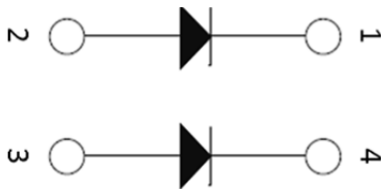


### SiC SBD Parallel Power Module

$$V_{RRM} = 600V$$

$$I_{DAV} = 30A @ T_C = 125^{\circ}C$$



Parallel



#### Features

- **SiC Schottky Diode**
  - Zero reverse recovery
  - Zero forward recovery
  - Temperature Independent switching behavior
  - Positive temperature coefficient on  $V_f$
- Low stray inductance
- High junction temperature operation

#### Applications

- Supplies for DC power equipment
- Rectifier for induction heating
- Welding equipment
- High temperature and rectifiers

#### Benefits

- Outstanding performance at high frequency operation
- Low losses and Low EMI noises
- Very rugged and easy mount
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- Easy paralleling due to positive  $T_C$  of  $V_f$
- RoHS Compliant

#### Absolute Maximum Ratings ( $T_j=25^{\circ}C$ unless otherwise specified)

Parameters	Symbol	Conditions	Specifications	Units
Maximum Reverse Voltage	$V_{RRM}$		600	V
Average Forward Current (per SBD)	$I_{DAV}$	$T_C = 25^{\circ}C$	69	A
		$T_C = 150^{\circ}C$	36	A
Non-repetitive Forward Surge Current	$I_{FSM}$	$t=8.3\text{ ms}, T_C = 25^{\circ}C$	288	A
		$T=10\ \mu s, T_C = 25^{\circ}C$	720	A
Operating Junction Temperature	$T_j$		-55 ~ 175	$^{\circ}C$
Storage Temperature	$T_{STG}$		-55 ~ 150	$^{\circ}C$

### Electrical Characteristics ( $T_j=25^{\circ}\text{C}$ unless otherwise specified)

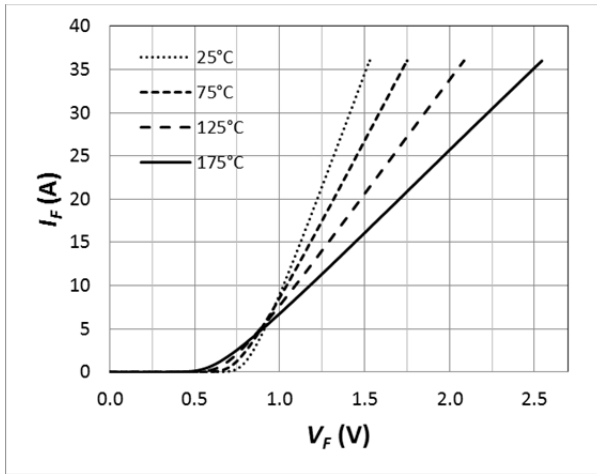
Parameters	Symbol	Conditions	Min	Typ	Max	Units
Maximum peak repetitive reverse voltage	$V_{RRM}$		600	--	--	V
Maximum Reverse Leakage Current per diode	$I_{RM}$	$V_R = 600\text{V}, T_j = 25^{\circ}\text{C}$	--	9.9	100	$\mu\text{A}$
		$V_R = 600\text{V}, T_j = 150^{\circ}\text{C}$	--	1455	--	$\mu\text{A}$
Diode Forward Voltage	$V_F$	$I_F = 30\text{A}, T_j = 25^{\circ}\text{C}$	--	1.5	1.7	V
		$I_F = 30\text{A}, T_j = 175^{\circ}\text{C}$	--	2.5	2.8	V
Total Capacitive Charge	$Q_C$	$V_R=600\text{V}, I_F<I_{F,max}$	--	75	--	nC
Switching Time	$t_C$	$di_F/dt = 200\text{A}/\mu\text{s}, T_j = 175^{\circ}\text{C}$	--	--	10	ns
Total Capacitance	C	$V_R = 1\text{V}, f = 1\text{MHz}$	--	1461	--	pF
		$V_R = 300\text{V}, f = 1\text{MHz}$	--	129	--	pF
		$V_R = 600\text{V}, f = 1\text{MHz}$	--	123	--	pF

### Thermal and Package Characteristics ( $T_j=25^{\circ}\text{C}$ unless otherwise specified)

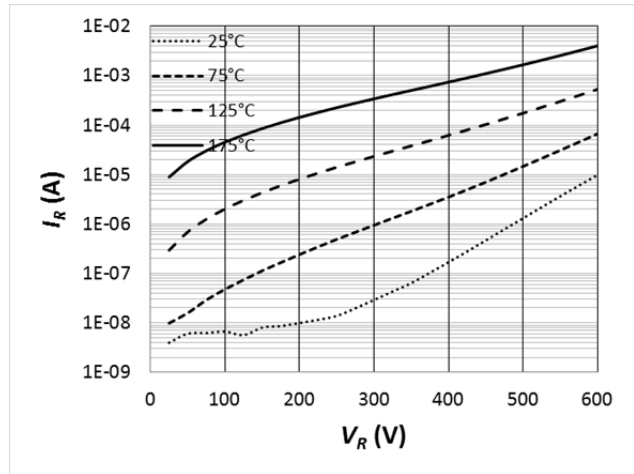
Parameters	Symbol	Conditions	Min	Typ	Max	Units
Junction to Case Thermal Resistance	$R_{THJC}$	Per Diode	--	--	0.51	$^{\circ}\text{C}/\text{W}$
Junction to Ambient Thermal Resistance	$R_{THJA}$	Per Diode	--	--	20	$^{\circ}\text{C}/\text{W}$
Mounting Torque	$M_d$				1.5	N-m
Terminal Connection Torque	$M_{dt}$		1.3	--	1.5	N-m
Package Weight	$W_t$			32		g
Isolation Voltage	$V_{ISOL}$	$I_{ISOL} < 1\text{mA}, 50/60\text{Hz}, t=1\text{min}$	2500	V		

### Product Number and Pin Descriptions

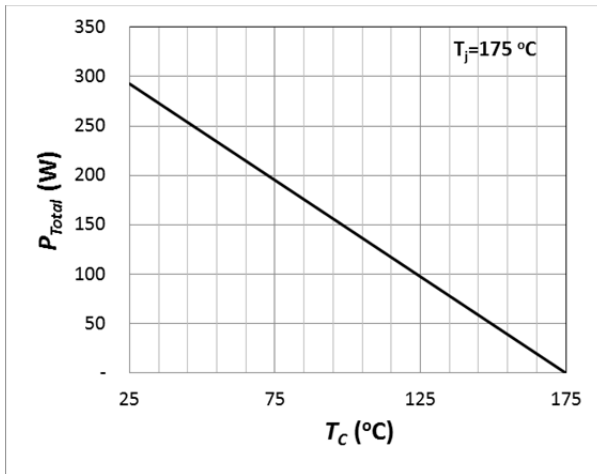
Part Number	Rating	Pin 1	Pin 2	Pin 3	Pin 4
GHXS030A060S-D3	600V, 30A	Cathode 1	Anode 1	Anode 2	Cathode 2



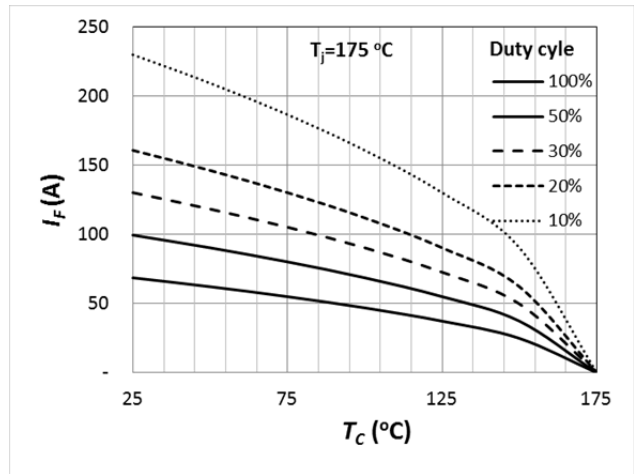
Forward Characteristics (parameterized on  $T_j$ )



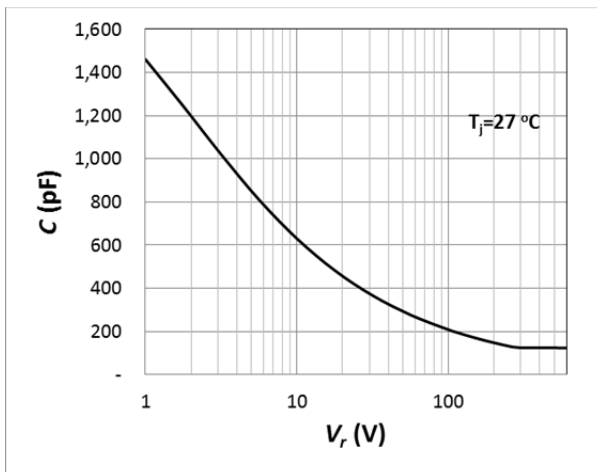
Reverse Characteristics (parameterized on  $T_j$ )



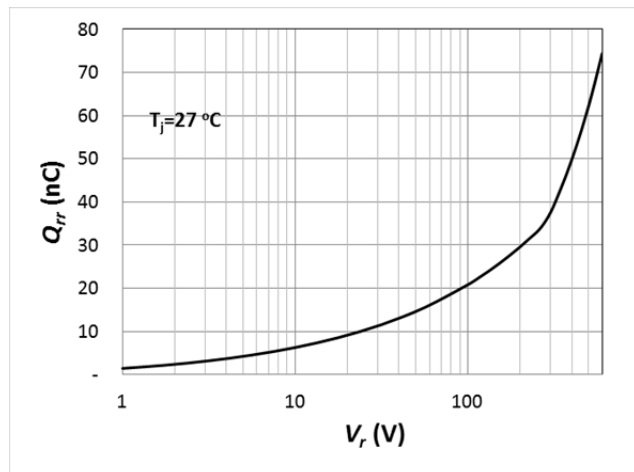
Power Derating



Current Derating

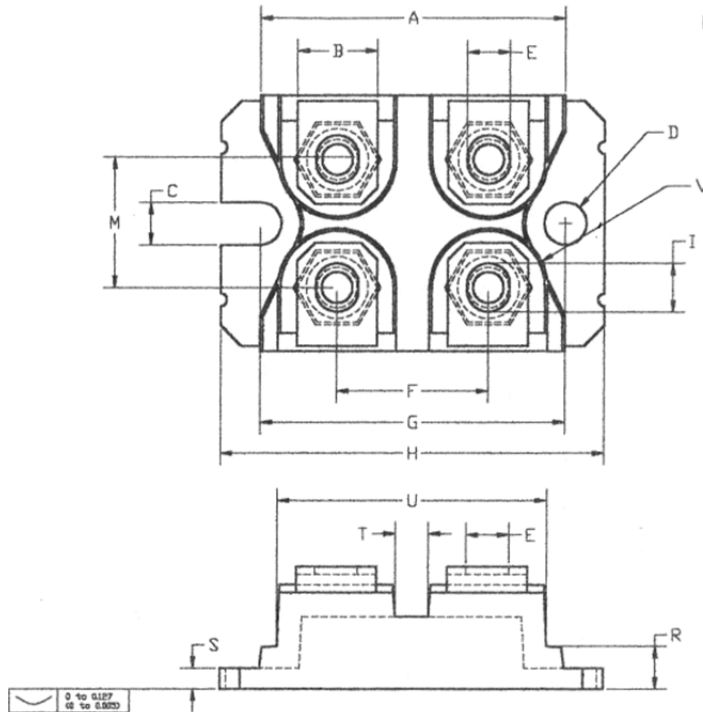


Capacitance Curve

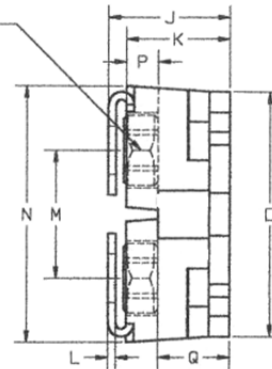


Recovery Charge

**SOT-227 Package Outline**



M4 HEX. NUT  
(4 pcs)



DIM.	MILLIMETER		INCHES	
	Min.	Max.	Min.	Max.
A	31.67	31.90	1.247	1.256
B	7.95	8.18	0.313	0.322
C	4.14	4.24	0.163	0.167
D	4.14	4.24	0.163	0.167
E	4.14	4.24	0.163	0.167
F	14.94	15.09	0.588	0.594
G	30.15	30.25	1.187	1.191
H	38.00	38.10	1.496	1.500
I	4.75	4.83	0.187	0.190
J	11.78	12.19	0.463	0.480
K	9.45	9.60	0.372	0.378
L	0.76	0.84	0.030	0.033
M	12.62	12.88	0.497	0.507
N	25.15	25.30	0.990	0.996
O	24.79	25.04	0.976	0.986
P	2.74	3.15	0.108	0.124
Q	6.91	6.99	0.272	0.275
R	4.17	4.42	0.164	0.174
S	2.08	2.13	0.082	0.084
T	3.28	3.63	0.129	0.143
U	26.75	26.90	1.053	1.059
V	3.94	4.04	0.155	0.159