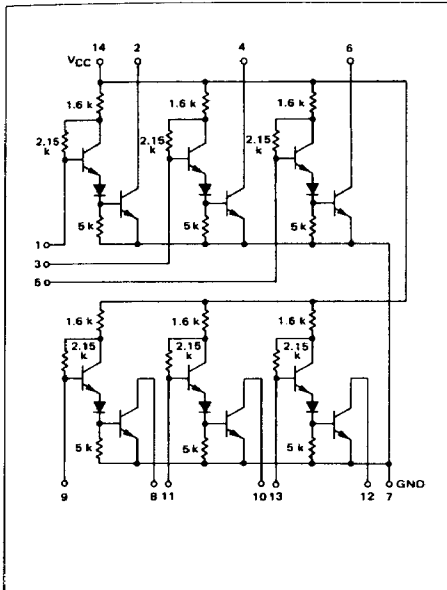


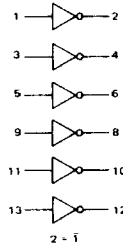
HEX INVERTER
(Without Output Resistors
and Input Diodes)

MDTL MC930/830 series

MC941F · MC841F, P

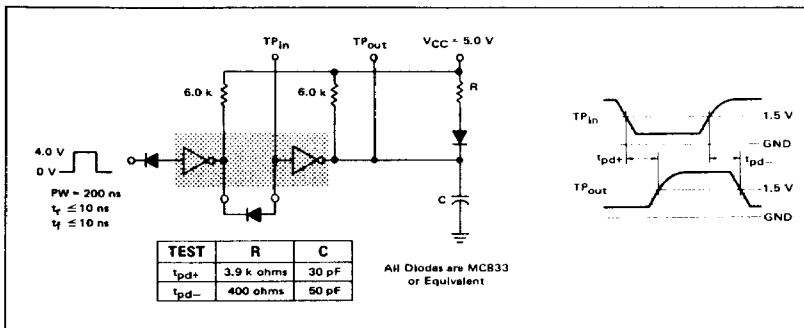


This hex inverter has neither output pullup resistors nor input diodes. This configuration lends itself to the construction of very flexible gate arrangements through the use of gate expanders and/or wired-collector functions. It is also useful in applications such as level translation, multivibrator circuits, and interfacing with discrete components — including low-voltage lamp and relay drivers.



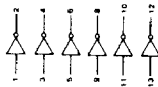
Input Loading Factor = 1
Output Loading Factor = 8
Total Power Dissipation = 42 mW typ/pkg
Propagation Delay Time = 30 ns typ

SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



MC941F/MC841F, 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 | MC941 Test Limits | | | | | | MC841 Test Limits | | | | | | TEST CURRENT / VOLTAGE VALUES | | | | | | | | | | | |
|------------------------------------|-----------|----------------|-------------------|-------|-------|-------|--------|-------|-------------------|-----|-------|-----|-------|-----|-------------------------------|-----------|----------|-------|-----------|-----------|----------|-----------|-----------|-----------|---|---|
| | | | -55°C | | +25°C | | +125°C | | 0°C | | +25°C | | +75°C | | Volts | | | | | | | | | | | |
| | | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | I_{OL} | V_X | V_{FB} | V_{CEX} | V_{CC} | V_{CCL} | V_{COH} | V_{max} | | |
| Output Voltage | V_{OL} | 2 | - | 0.40 | - | 0.40 | - | 0.45 | Vdc | - | 0.45 | - | 0.45 | - | 0.50 | Vdc | 2 | - | - | - | - | - | - | - | - | 7 |
| Output Breakdown Voltage | V_{CE} | 2 | - | 8.0 | - | 8.0 | - | 8.0 | Vdc | - | 8.0 | - | 8.0 | - | 8.0 | Vdc | 2 | - | 1 | - | - | - | - | 14 | - | 7 |
| Output Leakage Current | I_{CEX} | 2 | - | - | - | 50 | - | - | μ Adc | - | - | - | 100 | - | - | μ Adc | - | 1 | - | 2.14 | - | - | - | - | 7 | |
| Forward Current | I_F | 1 | - | -1.80 | - | -1.60 | - | -1.40 | mAdc | - | -1.40 | - | -1.40 | - | -1.33 | mAdc | - | - | 1 | - | - | - | - | 14 | - | 7 |
| Power Drain Current (Total Device) | I_{PDH} | 14 | - | - | - | 13.5 | - | - | mAdc | - | - | - | 17.5 | - | - | mAdc | - | - | 1.5, 5 | - | 14 | - | - | - | 7 | |
| | I_{max} | 14 | - | - | - | 16.5 | - | - | mAdc | - | - | - | 24 | - | - | mAdc | - | - | 9, 11, 13 | - | - | - | - | 14 | 7 | |
| Switching Times | t_{pd+} | 1, 2 | - | - | - | 25 | 80 | - | ns | - | - | - | 25 | 80 | - | ns | - | - | - | - | 14 | - | - | - | 7 | |
| | t_{pd-} | 1, 2 | - | - | - | 10 | 30 | - | ns | - | - | - | 10 | 30 | - | ns | - | - | - | - | 14 | - | - | - | 7 | |

Pins not listed are left open.

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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 |

