

M57915L

HYBRID IC FOR DRIVING TRANSISTOR MODULES

DESCRIPTION

M57915L is a Hybrid Integrated Circuit designed for driving Transistor Modules QM10XX, QM20XX, etc., in an Inverter application. This device operates as an isolation amplifier for 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

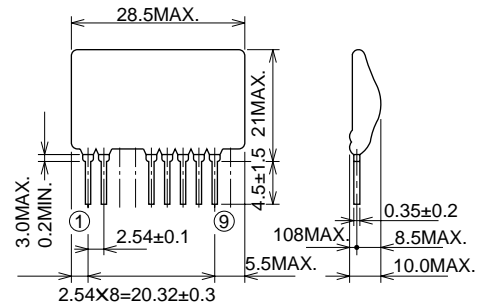
- Electrical isolation between input and output with integrated opto-coupler. $V_{iso}=2500V_{rms}$
- Applicable with single power supply (7 ~ 9V)
- Applicable with TTL input

APPLICATION

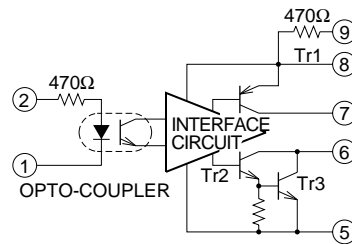
To drive Transistor Modules for Inverter applications

OUTLINE DRAWING

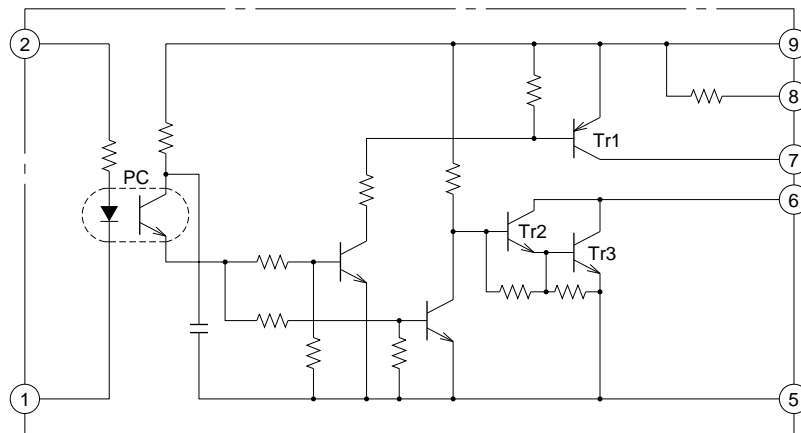
Dimensions in mm



BLOCK DIAGRAM



CIRCUIT DIAGRAM



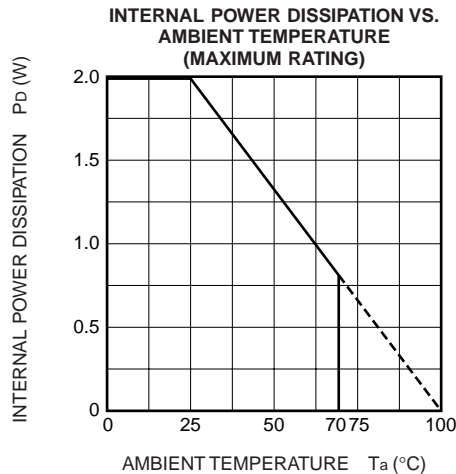
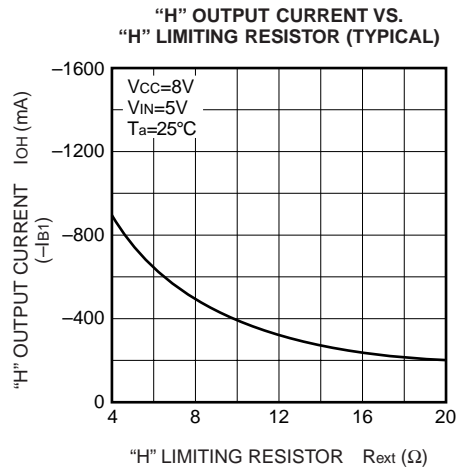
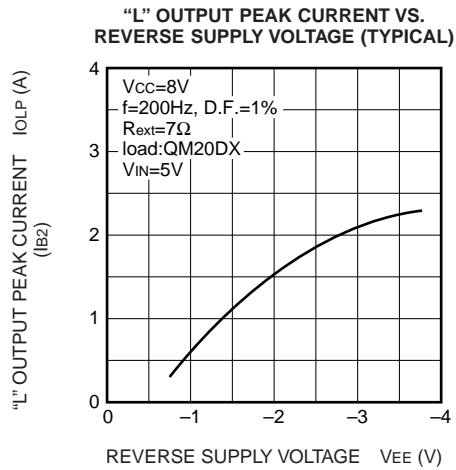
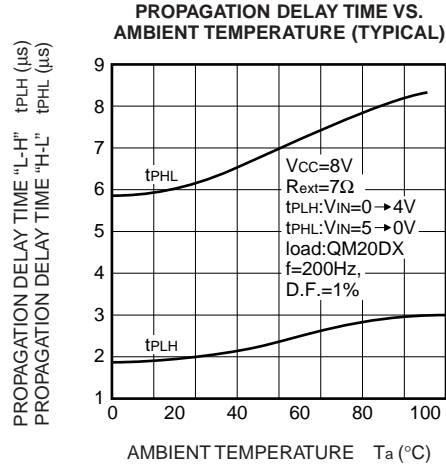
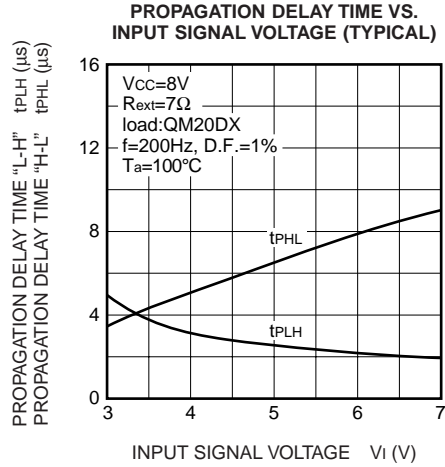
ABSOLUTE MAXIMUM RATINGS ($T_a = -20 \sim +70^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
VCC	Supply voltage	DC	14	V
VI	Input voltage	Between terminals ① and ②	-1 ~ 7	V
IOH	Output current		-1	A
IOLP		Pulse width 10 μ s, Freq. 2kHz, peak value	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	$^\circ\text{C}$

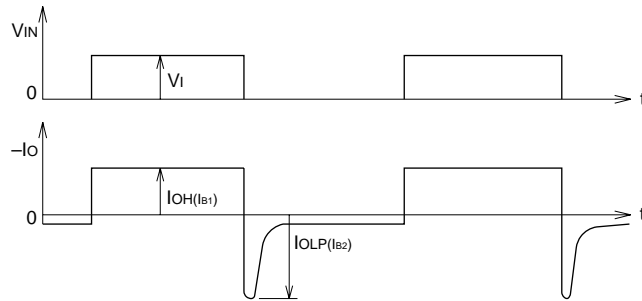
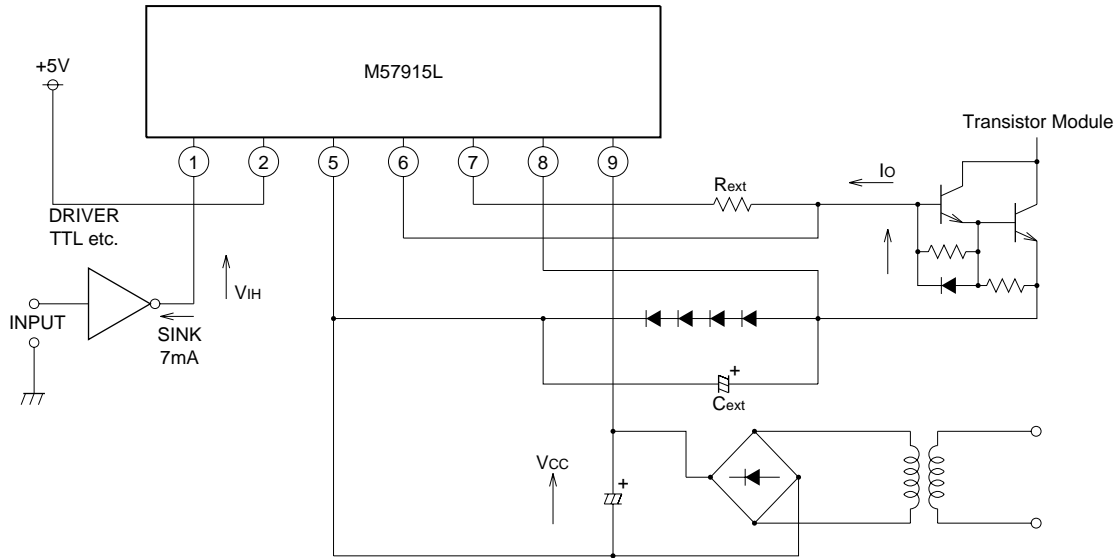
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$, $V_{CC} = 8\text{V}$, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I _{IH}	"H" input current	$V_I = 5\text{V}$	-	7	-	mA
IOH	"H" output current	$R_{ext} = 7\Omega$	-	-0.5	-	A
IOLP	"L" output peak current	$C_{ext} = 47\mu\text{F}$	-	1	-	A
P _D	Internal power dissipation	$I_{OH} = -0.5\text{A}$, $I_{OLP} = 1\text{A}$, $f = 2\text{kHz}$, D.F. = 50%	-	0.8	-	W
t _{PLH}	"L-H" propagation delay time	$V_I = 0 \rightarrow 4\text{V}$, $T_j = 100^\circ\text{C}$	-	5	10	μs
t _{PHL}	"H-L" propagation delay time	$V_I = 5 \rightarrow 0\text{V}$, $T_j = 100^\circ\text{C}$	-	8	15	μs

PERFORMANCE CURVES



TEST CIRCUIT AND APPLICATION CIRCUIT EXAMPLE



Note: I_{OH} and I_{OLP} correspond to base forward current I_{B1} and base reverse current I_{B2} of the transistor module to be driven respectively.