

TECHNICAL DATA  
DATA SHEET 2049, REV. -  
*Formerly part number -SHSMG1010*

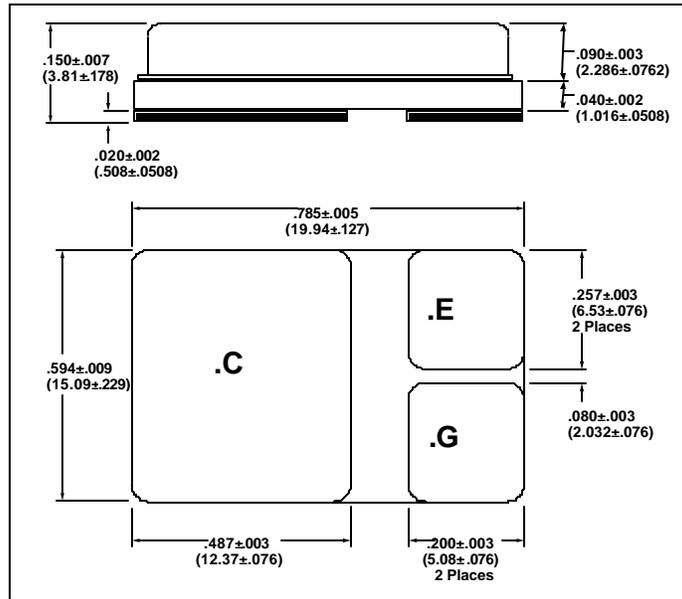
**1000 VOLT, 50 AMP IGBT DEVICE**  
**HIGH SPEED, LOW  $V_{CE}$  IGBT**

**ELECTRICAL CHARACTERISTICS**

( $T_j=25^{\circ}\text{C}$  UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
<b>IGBT SPECIFICATIONS</b>					
Collector to Emitter Breakdown Voltage $I_C = 3 \text{ mA}, V_{GE} = 0\text{V}$	$BV_{CES}$	1000	-	-	V
Continuous Collector Current $T_C = 25^{\circ}\text{C}$ $T_C = 90^{\circ}\text{C}$	$I_C$	-	-	50 25	A
Pulsed Collector Current, 1mS	$I_{CM}$	-	-	100	A
RBSOA $V_{GE} = 15\text{V}, V_{CE} = 800\text{V}, T_j = 125^{\circ}\text{C}$ $L = 100 \text{ uH}, \text{Clamped Inductive Load}$	$I_{CM}$	-	-	50	A
Gate to Emitter Voltage	$V_{GE}$	-	-	+/-20	V
Gate-Emitter Leakage Current, $V_{GE} = +/-20\text{V}$	$I_{GES}$	-	-	+/- 100	nA
Gate Threshold Voltage, $I_C = 0.25 \text{ mA}, V_{CE} = V_{GE}$	$V_{GE(TH)}$	2.5	-	5.0	V
Zero Gate Voltage Collector Current $V_{CE} = 800 \text{ V}, V_{GE}=0\text{V} T_i=25^{\circ}\text{C}$ $V_{CE} = 800 \text{ V}, V_{GE}=0\text{V} T_i=125^{\circ}\text{C}$	$I_{CES}$	-	-	0.25 1.0	mA mA
Collector to Emitter Saturation Voltage, $I_C = 25\text{A}, V_{GE} = 15\text{V},$ $T_C = 25^{\circ}\text{C}$ $T_C = 125^{\circ}\text{C}$	$V_{CE(SAT)}$	-	3.5 3.8	4.0 4.5	V
Input Capacitance Output Capacitance Reverse Transfer Cap. $V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$	$C_{ies}$ $C_{oes}$ $C_{res}$	-	2750 200 50	-	pF
Turn On Delay Time Rise Time Turn Off Delay Time Fall Time Turn off Energy Loss $T_j = 125^{\circ}\text{C}, I_C = 25\text{A}, V_{GE} = 15\text{V}, \text{inductive load},$ $V_{CE} = 800 \text{ V}, R_G = 33 \Omega$	$t_{d(on)}$ $t_r$ $t_{d(off)}$ $t_f$ $E_{off}$ $E_{on}$	-	100 250 720 800 8.0 3.5	-	nsec mJ mJ
Maximum Thermal Resistance	$R_{\theta JC}$	-	-	0.60	$^{\circ}\text{C/W}$

Mechanical Dimensions: In Inches / mm



**SHD-6**

Schematic Diagram



**TECHNICAL DATA**

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