

M57955L

HYBRID IC FOR DRIVING HIGH BETA TRANSISTOR MODULES

DESCRIPTION

M57955L is a Hybrid Integrated Circuit designed for driving High Beta Transistor Modules QM50DY-HB, etc., in an Inverter application. This device operates as an isolation amplifier Transistor Modules due to the electrical isolation between the input and output circuits with a opto-coupler, as well as its driving capability which only requires single power supply.

FEATURES

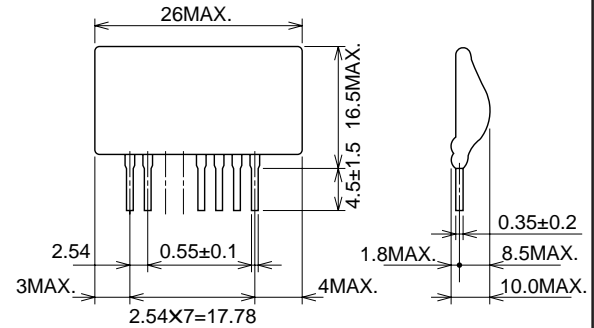
- Electrical isolation between input and output with integrated opto-coupler. $V_{iso}=2500V_{rms}$
- Applicable with single power supply (7 ~ 9V)
- Applicable with TTL input

APPLICATION

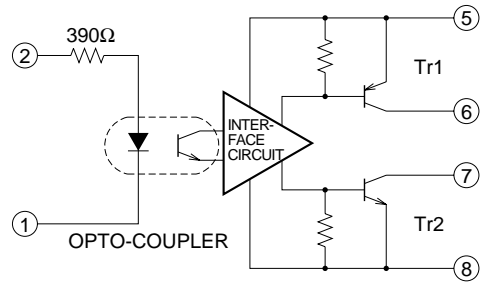
To drive High Beta Transistor Modules for Inverter applications

OUTLINE DRAWING

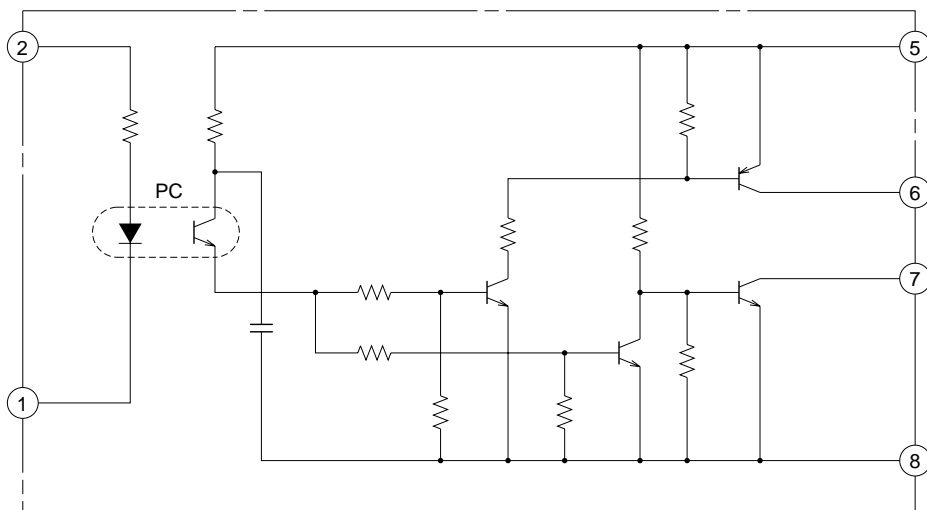
Dimensions in mm



BLOCK DIAGRAM



CIRCUIT DIAGRAM



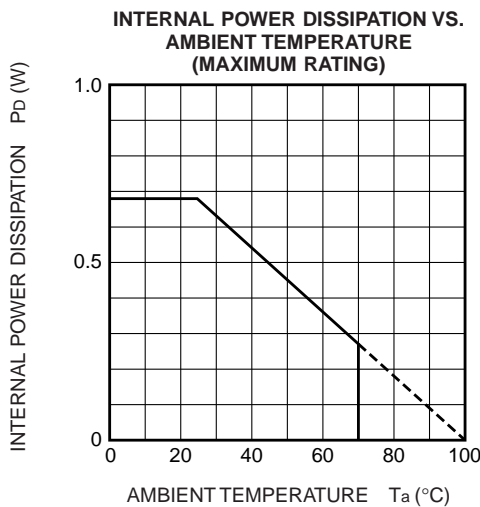
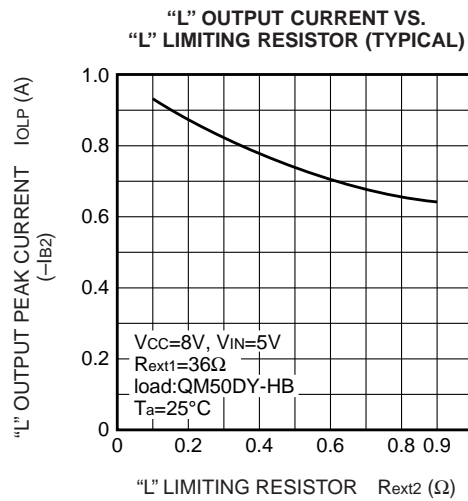
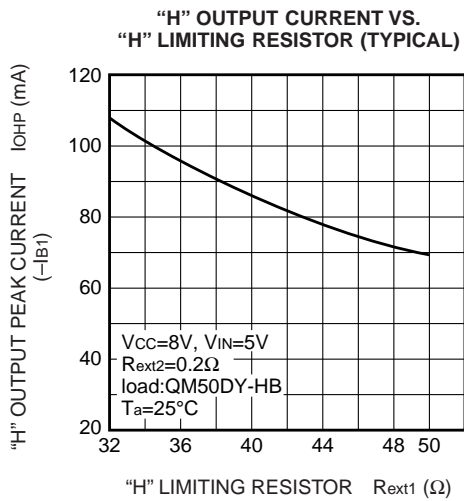
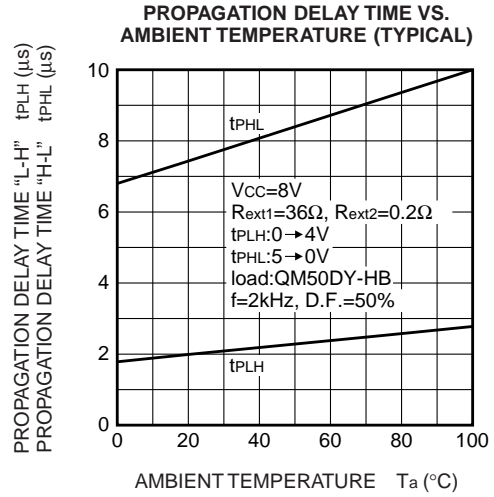
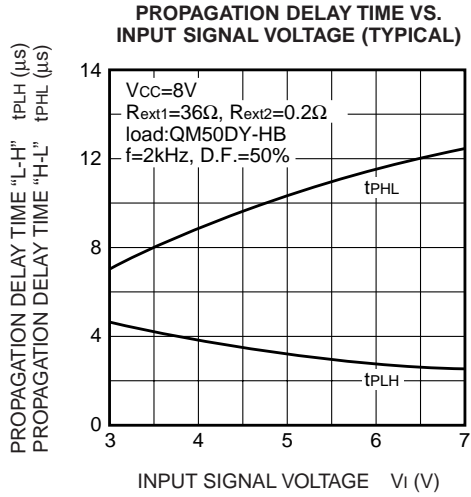
ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise noted)

| Symbol | Parameter | Conditions | Ratings | Unit |
|--------|-----------------------|--|------------|------|
| VCC | Supply voltage | DC | 12 | V |
| VI | Input voltage | | -1 ~ 7 | V |
| IOH | Output voltage | Pulse width 10μs, Freq. 2kHz, peak value | -0.3 | A |
| IOLP | | | 1.3 | A |
| Viso | Isolation voltage | Sinewave voltage 60Hz/min. Ta=25°C | 2500 | Vrms |
| Tj | Junction temperature | | 100 | °C |
| Topg | Operating temperature | | -20 ~ +70 | °C |
| Tstg | Storage temperature | | -25 ~ +100 | °C |

ELECTRICAL CHARACTERISTICS (Ta=25°C, VCC=8V, unless otherwise noted)

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|--------|------------------------------|--------------------------------------|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| IiH | "H" input current | VI=5V | - | 10 | - | mA |
| IOH | "H" output current | Rext1=36Ω | - | -0.1 | - | A |
| IOLP | "L" output peak current | Cext=47μF, Rext2=0.2Ω | - | 1 | - | A |
| PD | Internal power dissipation | IOH=-0.1A, IOLP=1A, f=2kHz, D.F.=50% | - | 0.26 | - | W |
| tPLH | "L-H" propagation delay time | | - | 5 | 10 | μs |
| tr | "L-H" rise time | | - | - | 1 | μs |
| tPHL | "H-L" propagation delay time | | - | 8 | 15 | μs |
| tf | "H-L" fall time | | - | - | 2 | μs |
| VIN | Supply voltage | Recommended range | 4.75 | 5 | 5.25 | V |
| VCC | | Recommended range | 7 | 8 | 9 | V |

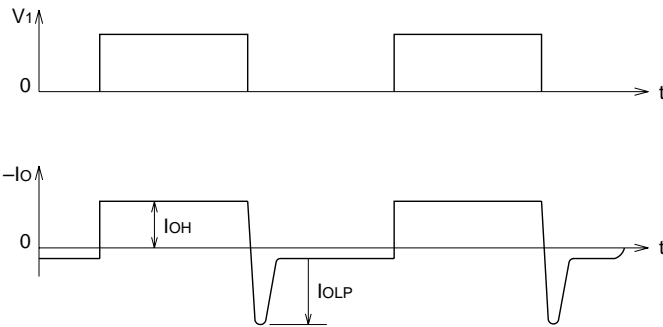
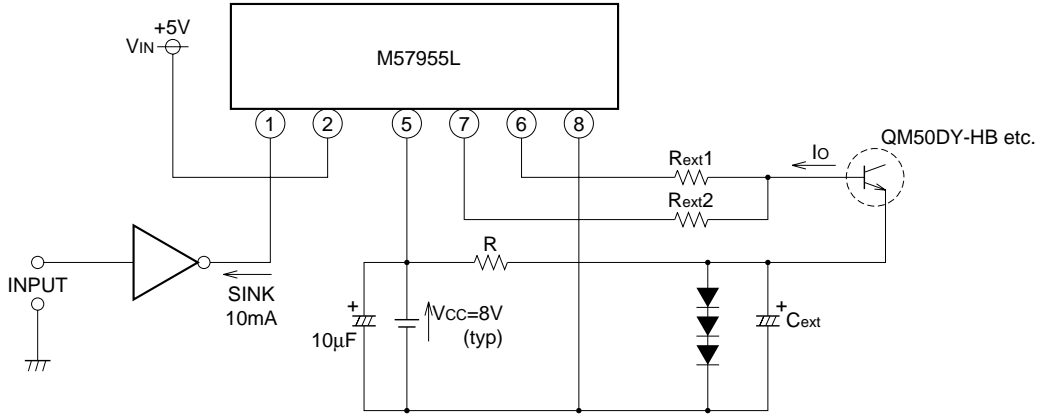
PERFORMANCE CURVES



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TEST CIRCUIT AND APPLICATION CIRCUIT EXAMPLE



Note: IOH and IOLP correspond to base forward current IB1 and base reverse current IB2 of the transistor modules to be driven respectively.