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From book:DL121CH4 (5) VIEW

Document:MC74F640 (5) VIEW

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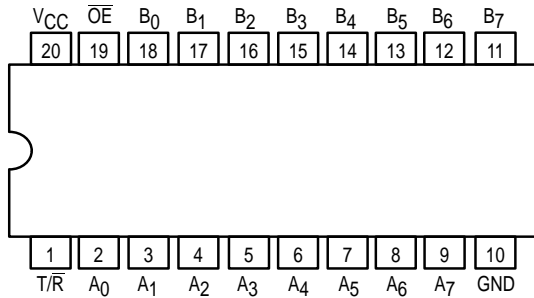


OCTAL BUS TRANSCEIVER, INVERTING WITH 3-STATE OUTPUTS

The MC74F640 is an octal transceiver featuring inverting 3-state bus compatible outputs in both transmit and receive directions. The B port outputs are capable of sinking 64 mA and sourcing 15 mA, providing very good capacitive drive characteristics. The device features an Output Enable (\overline{OE}) input for easy cascading and Transmit/Receive (T/\overline{R}) input for direction control. The 3-state outputs, B_0 – B_7 , have been designed to prevent output bus loading if the power is removed from the device.

- High-Impedance NPN Base Inputs for Reduced Loading (70 μ A in High and Low States)
- Ideal for Applications which Require High-Output Drive and Minimal Bus Loading
- Inverting Version of F245
- Octal Bidirectional Bus Interface
- 3-State Buffer Outputs Sink 64 mA and Source 15 mA
- ESD Sensitive — 4000 V HBM

PIN ASSIGNMENT



FUNCTION TABLE

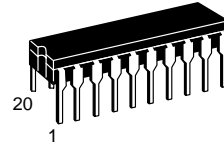
Inputs		Outputs
\overline{OE}	T/\overline{R}	
L	L	Bus B data to Bus \overline{A}
L	H	Bus A data to Bus \overline{B}
H	X	Z

H = High Voltage Level
L = Low Voltage Level
X = Don't Care
Z = High Impedance "Off" State

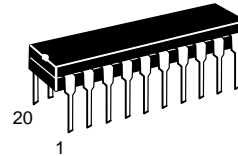
MC74F640

OCTAL BUS TRANSCEIVER, INVERTING WITH 3-STATE OUTPUTS

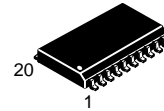
FAST™ SCHOTTKY TTL



J SUFFIX
CERAMIC
CASE 732-03



N SUFFIX
PLASTIC
CASE 738-03

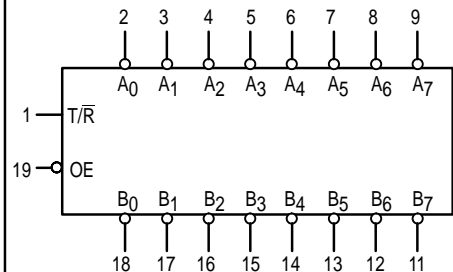


DW SUFFIX
SOIC
CASE 751D-03

ORDERING INFORMATION

MC74FXXXJ Ceramic
MC74FXXXN Plastic
MC74FXXXDW SOIC

LOGIC SYMBOL



MC74F640

GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit	
V _{CC}	DC Supply Voltage		74	4.5	5.0	5.5	V
T _A	Operating Ambient Temperature Range		74	0	25	70	°C
I _{OH}	Output Current — High	A _n Outputs	74			-3.0	mA
I _{OH}	Output Current — High	B _n Outputs	74			-15	mA
I _{OL}	Output Current — Low	A _n Outputs	74			24	mA
I _{OL}	Output Current — Low	B _n Outputs	74			64	mA

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

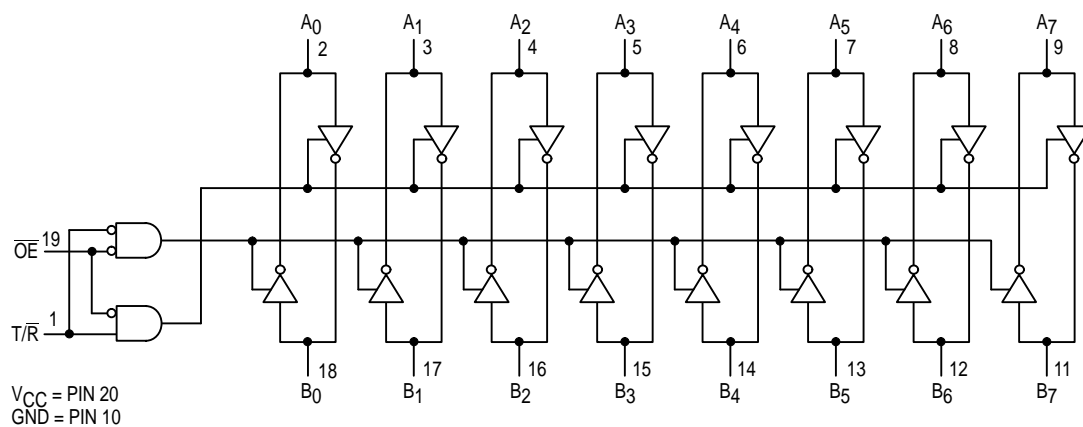
Symbol	Parameter		Limits			Unit	Test Conditions ¹		
			Min	Typ	Max				
V _{IH}	Input HIGH Voltage		2.0			V	Guaranteed as a HIGH Signal		
V _{IL}	Input LOW Voltage				0.8	V	Guaranteed as a LOW Signal		
V _{IK}	Input Clamp Diode Voltage				-1.2	V	V _{CC} = MIN, I _{IN} = -18 mA		
V _{OH}	Output HIGH Voltage	A _n	74	2.4	3.3		V	I _{OH} = -3.0 mA	V _{CC} = 4.5 V
			74	2.7	3.3		V	I _{OH} = -3.0 mA	V _{CC} = 4.75 V
		B _n	74	2.4	3.4		V	I _{OH} = -3.0 mA	V _{CC} = 4.5 V
			74	2.7	3.4		V	I _{OH} = -3.0 mA	V _{CC} = 4.75 V
			74	2.0			V	I _{OH} = -15 mA	V _{CC} = 4.5 V
V _{OL}	Output LOW Voltage	A _n	74		0.35	0.5	V	I _{OL} = 24 mA	V _{CC} = MIN
V _{OL}	Output LOW Voltage	B _n	74			0.55	V	I _{OL} = 64 mA	V _{CC} = MIN
I _{OZH} + I _{IH}	Output Off Current HIGH				70	μA	V _{CC} = MAX, V _{OUT} = 2.7 V		
I _{OZL} + I _{IL}	Output Off Current LOW				-70	μA	V _{CC} = MAX, V _{OUT} = 0.5 V		
I _{IH}	Input HIGH Current	\overline{OE} , T/ \overline{R}				40	μA	V _{CC} = MAX, V _{IN} = 2.7 V	
		\overline{OE} , T/ \overline{R}				100	μA	V _{CC} = 0 V, V _{IN} = 7.0 V	
		Others				1.0	mA	V _{CC} = MAX, V _{IN} = 5.5 V	
I _{IL}	Input LOW Current	\overline{OE} , T/ \overline{R}				-40	μA	V _{CC} = MAX, V _{IN} = 0.5 V	
I _{OS}	Output Short Circuit Current ²	A ₀ -A ₇		-60		-150	mA	V _{CC} = MAX, V _{OUT} = GND	
		B ₀ -B ₇		-100		-225			
I _{CC}	Power Supply Current	I _{CC} H				85	mA	V _{out} = HIGH	V _{CC} = MAX
		I _{CC} L				120		V _{out} = LOW	
		I _{CC} Z				100		T/ \overline{R} = 0 V	
								\overline{OE} = 4.5 V	
								V _{out} = HIGH Z	

NOTES:

1. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
2. Not more than one output should be shorted at a time, nor for more than 1 second.

MC74F640

LOGIC DIAGRAM



AC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	74F			74F			Unit
		$T_A = +25^\circ\text{C}$ $V_{CC} = +5.0\text{ V}$ $C_L = 50\text{ pF}$ $R_L = 500\ \Omega$			$T_A = 0^\circ\text{C to } +70^\circ\text{C}$ $V_{CC} = +5.0\text{ V } \pm 10\%$ $C_L = 50\text{ pF}$ $R_L = 500\ \Omega$			
		Min	Typ	Max	Min	Typ	Max	
t_{PLH} t_{PHL}	Propagation Delay A_n to B_n , B_n to A_n	2.0 1.0		7.0 5.0	2.0 1.0		8.0 5.5	ns
t_{PZH} t_{PZL}	Output Enable Time to High or Low Level	3.5 6.0		11 11	3.5 6.0		13 12	ns
t_{PHZ} t_{PLZ}	Output Disable Time to High or Low Level	1.5 1.0		8.0 7.0	1.5 1.0		9.0 7.5	ns