



**M57959L**  
Hybrid IC for IGBT Gate Driver

**Absolute Maximum Ratings,  $T_a \sim 20^\circ\text{C}$  to  $70^\circ\text{C}$  unless otherwise specified**

Item	Symbol	Test Conditions	Limit	Units
Supply Voltage*	$V_{CC}$	DC	18	Volts
	$V_{EE}$	DC	-15	Volts
Input Voltage	$V_I$		-1 ~ 7	Volts
Output Voltage	$V_O$	Output Voltage "H"	$V_{CC}$	Volts
Output Current	$I_{OHP}$	Pulse Width 2 $\mu$ s, f = 20kHz	-2	Amperes
	$I_{OLP}$	Pulse Width 2 $\mu$ s, f = 20kHz	2	Amperes
Output Current	$I_{OH}$	f = 20kHz, 50% Duty Cycle	0.2	Amperes
Isolation Voltage	$V_{RMS}$	Sinewave Voltage 60kHz, 1 min.	2500	Volts
Junction Temperature	$T_j$		85	$^\circ\text{C}$
Operating Temperature	$T_{opg}$	(Differs from H/C Condition)	-20 ~ 60	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-25 ~ 100	$^\circ\text{C}$
Fault Output Current	$I_{FO}$		20	mA
Input Voltage	$V_{R1}$		50	Volts

\*20 Volts  $\leq V_{CC} + V_{EE} \leq 28$  Volts

**Electrical Characteristics,  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 15\text{V}$ ,  $-V_{EE} = 10\text{V}$  unless otherwise specified**

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Supply Voltage	$V_{CC}$	Recommended Range	14	15	—	Volts
	$V_{EE}$	Recommended Range	-7	—	-10	Volts
Pull-up Voltage on Input Side	$V_{IN}$	Recommended Range	4.75	5.00	5.25	Volts
"H" Input Current	$I_{IH}$	$V_{IN} = 5\text{V}$ , R = 185 $\Omega$	—	16	—	mA
"H" Output Voltage	$V_{OH}$		13	14	—	Volts
"L" Output Voltage	$V_{OL}$		-8	-9	—	Volts
Internal Power Dissipation	$P_D$	f = 20kHz,	—	0.86	—	Watts
		Module 200A, 600V IGBT				
"L-H" Propagation Time	$t_{PLH}$	$V_I = 0$ to 4V, $T_j \pm 85^\circ\text{C}$	—	0.8	1.5	$\mu\text{s}$
"L-H" Rise Time	$t_r$	$V_I = 0$ to 4V, $T_j \pm 85^\circ\text{C}$	—	0.5	1.0	$\mu\text{s}$
"H-L" Propagation Time	$t_{PHL}$	$V_I = 0$ to 4V, $T_j \pm 85^\circ\text{C}$	—	1.0	1.5	$\mu\text{s}$
"H-L" Rise Time	$t_r$	$V_I = 0$ to 4V, $T_j \pm 85^\circ\text{C}$	—	0.3	0.6	$\mu\text{s}$
Reset Time of Protection	$t_{RESET}$		1	—	2	ms
Fault Output Current	$I_{FO}$		—	5	—	mA
SC Voltage	$V_{SC}$		15	—	—	Volts

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