



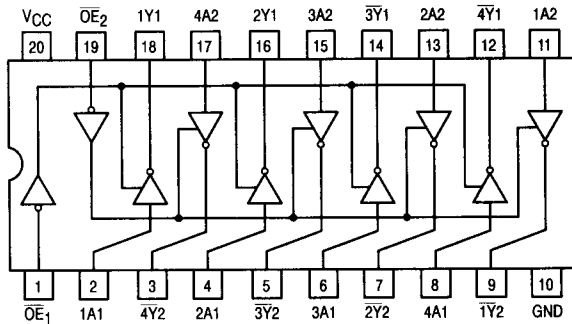
Octal Buffer With Active Low Enable 3-State Inverted Outputs

ELECTRICALLY TESTED PER:
MIL-M-38510/33201

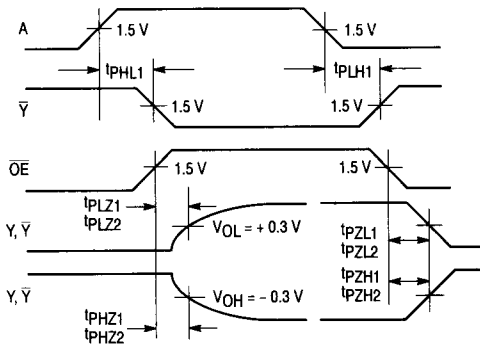
The F240 is an octal buffer and line driver designed to be employed as a memory address driver, clock driver and bus oriented transmitter/receiver which provides improved PC board density.

- 3-State Outputs Drive Bus Lines or Buffer Memory Address Register
- Outputs Sink 64 mA
- 15 mA Source Current
- Input Clamp Diodes Limit High Speed Termination Effects

LOGIC DIAGRAM



WAVEFORMS



Military 54F240



AVAILABLE AS:

- 1) JAN: JM38510/33201BXA
- 2) SMD: N/A
- 3) 883: 54F240/BXAJC

X = CASE OUTLINE AS FOLLOWS:
PACKAGE: CERDIP: R
CERFLAT: S
LCC: 2

THE LETTER "M" APPEARS
BEFORE THE / ON LCC.

PIN ASSIGNMENTS

FUNCT.	DIL 732-03	FLATS 737-02	LCC 756A-02	BURN-IN (COND. A)
OE ₁	1	1	1	VCC
1A1	2	2	2	VCC
4Y ₂	3	3	3	OPEN
2A1	4	4	4	VCC
3Y ₂	5	5	5	OPEN
3A1	6	6	6	VCC
2Y ₂	7	7	7	OPEN
4A1	8	8	8	VCC
1Y ₂	9	9	9	OPEN
GND	10	10	10	GND
1A2	11	11	11	VCC
4Y ₁	12	12	12	OPEN
2A2	13	13	13	VCC
3Y ₁	14	14	14	OPEN
3A2	15	15	15	VCC
2Y ₁	16	16	16	OPEN
4A2	17	17	17	VCC
1Y ₁	18	18	18	OPEN
OE ₂	19	19	19	VCC
VCC	20	20	20	VCC

BURN-IN CONDITIONS:
VCC = 5.0 V MIN/6.0 V MAX

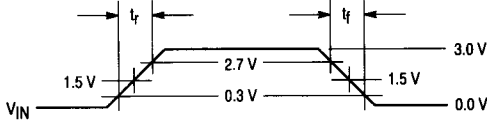
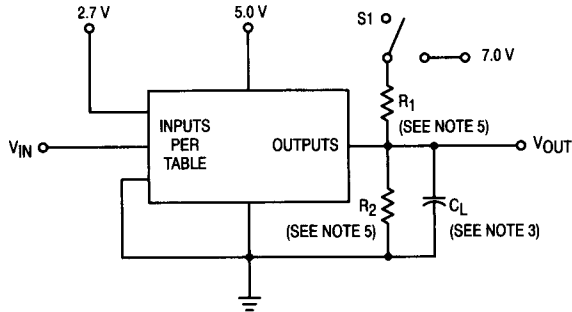
TRUTH TABLE

Inputs		Output
OE ₁ , OE ₂	D	
L	L	H
L	H	L
H	X	Z

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



AC TEST CIRCUIT



REFERENCE NOTES ON PAGE 4-105

Test Type	S1
tPLH	open
tPHL	open
tPHZ	open
tPZH	open
tPLZ	closed
tPZL	closed

4

Symbol	Parameter	Limits						Unit	Test Condition (Unless Otherwise Specified)
		+ 25°C		+ 125°C		- 55°C			
		Subgroup 1		Subgroup 2		Subgroup 3			
		Min	Max	Min	Max	Min	Max		
VOH	Logical "1" Output Voltage	2.4		2.4		2.4		V	VCC = 4.5 V, IOH = -3.0 mA, VIL = 0.8 V (all inputs).
VOL	Logical "0" Output Voltage		0.55		0.55		0.55	V	VCC = 4.5 V, IOL = 48 mA, VIL = 0.8 V, VIH = 2.0 V.
VIC	Input Clamping Voltage		-1.2					V	VCC = 4.5 V, IIN = -18 mA, other inputs are open.
IiH	Logical "1" Input Current		20		20		20	µA	VCC = 5.5 V, VIH = 2.7 V, other inputs are open.
IiHH	Logical "1" Input Current		100		100		100	µA	VCC = 5.5 V, VIHH = 7.0 V, other inputs are open.
IOD	Diode Current	65		65		65		mA	VCC = 4.5 V, VIN = GND, other input = 5.5 V, VOUT = 2.5 V.
IiL	Logical "0" Input Current	-0.03	-1.0	-0.03	-1.0	-0.03	-1.0	mA	VCC = 5.5 V, VIN = 0.5 V, other inputs are open.
IOS	Output Short Circuit Current	-100	-325	-100	-325	-100	-325	mA	VCC = 5.5 V, VIN = 0 V (all inputs).
IiOZH	Output Off Current High		50		50		50	µA	VCC = 5.5 V, VIN = 2.0 V, other input = 4.5 V, VOUT = 2.4 V.
IiOZL	Output Off Current Low		-50		-50		-50	µA	VCC = 5.5 V, VIN = 2.0 V, other input = 0 V, VOUT = 0.5 V.
IcCH	Power Supply Current		35		35		35	mA	VCC = 5.5 V, VIN = 0 V (all inputs).
IcCL	Power Supply Current		75		75		75	mA	VCC = 5.5 V, VIN = 4.5 V, other input = 0 V.
IcCZ	Power Supply Current Off		75		75		75	mA	VCC = 5.5 V, VIN = 4.5 V, OE2 = 4.5 V, other input is open.
VIH	Logical "1" Input Voltage	2.0		2.0		2.0		V	VCC = 4.5 V.
VIL	Logical "0" Input Voltage		0.8		0.8		0.8	V	VCC = 4.5 V.

54F240

Symbol	Parameter	Limits			Unit	Test Condition (Unless Otherwise Specified)
		+ 25°C	+ 125°C	- 55°C		
	Functional Tests	Subgroup 7		Subgroup 8A	Subgroup 8B	per Truth Table with $V_{CC} =$ (See Note 6), $V_{INL} = 0.55 \text{ V}$, $V_{INH} = 2.4 \text{ V}$.

Symbol	Parameter	Limits						Unit	Test Condition (Unless Otherwise Specified)
		+ 25°C		+ 125°C		- 55°C			
		Subgroup 9		Subgroup 10		Subgroup 11			
		Min	Max	Min	Max	Min	Max		
t _{PHL1}	Propagation Delay /Data-Output Output High-Low	1.0	4.7	1.0	6.0	1.0	6.0	ns	$V_{CC} =$ (See Note 6), $C_L = 50 \text{ pF}$, $R_1 = R_2 = 500 \Omega$.
t _{PLH1}	Propagation Delay /Data-Output Output Low-High	1.0	7.0	1.0	9.0	1.0	9.0	ns	$V_{CC} =$ (See Note 6), $C_L = 50 \text{ pF}$, $R_1 = R_2 = 500 \Omega$.
t _{PLZ1}	Propagation Delay /Data-Output Output Low-High	2.0	10	2.0	12.5	2.0	12.5	ns	$V_{CC} =$ (See Note 6), $C_L = 50 \text{ pF}$, $R_1 = R_2 = 500 \Omega$.
t _{PHZ1}	Propagation Delay /Data-Output Output High-Low	2.0	6.0	2.0	6.5	2.0	6.5	ns	$V_{CC} =$ (See Note 6), $C_L = 50 \text{ pF}$, $R_1 = R_2 = 500 \Omega$.
t _{PZL1}	Propagation Delay /Data-Output Output Low-High	2.0	9.0	2.0	10.5	2.0	10.5	ns	$V_{CC} =$ (See Note 6), $C_L = 50 \text{ pF}$, $R_1 = R_2 = 500 \Omega$.
t _{PZH1}	Propagation Delay /Data-Output Output High-Low	2.0	6.0	2.0	6.5	2.0	6.5	ns	$V_{CC} =$ (See Note 6), $C_L = 50 \text{ pF}$, $R_1 = R_2 = 500 \Omega$.

NOTES:

1. Pulse generator has the following characteristics: $t_r = t_f \leq 2.5 \text{ ns}$, $\text{PRR} \leq 1.0 \text{ MHz}$ and $Z_{OUT} = 50 \Omega$.
2. Terminal conditions (pins not designated may be high $\geq 2.0 \text{ V}$, low $\leq 0.8 \text{ V}$, or open).
3. $C_L = 50 \text{ pF} \pm 10\%$ including scope probe, wiring and stray capacitance, without package in test fixture.
4. Voltage measurements are to be made with respect to network ground terminal.
5. $R_1 = R_2 = 500 \Omega \pm 5.0\%$.
6. Perform functional tests at $V_{CC} = 4.5 \text{ V}$ (repeat at) $V_{CC} = 5.0 \text{ V}$, and $V_{CC} = 5.5 \text{ V}$ (Motorola imposed).