74F2244SC Datasheet

DiGi Electronics Part Number	74F2244SC-DG
Manufacturer	onsemi
Manufacturer Product Number	74F2244SC
Description	IC BUF NON-INVERT 5.5V 20SOIC
Detailed Description	Buffer, Non-Inverting 2 Element 4 Bit per Element 3 -State Output 20-SOIC

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
74F2244SC	onsemi
Series:	Product Status:
74F	Obsolete
Logic Type:	Number of Elements:
Buffer, Non-Inverting	2
Number of Bits per Element:	Input Type:
4	-
Output Type:	Current - Output High, Low:
3-State	3mA, 12mA
Voltage - Supply:	Operating Temperature:
4.5V ~ 5.5V	0°C ~ 70°C (TA)
Mounting Type:	Package / Case:
Surface Mount	20-SOIC (0.295", 7.50mm Width)
Supplier Device Package:	Base Product Number:
20-SOIC	74F2244

Environmental & Export classification

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

FAIRCHILD SEMICONDUCTOR™

October 1988
Revised March 1999

74F2244
Octal Buffer/Line Driver with 25Ω Series Resistors in Outputs

General Description

The F2244 is an octal buffer/line driver designed to drive the capacitive inputs of MOS memory drivers, address drivers, clock drivers and bus-oriented transmitters/receivers.

The 25Ω series resistors in the outputs reduce ringing and eliminate the need for external resistors.

Features

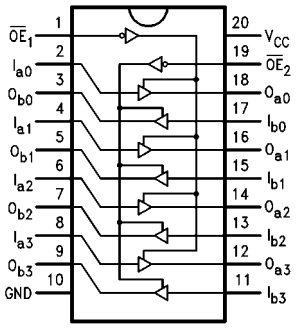
- 3-STATE outputs drive bus lines or buffer memory address registers
- 12 mA source current
- 25Ω series resistors in outputs eliminate the need for external resistors.
- Designed to drive the capacitive inputs of MOS devices
- Guaranteed 4000V minimum ESD protection

Ordering Code:

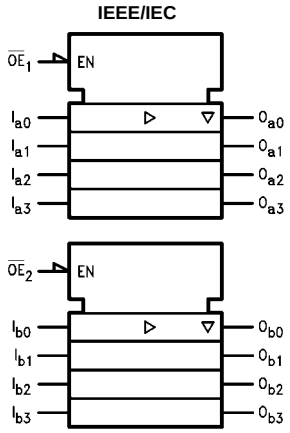
Order Number	Package Number	Package Description
74F2244SC	M20B	20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300 Wide
74F2244MSA	MSA20	20-Lead Shrink Small Outline Package (SSOP), EIAJ TYPE II, 5.3mm Wide
74F2244PC	N20A	20-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide

Devices also available in Tape and Reel. Specify by appending the suffix letter "X" to the ordering code.

Connection Diagram



Logic Symbol



Unit Loading/Fan Out

Pin Names	Description	U.L. HIGH/LOW	Input I_{IH}/I_{IL} Output I_{OH}/I_{OL}
$\overline{OE}_1$, $\overline{OE}_2$	3-STATE Output Enable Input (Active LOW)	1.0/1.667	20 μA/–1 mA
OE_2	3-STATE Output Enable Input (Active HIGH)	1.0/1.667	20 μA/–1 mA
I_{an}, I_{bn}	Inputs	1.0/2.667 (Note 1)	20 μA/–1.6 mA
O_{an},O_{bn}	Outputs	750/20	–15 mA/12 mA

Note 1: Worst-case F2244 disabled

Truth Table

$\overline{OE}_1$	I_{an}	O_{an}	$\overline{OE}_2$	I_{bn}	O_{bn}
H	X	Z	H	X	Z
L	H	H	L	H	H
L	L	L	L	L	L

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

Absolute Maximum Ratings(Note 2)

Storage Temperature	−65°C to +150°C
Ambient Temperature under Bias	−55°C to +125°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 3)	−0.5V to +7.0V
Input Current (Note 3)	−30 mA to +5.0 mA
Voltage Applied to Output	
in HIGH State (with V_{CC} = 0V)	
Standard Output	−0.5V to V_{CC}
3-STATE Output	−0.5V to +5.5V
Current Applied to Output	
in LOW State (Max)	twice the rated I_{OL} (mA)
ESD Last Passing Voltage (Min)	4000V

Recommended Operating Conditions

Free Air Ambient Temperature	0°C to +70°C
Supply Voltage	+4.5V to +5.5V

Note 2: 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 3: Either voltage limit or current limit is sufficient to protect inputs.

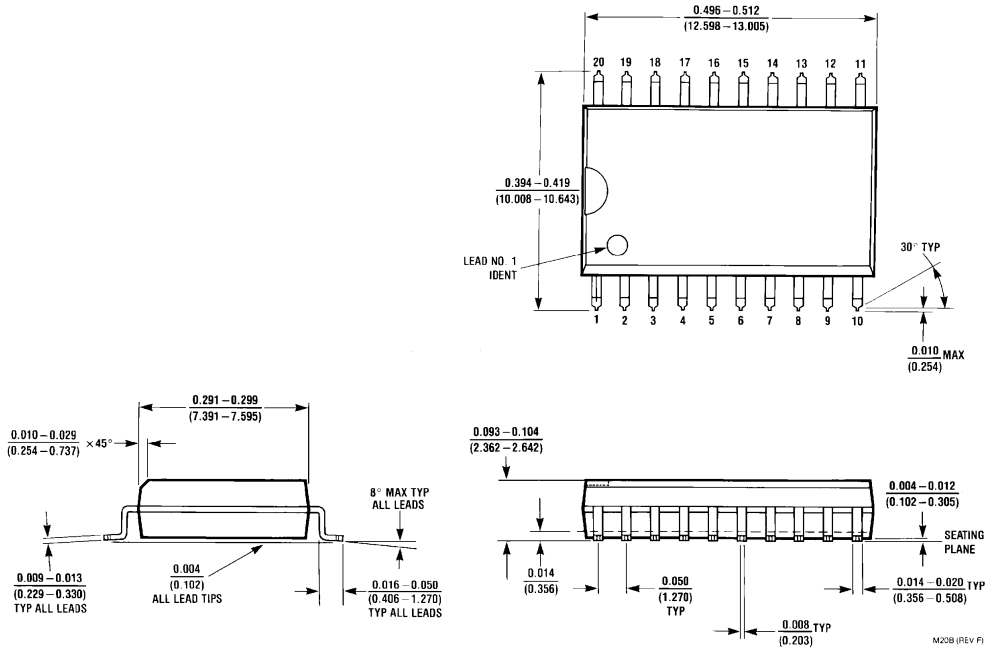
DC Electrical Characteristics

Symbol	Parameter		Min	Typ	Max	Units	V_{CC}	Conditions
V_{IH}	Input HIGH Voltage		2.0			V		Recognized as a HIGH Signal
V_{IL}	Input LOW Voltage				0.8	V		Recognized as a LOW Signal
V_{CD}	Input Clamp Diode Voltage				−1.2	V	Min	I_{IN} = −18 mA
V_{OH}	Output HIGH Voltage	10% V_{CC}	2.4			V	Min	I_{OH} = −3 mA
		10% V_{CC}	2.0					I_{OH} = −15 mA
		5% V_{CC}	2.7					I_{OH} = −3 mA
V_{OL}	Output LOW Voltage				0.50	V	Min	I_{OL} = 1 mA
					0.75			I_{OL} = 12 mA
I_{IH}	Input HIGH Current				5.0	µA	Max	V_{IN} = 2.7V
I_{BVI}	Input HIGH Current Breakdown Test				7.0	µA	Max	V_{IN} = 7.0V
I_{CEX}	Output HIGH Leakage Current				50	µA	Max	V_{OUT} = V_{CC}
V_{ID}	Input Leakage Test		4.75			V	0.0	I_{ID} = 1.9 µA All other pins grounded
I_{OD}	Output Leakage Circuit Current				3.75	µA	0.0	V_{IOD} = 150 mV All other pins grounded
I_{IL}	Input LOW Current				−1.0	mA	Max	V_{IN} = 0.5V ($\overline{OE_1}$, $\overline{OE_2}$, OE_2)
					−1.6			V_{IN} = 0.5V (I_n)
I_{OZH}	Output Leakage Current				50	µA	Max	V_{OUT} = 2.7V
I_{OZL}	Output Leakage Current				−50	µA	Max	V_{OUT} = 0.5V
I_{OS}	Output Short-Circuit Current		−100		−225	mA	Max	V_{OUT} = 0V
I_{CCH}	Power Supply Current			40	60	mA	Max	V_O = HIGH
I_{CCL}	Power Supply Current			60	90	mA	Max	V_O = LOW
I_{CCZ}	Power Supply Current			60	90	mA	Max	V_O = HIGH Z

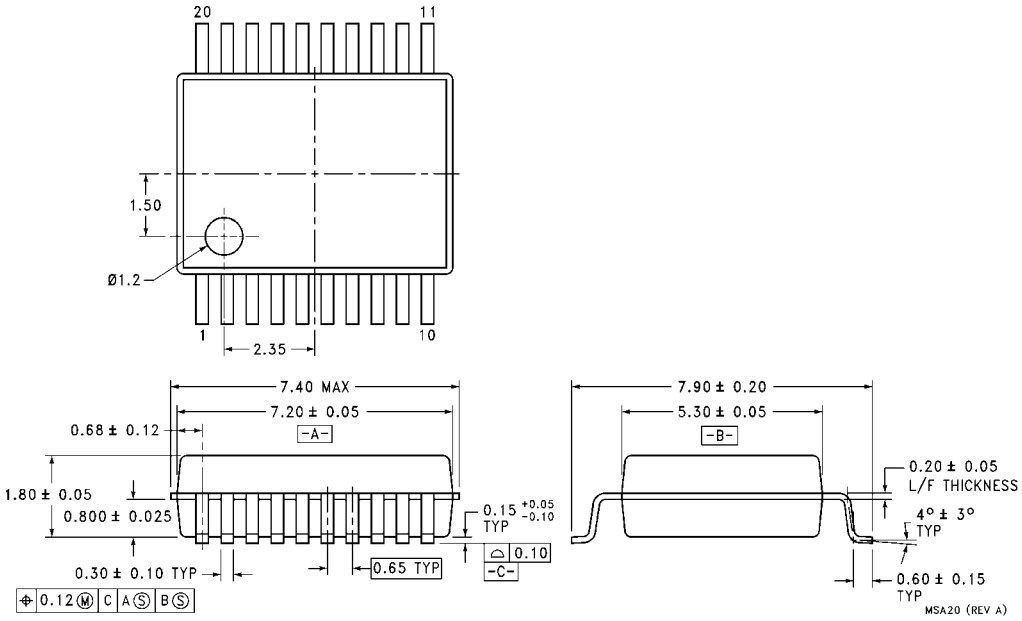
AC Electrical Characteristics

Symbol	Parameter	$T_A = +25°C$, $V_{CC} = +5.0V$, $C_L = 50$ pF			$T_A = -55°C$ to $+125°C$, $C_L = 50$ pF		$T_A = 0°C$ to $+70°C$, $C_L = 50$ pF		Units
		Min	Typ	Max	Min	Max	Min	Max	
t_{PLH}	Propagation Delay	1.5		7.0	2.0	6.5	1.5	7.0	ns
t_{PHL}	Data to Output	2.5		8.0	2.0	7.0	2.0	8.0	
t_{PZH}	Output Enable Time	1.5		9.0	2.0	7.0	1.0	9.5	
t_{PZL}		2.5		11.5	2.0	8.5	2.5	12.0	ns
t_{PHZ}	Output Disable Time	1.5		9.0	2.0	7.0	1.0	9.5	
t_{PLZ}		1.5		8.5	2.0	7.5	1.5	9.5	

Physical Dimensions inches (millimeters) unless otherwise noted

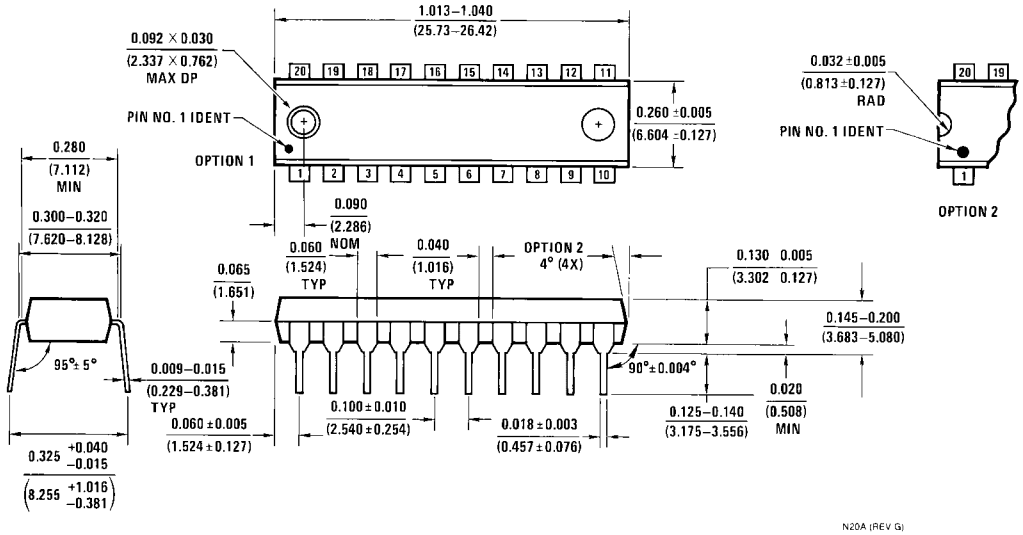


20-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-013, 0.300 Wide
Package Number M20B



20-Lead Shrink Small Outline Package (SSOP), EIAJ TYPE II, 5.3mm Wide
Package Number MSA20

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



20-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide
Package Number N20A

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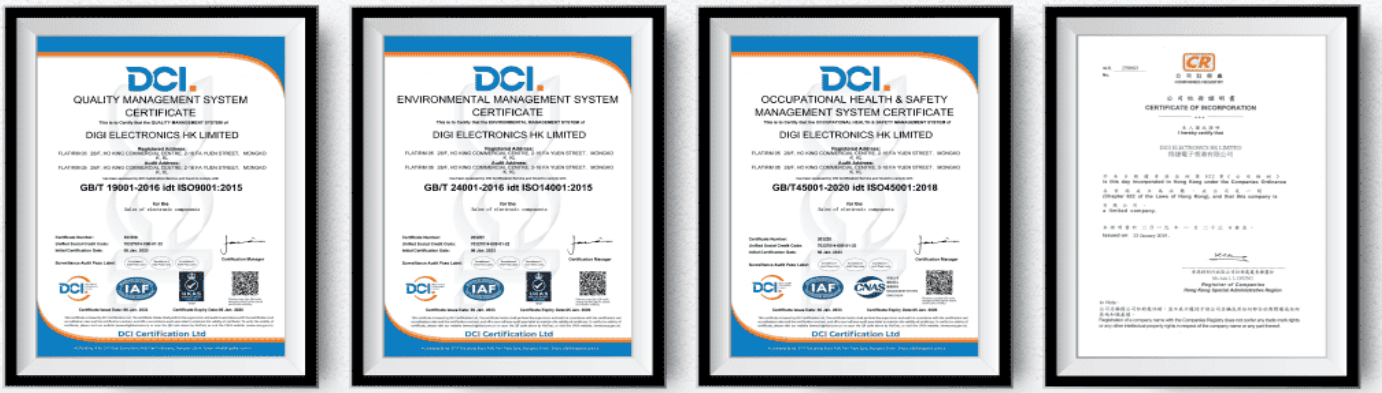

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