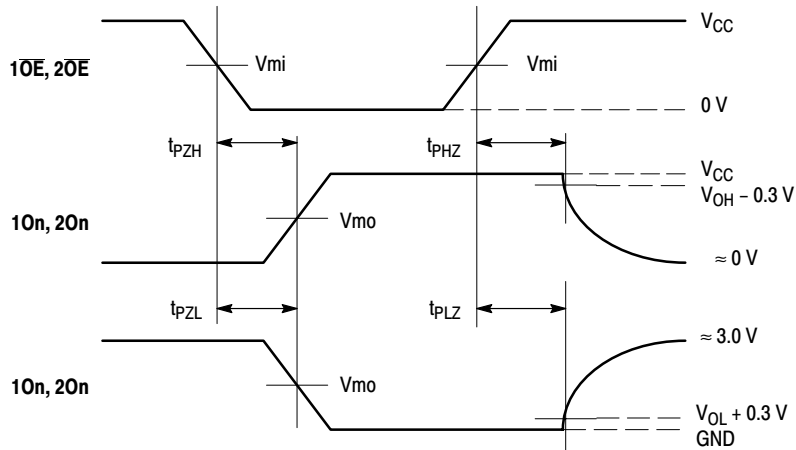
CAPACITIVE CHARACTERISTICS

Symbol	Parameter	Condition	Typical	Unit
C _{IN}	Input Capacitance	V _{CC} = 3.3 V, V _I = 0 V or V _{CC}	7	pF
C _{OUT}	Output Capacitance	V _{CC} = 3.3 V, V _I = 0 V or V _{CC}	8	pF
C _{PD}	Power Dissipation Capacitance	10 MHz, V _{CC} = 3.3 V, V _I = 0 V or V _{CC}	25	pF



WAVEFORM 1 - PROPAGATION DELAYS

t_R = t_F = 2.5 ns, 10% to 90%; f = 1 MHz; t_W = 500 ns



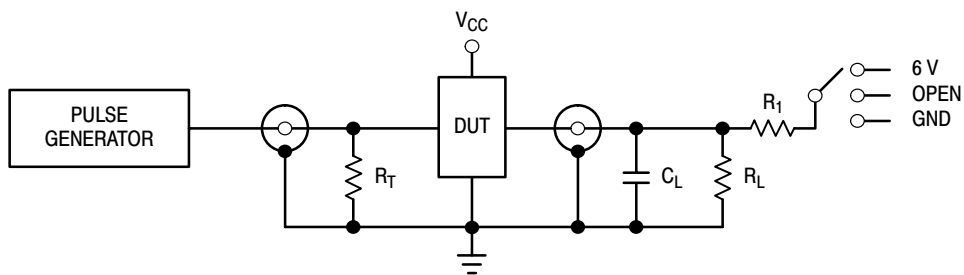
WAVEFORM 2 - OUTPUT ENABLE AND DISABLE TIMES

t_R = t_F = 2.5 ns, 10% to 90%; f = 1 MHz; t_W = 500 ns

Figure 3. AC Waveforms

Symbol	V _{CC}		
	3.3 V ± 0.3 V	2.7 V	2.5 V ± 0.2 V
V _{mi}	1.5 V	1.5 V	V _{CC} /2
V _{mo}	1.5 V	1.5 V	V _{CC} /2
V _{HZ}	V _{OL} + 0.3 V	V _{OL} + 0.3 V	V _{OL} + 0.15 V
V _{LZ}	V _{OH} - 0.3 V	V _{OH} - 0.3 V	V _{OH} - 0.15 V

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TEST	SWITCH
t_{PLH} , t_{PHL}	Open
t_{PZL} , t_{PLZ}	6 V at $V_{CC} = 3.3 \pm 0.3$ V 6 V at $V_{CC} = 2.5 \pm 0.2$ V
Open Collector/Drain t_{PLH} and t_{PHL}	6 V
t_{PZH} , t_{PHZ}	GND

$C_L = 50$ pF at $V_{CC} = 3.3 \pm 0.3$ V or equivalent (includes jig and probe capacitance)

$C_L = 30$ pF at $V_{CC} = 2.5 \pm 0.2$ V or equivalent (includes jig and probe capacitance)

$R_L = R_1 = 500 \Omega$ or equivalent

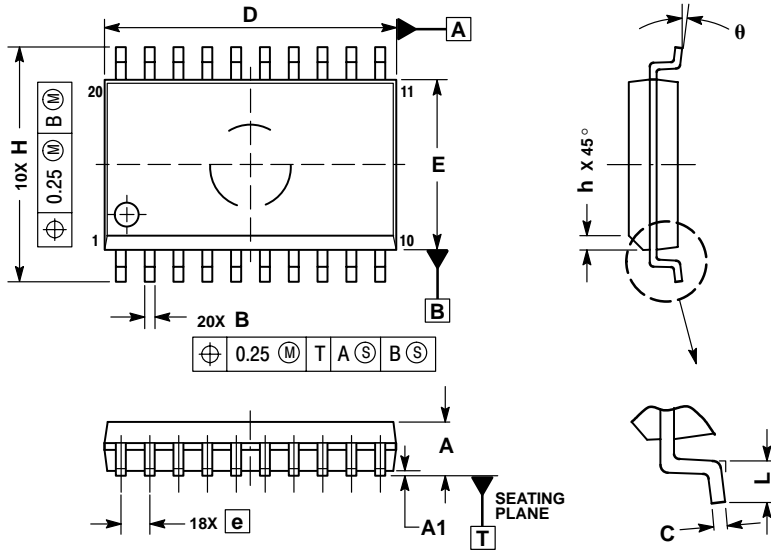
$R_T = Z_{OUT}$ of pulse generator (typically 50Ω)

Figure 4. Test Circuit

MC74LCX244

PACKAGE DIMENSIONS

SOIC-20
DW SUFFIX
CASE 751D-05
ISSUE G

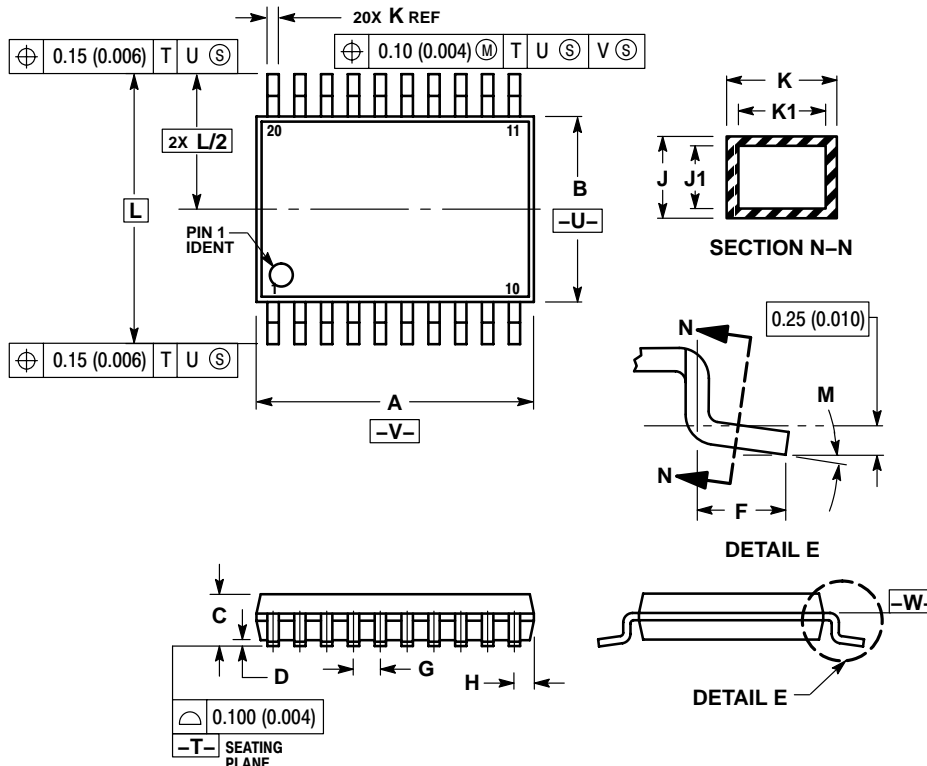


NOTES:

1. DIMENSIONS ARE IN MILLIMETERS.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
3. DIMENSIONS D AND E DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
5. DIMENSION B DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.13 TOTAL IN EXCESS OF B DIMENSION AT MAXIMUM MATERIAL CONDITION.

DIM	MILLIMETERS	
	MIN	MAX
A	2.35	2.65
A1	0.10	0.25
B	0.35	0.49
C	0.23	0.32
D	12.65	12.95
E	7.40	7.60
e	1.27 BSC	
H	10.05	10.55
h	0.25	0.75
L	0.50	0.90
θ	0°	7°

TSSOP-20
DT SUFFIX
CASE 948E-02
ISSUE B



NOTES:

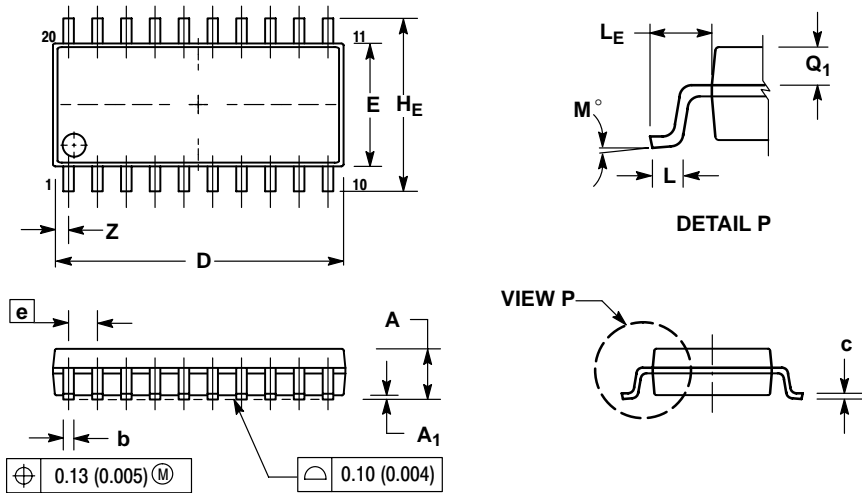
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
4. DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE.
5. DIMENSION K DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE K DIMENSION AT MAXIMUM MATERIAL CONDITION.
6. TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY.
7. DIMENSION A AND B ARE TO BE DETERMINED AT DATUM PLANE -W-.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.40	6.60	0.252	0.260
B	4.30	4.50	0.169	0.177
C	---	1.20	---	0.047
D	0.05	0.15	0.002	0.006
F	0.50	0.75	0.020	0.030
G	0.65 BSC		0.026 BSC	
H	0.27	0.37	0.011	0.015
J	0.09	0.20	0.004	0.008
J1	0.09	0.16	0.004	0.006
K	0.19	0.30	0.007	0.012
K1	0.19	0.25	0.007	0.010
L	6.40 BSC		0.252 BSC	
M	0°	8°	0°	8°

MC74LCX244

PACKAGE DIMENSIONS


SOEIAJ-20
M SUFFIX
CASE 967-01
ISSUE O



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS AND ARE MEASURED AT THE PARTING LINE. MOLD FLASH OR PROTRUSIONS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
4. TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY.
5. THE LEAD WIDTH DIMENSION (b) DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE LEAD WIDTH DIMENSION AT MAXIMUM MATERIAL CONDITION. DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT. MINIMUM SPACE BETWEEN PROTRUSIONS AND ADJACENT LEAD TO BE 0.46 (0.018).

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	---	2.05	---	0.081
A ₁	0.05	0.20	0.002	0.008
b	0.35	0.50	0.014	0.020
c	0.18	0.27	0.007	0.011
D	12.35	12.80	0.486	0.504
E	5.10	5.45	0.201	0.215
e	1.27 BSC		0.050 BSC	
H _E	7.40	8.20	0.291	0.323
L	0.50	0.85	0.020	0.033
L _E	1.10	1.50	0.043	0.059
M	0°	10°	0°	10°
Q ₁	0.70	0.90	0.028	0.035
Z	---	0.81	---	0.032

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[Low Voltage \(<](#)

Rev. 5 (86.0kB)

[»Product Change Notification \(23\)](#)

Product Description

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- LVTTL Compatible
- LVCMOS Compatible
- 24mA Balanced Output Sink and Source Capability
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- Latchup Performance Exceeds 500mA
- ESD Performance: Human Body Model >2000V; Machine Model >200V
- Pb-Free Packages are Available*

Technical Information

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Product	New	Pb-free	Description	Status	Package			Container		Budgetary Price/Unit
					Type	Pins	Case Outline	MSL*	Type Qty.	
MC74LCX244DT	<input type="checkbox"/>		Low Voltage Octal Noninverting Buffer, 3 State	Active, Not Rec	TSSOP 20 LEAD	20	948E-02	1	Rail 75	\$0.2667
MC74LCX244DTG	<input type="checkbox"/>		Low Voltage Octal Noninverting Buffer, 3 State	Active	TSSOP 20 LEAD	20	948E-02	1	Rail 75	\$0.2667 Order Samples Inventory
MC74LCX244DTR2	<input type="checkbox"/>		Low Voltage Octal Noninverting Buffer, 3 State	Active, Not Rec	TSSOP 20 LEAD	20	948E-02	1	Tape and Reel 2500	\$0.2667 Inventory

<ul style="list-style-type: none"> ■ 2 V (84) ■ Transconductance Amplifiers (9) ○ <input checked="" type="checkbox"/> Comparators (104) <ul style="list-style-type: none"> ■ Dual Comparators (37) ■ Quad Comparators (42) ■ Single Comparators (25) ○ <input checked="" type="checkbox"/> Analog Switches (270) <ul style="list-style-type: none"> ■ Audio Switches (25) ■ Multimedia / USB Data Switches (7) ■ General Purpose Switches (238) ○ <input checked="" type="checkbox"/> Thyristors (427) <ul style="list-style-type: none"> ■ Programmable Unijunction Transistors (PUTs) (13) ■ SIDACs (10) ■ Silicon Controlled Rectifiers (SCRs) (184) ■ Thyristor Surge Protection Devices (TSPDs) (61) ■ Triacs (159) ○ <input checked="" type="checkbox"/> Diodes (2313) <ul style="list-style-type: none"> ■ Schottky Diodes (427) ■ Small Signal Switching Diodes (206) ■ High Current Voltage Suppressors (9) 	<ul style="list-style-type: none"> MC74LCX244DTR2G MC74LCX244DWG MC74LCX244DWR2G MC74LCX244MELG MC74LCX244DW MC74LCX244DWR2 MC74LCX244M MC74LCX244MEL 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> 	<ul style="list-style-type: none"> Low Voltage Octal Noninverting Active Buffer, 3 State Low Voltage Octal Noninverting Active Buffer, 3 State Low Voltage Octal Noninverting Active Buffer, 3 State Low Voltage Octal Noninverting Active Buffer, 3 State Low Voltage Octal Noninverting Active Buffer, 3 State Low Voltage Octal Noninverting Active Buffer, 3 State Low Voltage Octal Noninverting Last Shipments Buffer, 3 State Low Voltage Octal Noninverting Last Shipments Buffer, 3 State 	<ul style="list-style-type: none"> TSSOP 20 LEAD SOIC-20 WB SOIC-20 WB SOEIAJ-20 SOIC-20 WB SOIC-20 WB SOEIAJ-20 SOEIAJ-20 	<ul style="list-style-type: none"> 20 20 20 20 20 20 20 20 	<ul style="list-style-type: none"> 948E-02 751D-05 751D-05 967-01 751D-05 751D-05 967-01 967-01 	<ul style="list-style-type: none"> 1 3 3 3 1 1 3 3 	<ul style="list-style-type: none"> Tape and 2500 Reel Tube 38 Tape and 1000 Reel Tape and 2000 Reel Rail 38 Tape and 1000 Reel Rail 40 Tape and 2000 Reel 	<ul style="list-style-type: none"> \$0.2667 \$0.2933 \$0.2933 \$0.3333 \$0.2933 \$0.2933 	<ul style="list-style-type: none"> Order Samples Inventory Order Samples Inventory Order Samples Inventory Order Samples Inventory Inventory Inventory Rochester Contact Sales Office Rochester Contact Sales Office
<p>Moisture Sensitivity level (MSL) for surface mount devices (lead free measured at 260°C reflow, non lead free at 235°C reflow)</p> <p>I_O Max (mA) : 24</p> <p>Channels : 8</p> <p>V_{CC} Max (V) : 3.6</p> <p>: 6.5</p>										

- [Transient Voltage Suppressors \(TVS\) \(696\)](#)
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 - [RF Transistors \(up to 2 GHz\) \(25\)](#)
- [FETs \(802\)](#)
 - [JFETs \(51\)](#)
 - [MOSFETs \(722\)](#)
 - [Protected](#)

t_{pd} Max (ns)
 V_{CC} Min (V) : 2
 Package : TSSOP 20 LEAD
 Output : 3-State
 Market Leadtime (weeks) : 2 to 4
 ON Semiconductor (2007-01-20) : 2025
 Channels : 8
 I_O Max (mA) : 24
 V_{CC} Max (V) : 3.6
 t_{pd} Max (ns) : 6.5
 V_{CC} Min (V) : 2
 Output : 3-State
 Package : TSSOP 20 LEAD
 Market Leadtime (weeks) : 2 to 4
 Arrow (2007-01-23) : In Stock
 Avnet (2007-01-23) : >1K
 I_O Max (mA) : 24
 Channels : 8
 V_{CC} Max (V) : 3.6
 t_{pd} Max (ns) : 6.5
 V_{CC} Min (V) : 2
 Package : TSSOP 20 LEAD
 Output : 3-State
 Market Leadtime (weeks) : 2 to 4
 Digi-Key (2007-01-23) : >1K
 ON Semiconductor (2007-01-20) : 52500
 Channels : 8
 I_O Max (mA) : 24
 V_{CC} Max (V) : 3.6
 t_{pd} Max (ns) : 6.5
 V_{CC} Min (V) : 2
 Package : TSSOP 20 LEAD
 Output : 3-State
 Market Leadtime (weeks) : 2 to 4
 Arrow (2007-01-23) : In Stock

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- [MOSFETs \(29\)](#) Avnet (2007-01-23) :>1K
- [Circuit Protection \(242\)](#) Digi-Key (2007-01-23) :>1K
 - Future Electronics (2007-01-23) : In Stock
 - [EMI and RFI Filters \(48\)](#) ON Semiconductor (2007-01-20) : 277356
 - [Audio Filters \(8\)](#) P&S (2007-01-23) :>1K
 - Channels : 8
 - [Data Line Filters \(29\)](#) I_O Max (mA) : 24
 - V_{CC} Max (V) : 3.6
 - [USB Filters \(11\)](#) t_{pd} Max (ns) : 6.5
 - [Transient Voltage/ESD Protection \(133\)](#) V_{CC} Min (V) : 2
 - [General ESD \(92\)](#) Output : 3-State
 - Package : SOIC-20 WB
 - [Load Protection Switch \(4\)](#) Market Leadtime (weeks) : 2 to 4
 - Arrow (2007-01-23) : In Stock
 - [Low Capacitance ESD \(37\)](#) Avnet (2007-01-23) :>1K
 - ON Semiconductor (2007-01-20) : 6498
 - [Telecom Line Protection \(61\)](#) I_O Max (mA) : 24
 - Channels : 8
 - V_{CC} Max (V) : 3.6
 - t_{pd} Max (ns) : 6.5
 - V_{CC} Min (V) : 2
 - Output : 3-State
 - Package : SOIC-20 WB
 - [Thyristor Surge Protection Devices \(TSPDs\) \(61\)](#) Market Leadtime (weeks) : 4 to 8
 - Digi-Key (2007-01-23) :>1K
 - [Clock Management \(808\)](#) Future Electronics (2007-01-23) : In Stock
 - [Clock Distribution \(252\)](#) ON Semiconductor (2007-01-20) : 1000
 - [Clock Generation \(269\)](#) Channels : 8
 - I_O Max (mA) : 24
 - V_{CC} Max (V) : 3.6
 - t_{pd} Max (ns) : 6.5
 - V_{CC} Min (V) : 2
 - Package : SOEIAJ-20
 - [Amplifier \(23\)](#) Output : 3-State
 - [Divider \(197\)](#) Market Leadtime (weeks) : 4 to 8
 - [Phase / Frequency Detector \(PLL\) \(18\)](#) Digi-Key (2007-01-23) :>1K
 - [Prescaler \(PLL\) \(21\)](#) -

- [VCO \(PLL\) \(10\)](#) ON Semiconductor (2007-01-20) : 4000
- [Clock Synthesis \(62\)](#) I_O Max (mA) : 24
- [EMI Suppression](#) Channels : 8
- [Clocks \(12\)](#) V_{CC} Max (V) : 3.6
- [Skew Management \(38\)](#) t_{pd} Max (ns) : 6.5
- [Zero Delay Buffers \(175\)](#) V_{CC} Min (V) : 2
- [Package](#) : SOIC-20 WB
- [Output](#) : 3-State
- o  [Differential Logic \(ECL\) \(1810\)](#) Market Leadtime (weeks) : 2 to 4
- [Buffers \(112\)](#) Arrow (2007-01-23) : In Stock
- [Coax Drivers \(23\)](#) Avnet (2007-01-23) : <1K
- [Comparators \(15\)](#) ON Semiconductor (2007-01-20) : 5244
- [Counters \(46\)](#) I_O Max (mA) : 24
- [Channels](#) : 8
- [Crosspoint Switches \(13\)](#) V_{CC} Max (V) : 3.6
- [Flip Flops \(224\)](#) t_{pd} Max (ns) : 6.5
- [Gates \(282\)](#) V_{CC} Min (V) : 2
- [Inverters \(6\)](#) Output : 3-State
- [Latches \(40\)](#) Package : SOIC-20 WB
- [Miscellaneous \(27\)](#) Market Leadtime (weeks) : 4 to 8
- [Multiplexers \(220\)](#) Future Electronics (2007-01-23) : In Stock
- [Receiver / Drivers \(283\)](#) I_O Max (mA) : 24
- [Registers \(97\)](#) Channels : 8
- [Serial / Parallel Converters \(33\)](#) V_{CC} Max (V) : 3.6
- [Translators \(389\)](#) t_{pd} Max (ns) : 6.5
- o  [Interface \(203\)](#) V_{CC} Min (V) : 2
- [Data Transmission \(79\)](#) Package : SOEIAJ-20
- [General Interface \(10\)](#) Output : 3-State
- [Load / Relay Drivers \(21\)](#) Market Leadtime (weeks) : 12+
- Channels : 8
- I_O Max (mA) : 24
- V_{CC} Max (V) : 3.6
- t_{pd} Max (ns) : 6.5
- V_{CC} Min (V) : 2
- Package : SOEIAJ-20

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Output : 3-State
 Market Leadtime (weeks) : 12+
 ON Semiconductor (2007-01-20) : 12000
 Selected Electrical Specifications

For full electrical specifications, see the [datasheet](#).

Symbol	Boundary	Value	Unit	Condition
V_{CC}	min	2	V	
V_{CC}	max	3.6	V	
t_{pd}	max	6.5	ns	Input to Output, $T_A = 25$ degrees C, $C_L = 50$ pF, $V_{CC} = 3.3$ Volts
I_O	max	24	mA	$V_{CC} = 3$ Volts
Output		3-State		
Channels		8		

For complete packaging information, see the [datasheet](#)

» [View Material Composition](#)

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