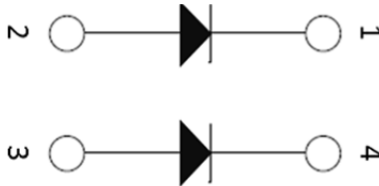


### SiC SBD Parallel Power Module

$$V_{RRM} = 1200V$$

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



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	$V_{RRM}$		1200	V
Average Forward Current (per SBD)	$I_{DAV}$	$T_C = 25^{\circ}C$	60	A
		$T_C = 125^{\circ}C$	30	A
Non-repetitive Forward Surge Current	$I_{FSM}$	$t_p=8.3\text{ ms}, T_C = 25^{\circ}C$	240	A
		$t_p=10\ \mu\text{s}, T_C = 25^{\circ}C$	600	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)

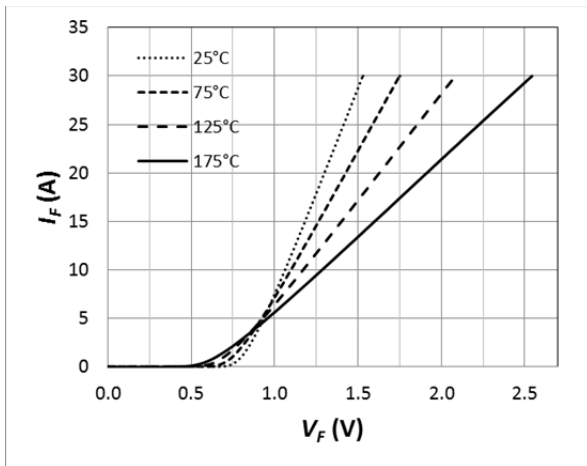
Parameters	Symbol	Conditions	Min	Typ	Max	Units
Maximum peak repetitive reverse voltage	$V_{RRM}$		1200	--	--	V
Maximum Reverse Leakage Current	$I_{RM}$	$V_R = 1200\text{V}, T_j = 25^{\circ}\text{C}$	--	9	200	$\mu\text{A}$
		$V_R = 1200\text{V}, T_j = 150^{\circ}\text{C}$	--	1212	--	$\mu\text{A}$
Diode Forward Voltage	$V_F$	$I_F = 30\text{A}, T_j = 25^{\circ}\text{C}$	--	1.5	1.7	V
		$I_F = 30\text{A}, T_j = 150^{\circ}\text{C}$	--	2.3	--	V
Total Capacitive Charge	$Q_C$	$V_R=1200\text{ V}, I_F<I_F,\text{max}$	--	105	--	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	$V_R = 1\text{V}, f = 1\text{ MHz}$	--	1800	--	pF
		$V_R = 600\text{V}, f = 1\text{ MHz}$	--	105	--	pF
		$V_R = 1200\text{V}, f = 1\text{ MHz}$	--	86	--	pF

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

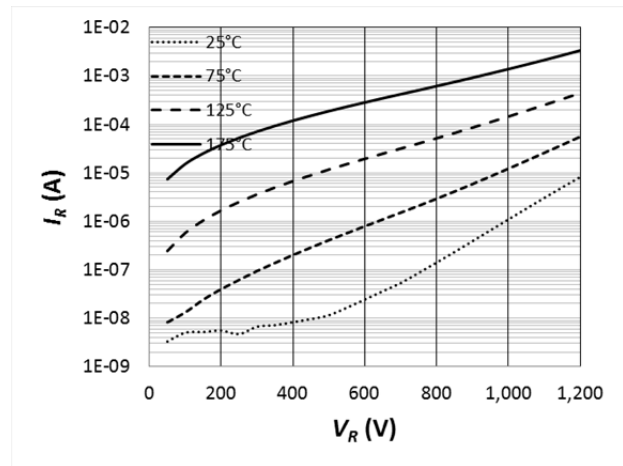
Parameters	Symbol	Conditions	Min	Typ	Max	Units
Junction to Case Thermal Resistance	$R_{THIC}$	Per Diode	--	--	0.65	$^{\circ}\text{C}/\text{W}$
		Per Module	--	--	TBD	$^{\circ}\text{C}/\text{W}$
Junction to Ambient Thermal Resistance	$R_{THJA}$	Per Diode	--	--	TBD	$^{\circ}\text{C}/\text{W}$
		Per Module	--	--	TBD	$^{\circ}\text{C}/\text{W}$
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 Descriptions

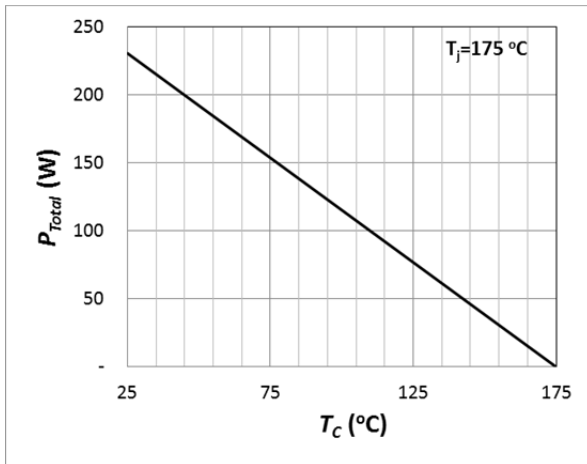
Part Number	Rating	Pin 1	Pin 2	Pin 3	Pin 4
GHXS030A120S-D3	1200V, 30A	Cathode 1	Anode 1	Anode 2	Cathode 2



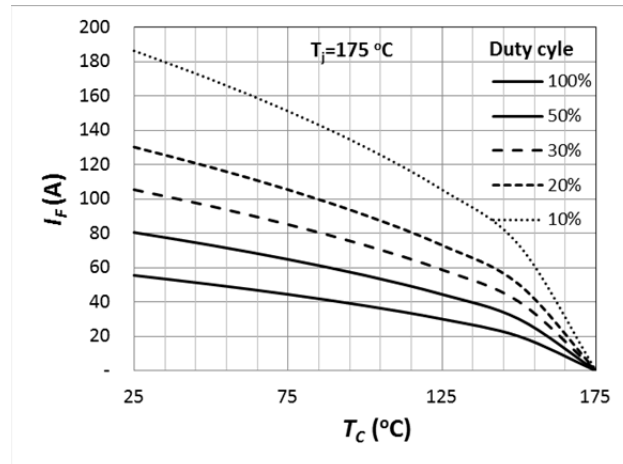
**Forward Characteristics (parameterized on T<sub>j</sub>)**



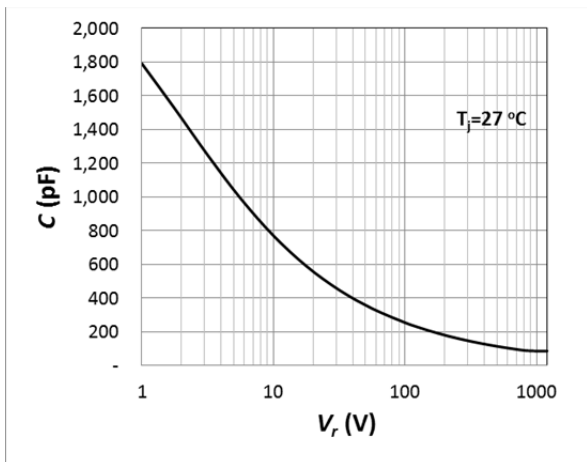
**Reverse Characteristics (parameterized on T<sub>j</sub>)**



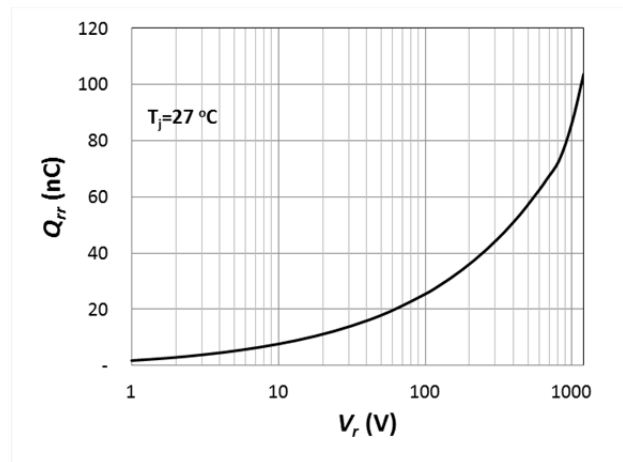
**Power Derating**



**Current Derating**



**Capacitance Curve**



**Recovery Charge**

**SOT-227 Package Outline**

