

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

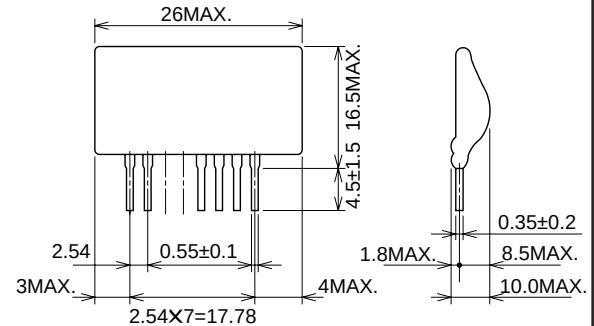
- Electrical isolation between input and output with integrated opto-coupler. $V_{iso}=2500V_{rms}$
- Applicable with single power supply (7 ~ 9V)
- Applicable with TTL input

APPLICATION

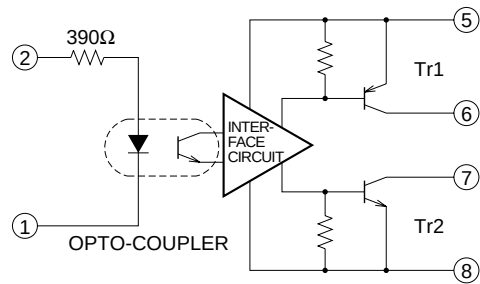
To drive High Beta Transistor Modules for Inverter applications

OUTLINE DRAWING

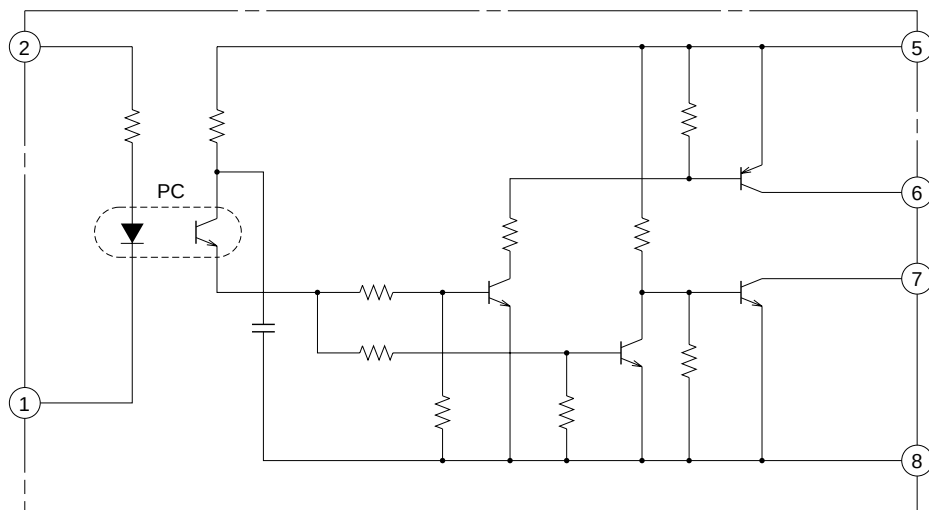
Dimensions in mm



BLOCK DIAGRAM



CIRCUIT DIAGRAM



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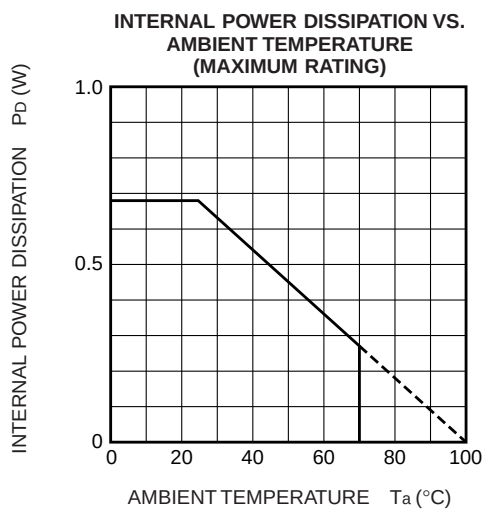
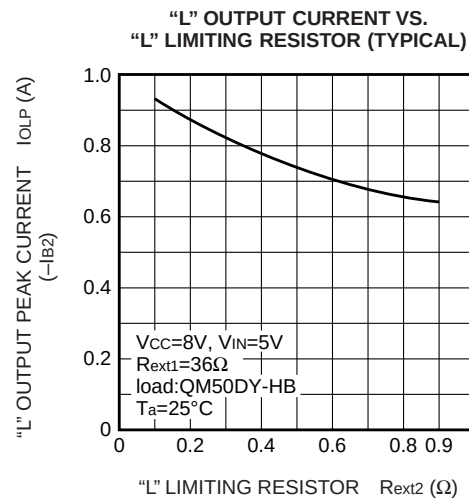
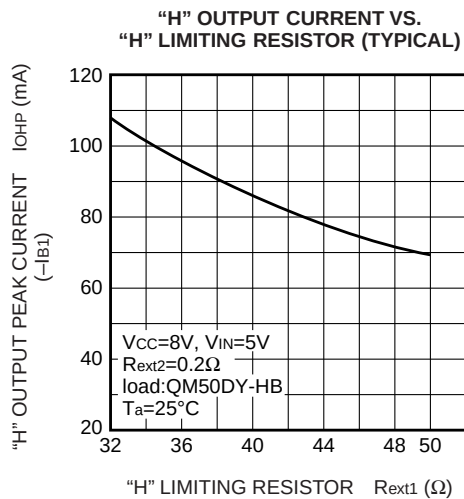
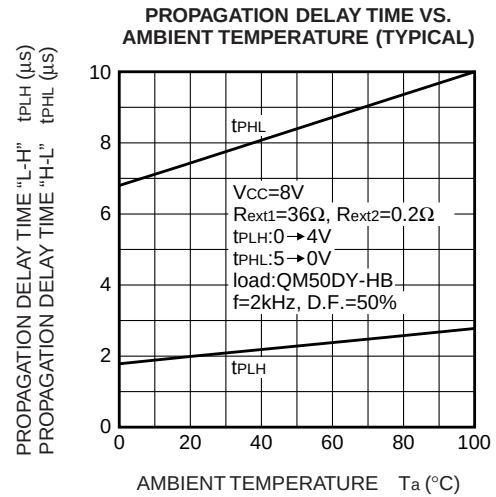
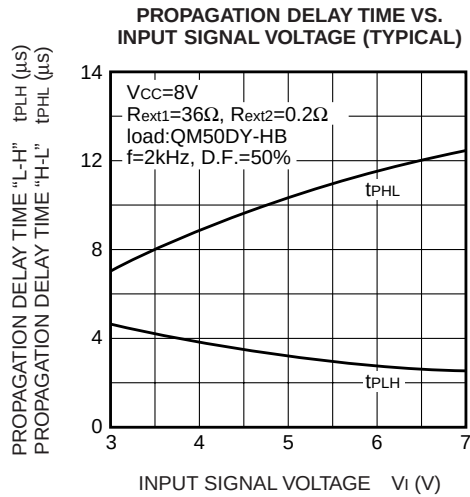
ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V _{CC}	Supply voltage	DC	12	V
V _I	Input voltage		-1 ~ 7	V
I _{OH}	Output voltage	Pulse width 10μs, Freq. 2kHz, peak value	-0.3	A
I _{OLP}			1.3	A
V _{iso}	Isolation voltage	Sinewave voltage 60Hz/min. Ta=25°C	2500	V _{rms}
T _j	Junction temperature		100	°C
T _{opg}	Operating temperature		-20 ~ +70	°C
T _{stg}	Storage temperature		-25 ~ +100	°C

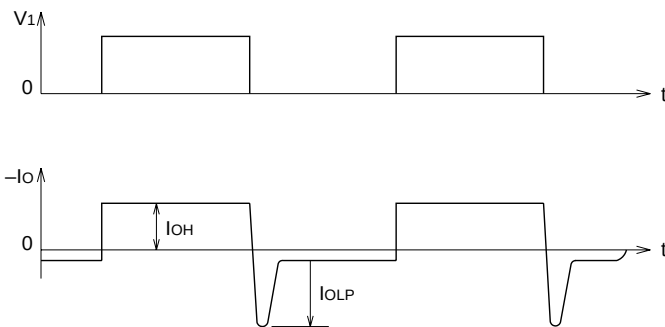
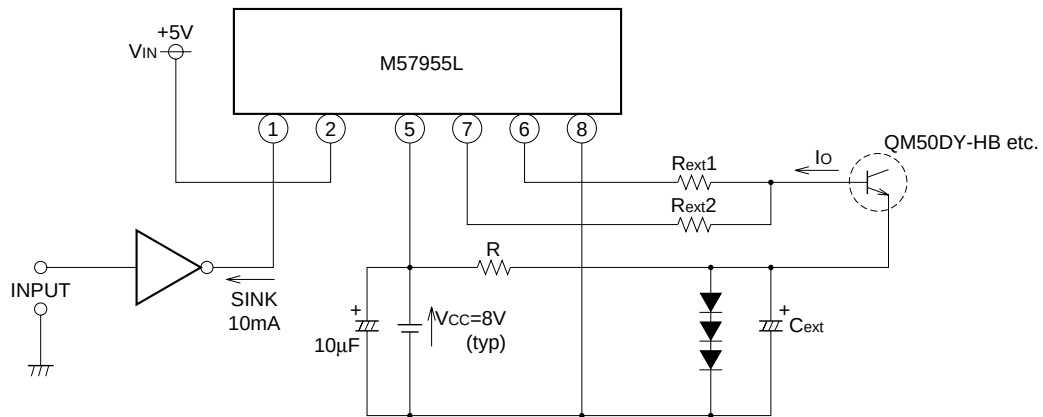
ELECTRICAL CHARACTERISTICS (Ta=25°C, V_{CC}=8V, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I _{IH}	"H" input current	V _I =5V	—	10	—	mA
I _{OH}	"H" output current	R _{ext1} =36Ω	—	-0.1	—	A
I _{OLP}	"L" output peak current	C _{ext} =47μF, R _{ext2} =0.2Ω	—	1	—	A
P _D	Internal power dissipation	I _{OH} =-0.1A, I _{OLP} =1A, f=2kHz, 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.