

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

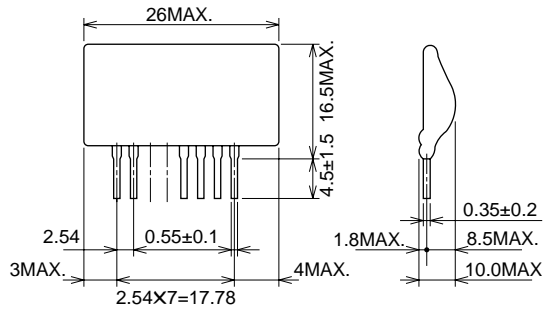
- Electrical isolation between input and output with integrated opto-coupler. $V_{iso}=2500V_{rms}$
- Applicable with single power supply (7 ~ 9V)
- Applicable with TTL input

APPLICATION

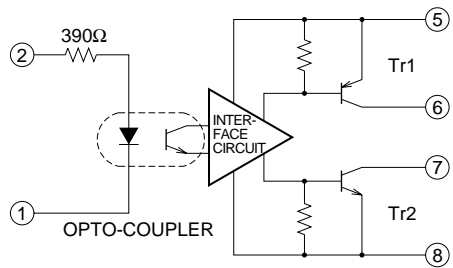
To drive High Beta Transistor Modules for Inverter applications

OUTLINE DRAWING

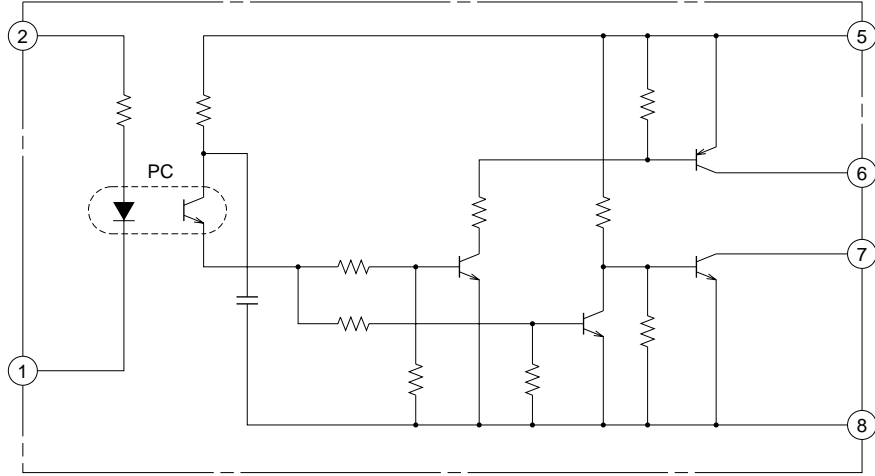
Dimensions in mm



BLOCK DIAGRAM



CIRCUIT DIAGRAM



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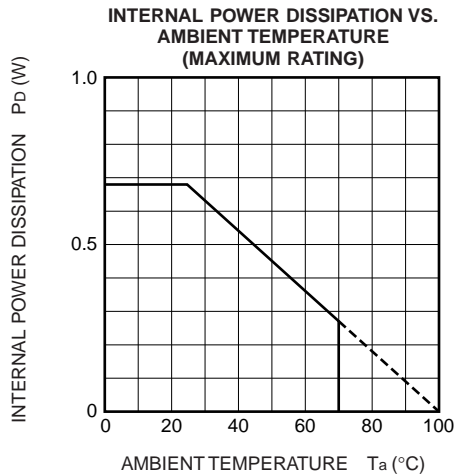
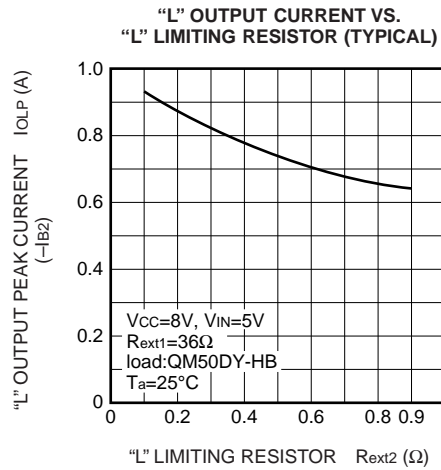
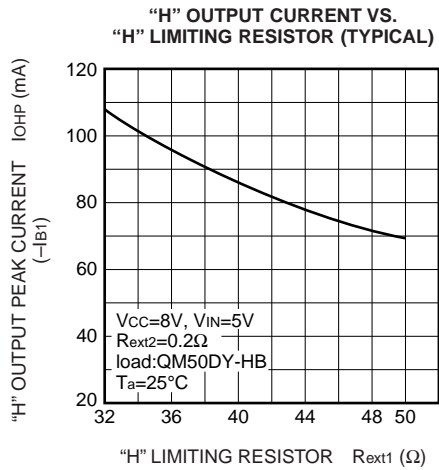
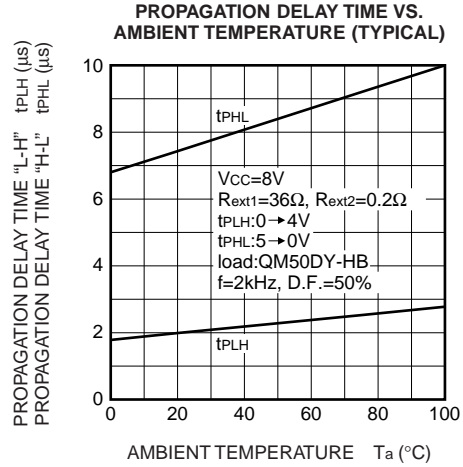
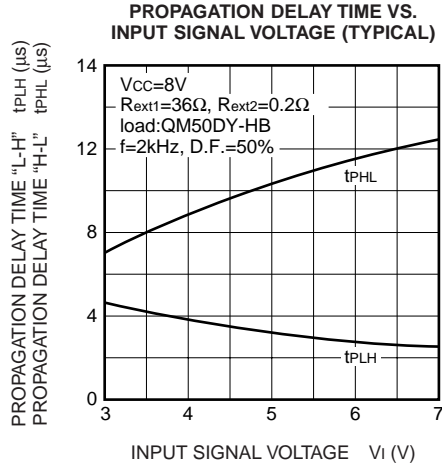
ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
VCC	Supply voltage	DC	12	V
VI	Input voltage		-1 ~ 7	V
IOH	Output voltage	Pulse width 10 μ s, Freq. 2kHz, peak value	-0.3	A
IOLP			1.3	A
Viso	Isolation voltage	Sinewave voltage 60Hz/min. $T_a=25^\circ\text{C}$	2500	V _{rms}
T _j	Junction temperature		100	$^\circ\text{C}$
Topg	Operating temperature		-20 ~ +70	$^\circ\text{C}$
Tstg	Storage temperature		-25 ~ +100	$^\circ\text{C}$

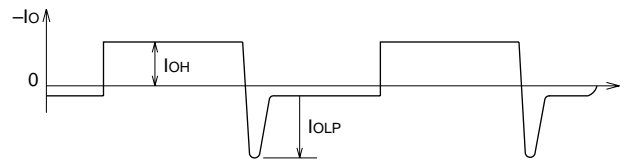
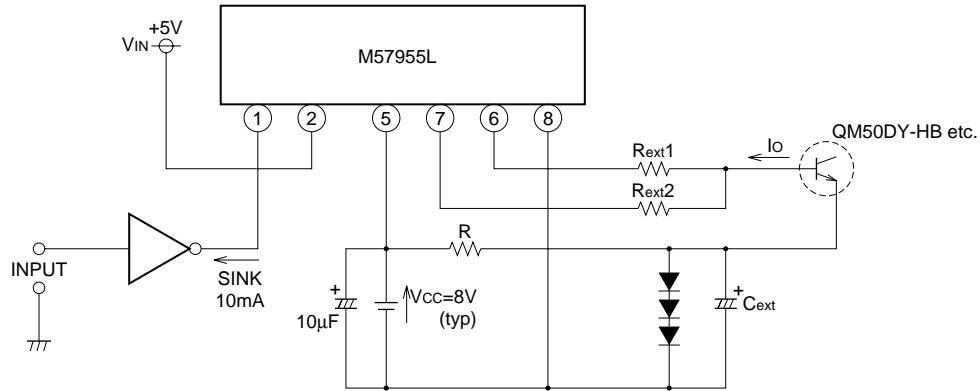
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$, $V_{CC}=8\text{V}$, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I _{IH}	"H" input current	$V_I=5\text{V}$	-	10	-	mA
IOH	"H" output current	$R_{ext1}=36\Omega$	-	-0.1	-	A
IOLP	"L" output peak current	$C_{ext}=47\mu\text{F}$, $R_{ext2}=0.2\Omega$	-	1	-	A
P _D	Internal power dissipation	$I_{OH}=-0.1\text{A}$, $I_{OLP}=1\text{A}$, $f=2\text{kHz}$, D.F.=50%	-	0.26	-	W
t _{PLH}	"L-H" propagation delay time		-	5	10	μs
t _r	"L-H" rise time		-	-	1	μs
t _{PHL}	"H-L" propagation delay time		-	8	15	μs
t _f	"H-L" fall time		-	-	2	μs
V _{IN}	Supply voltage	Recommended range	4.75	5	5.25	V
V _{CC}		Recommended range	7	8	9	V

PERFORMANCE CURVES



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.