TECHNICAL DATA
DATA SHEET 1006, REV. -
Formerly part number –SHSMG1009

600 VOLT, 40 AMP IGBT DEVICE
HIGH SPEED, IMPROVED SCSOA

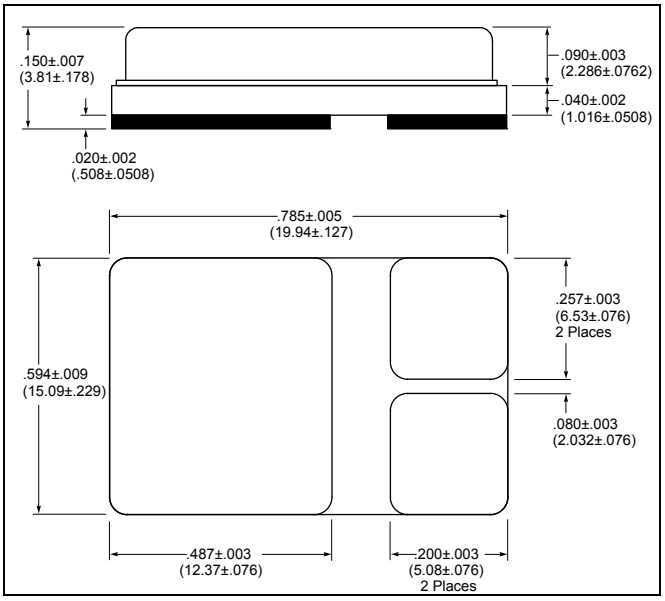
ELECTRICAL CHARACTERISTICS (T_j=25^{0}C UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
IGBT SPECIFICATIONS					
Collector to Emitter Breakdown Voltage I_C = 250 μA, V_{GE} = 0V	BV_{CES}	600	-	-	V
Continuous Collector Current T_C = 25 ^{O}C T_C = 90 ^{O}C	I_C	-	-	40 (1) 40	A
Pulsed Collector Current, 1mS	I_{CM}	-	-	130	A
Short Circuit time, V_{GE} = 15V, V_{CE} = 500V, T_j = 125 ^{O}C di/dt < 300 A/□sec, I_C< 300A	t_{sc}	-	-	10	□sec
Gate to Emitter Voltage	V_{GE}	-	-	+/-20	V
Gate-Emitter Leakage Current, V_{GE} = +/-20V	I_{GES}	-	-	+/- 100	nA
Gate Threshold Voltage, I_C=2mA	$V_{GE(TH)}$	4.0	-	7.0	V
Zero Gate Voltage Collector Current V_{CE} = 600 V, V_{GE}=0V T_j=25^{o}C V_{CE} = 480 V, V_{GE}=0V T_j=125^{o}C	I_{CES}	- -	- -	0.25 3.0	Ma mA
Collector to Emitter Saturation Voltage, T_C = 25 ^{O}C I_C = 40A, V_{GE} = 15V, T_C = 125 ^{O}C	$V_{CE(SAT)}$	-	2.0 2.3	2.3 2.5	V
Input Capacitance Output Capacitance Reverse Transfer Cap. V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz	C_{ies} C_{oes} C_{res}	-	2800 300 200	-	pF
Turn On Delay Time Rise Time Turn Off Delay Time Fall Time Turn off Energy Loss (T_j = 125 ^{O}C, I_C = 40A, V_{GE} = 15V, inductive load, V_{CC} = 300 V, R_G = 22 Ω	$t_{d(on)}$ t_r $t_{d(off)}$ t_f E_{off} E_{on}	- - - - -	100 50 300 40 1.5 2.0	- - - - -	nsec mJ mJ
Maximum Thermal Resistance	$R_{\theta JC}$	-	-	0.60	^{o}C/W

(1) Current is limited by package leads. Die current rating is 65A.
(2) Current is limited by package leads. Die current rating is 75A.
(3) Current is limited by package leads. Die current rating is 50A.

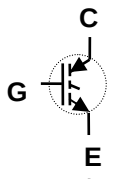
TECHNICAL DATA
DATA SHEET 1006, REV. -

Mechanical Dimensions: In Inches / mm



SHD-6

Schematic Diagram



DISCLAIMER:

1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).
2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment , and safety equipment) , safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement .
3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.
6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.
7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.