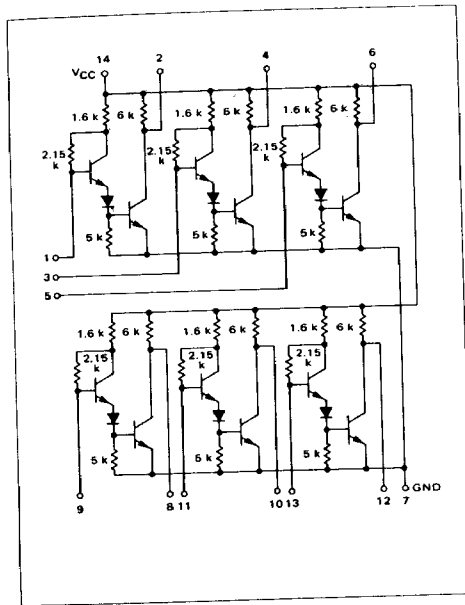


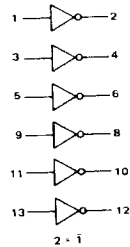
HEX INVERTER  
(Without Input Diodes)

MDTL MC930/830 series

MC940F · MC840F, P

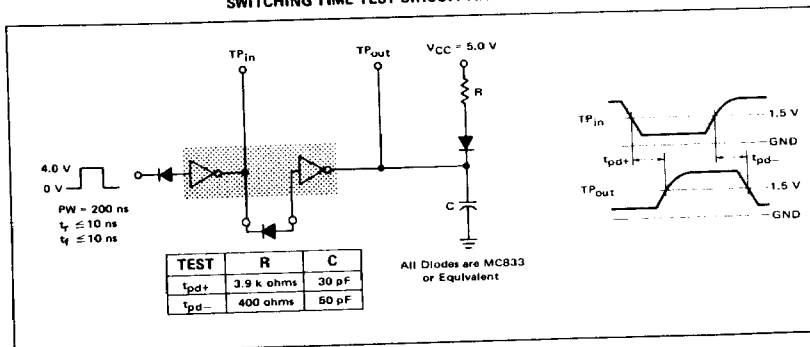


This hex inverter with no input diodes, is useful in applications such as monostable and astable multivibrators. Discrete input diodes may be added to allow translation to MDTL logic from higher voltage levels, or the device may be used in conjunction with gate expanders to form flexible multi-input gate arrays.



Input Loading Factor = 1  
Output Loading Factor = 8  
Total Power Dissipation = 66 mW typ/pkg  
Propagation Delay Time = 30 ns typ

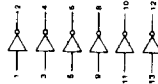
SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



MC940F/MC840F, P (continued)

ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one inverter. The other inverters are tested in the same manner.



Characteristic	Symbol	Pin Under Test	MC940 Test Limits						MC840 Test Limits						TEST VOLTAGE/CURRENT VALUES											
			-55°C		+25°C		+125°C		0°C		+25°C		+75°C		@ Test Temperature				Volts							
			Min	Max	Min	Max	Min	Max	Unit	Min	Max	Min	Max	Unit	I <sub>OL</sub>	I <sub>OH</sub>	V <sub>X</sub>	V <sub>FB</sub>	V <sub>CEX</sub>	V <sub>CC</sub>	V <sub>CCL</sub>	V <sub>CCH</sub>	V <sub>max</sub>			
Output Voltage	V <sub>OL</sub>	2	-	0.40	-	0.40	-	0.45	Vdc	0.45	-	0.45	-	0.50	Vdc	2	-	-	-	-	-	-	-	7		
	V <sub>OH</sub>	2	2.50	-	2.60	-	2.50	-	Vdc	2.60	-	2.60	-	2.50	-	Vdc	2	1	-	-	-	-	-	7		
Short-Circuit Current	I <sub>SC</sub>	2	-	-1.34	-	-1.34	-	-1.30	mAdc	-1.30	-	-1.30	-	-1.25	mAdc	-	-	1	-	-	-	-	-	2,7		
Output Leakage Current	I <sub>CEX</sub>	2	-	-	-	-	-	-	μAdc	-	-	-	-	100	μAdc	-	-	1	2,14	-	-	-	-	7		
Forward Current	I <sub>F</sub>	1	-	-1.60	-	-1.60	-	-1.50	mAdc	-1.40	-	-1.40	-	-1.33	mAdc	-	-	1	-	-	-	-	-	7		
Power Drain Current (Total Device)	I <sub>PDH</sub>	14	-	-	-	-	-	-	mAdc	-	-	-	-	24	mAdc	-	-	-	-	-	-	-	-	7		
	I <sub>max</sub>	14	-	-	-	-	-	-	mAdc	-	-	-	-	24	mAdc	-	-	1,3,5, 9,11, 13	-	-	-	-	-	7		
Switching Times	t <sub>pd+</sub>	1,2	-	-	-	-	-	-	ns	-	-	-	-	25	80	-	-	-	-	-	-	-	-	7		
	t <sub>pd-</sub>	1,2	-	-	-	-	-	-	ns	-	-	-	-	10	30	-	-	-	-	-	-	-	-	7		

Plus not listed are left open.

37

## PRODUCT DOCUMENTATION

The three documents listed in the following table are required for a complete description of the DSP56301 and are necessary to design properly with the part. Documentation is available from one of the following locations (see back cover for detailed information):

- A local Motorola distributor
- A Motorola semiconductor sales office
- A Motorola Literature Distribution Center
- The World Wide Web (WWW)

See the **Additional Support** section of the *DSP56300 Family Manual* for detailed information on the multiple support options available to you.

**Table 1** DSP56301 Documentation

Name	Description	Order Number
DSP56300 Family Manual	Detailed description of the DSP56300 family processor core and instruction set	DSP56300FM/AD
DSP56301 User's Manual	Detailed functional description of the DSP56301 memory configuration, operation, and register programming	DSP56301UM/AD
DSP56301 Technical Data	DSP56301 features list and physical, electrical, timing, and package specifications	DSP56301/D

