

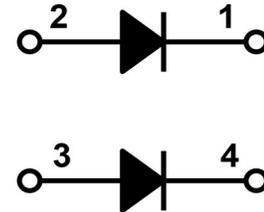
VDC	600 V
I _F	10 A
T _{j,max}	175 °C

600V SiC Power Module Dual Diode Pack

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
- All parts tested to greater than 715V

Package



Parallel

Benefits

- Outstanding performance at high frequency operation
- Low loss and low EMI noise
- Very rugged and easy mounting
- Internally isolated package (AIN)
- Low junction to case thermal resistance
- Easy paralleling due to positive T_C of V_F
- RoHS compliant

Part #	Package	Marking
GHXS010A060S-D3	SOT-227	GHXS010A060S-D3

Applications

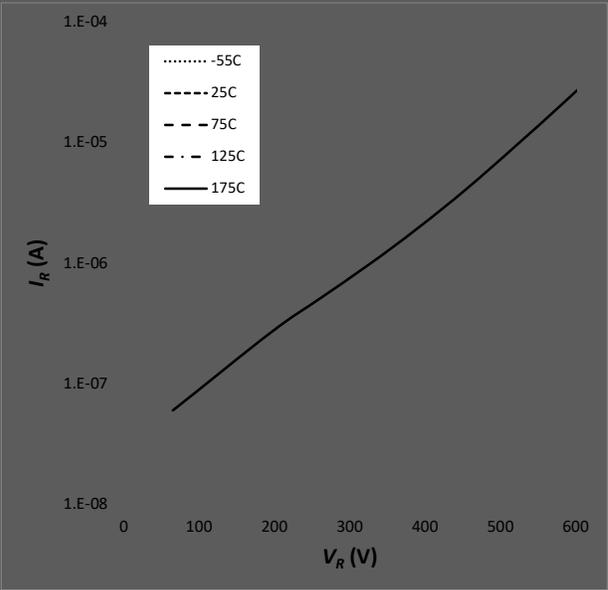
- Switched-mode power supply
- Induction heater
- Welding equipment
- Charging station



Maximum Ratings, at T_j=25 °C, unless otherwise specified (per leg)

Characteristics	Symbol	Conditions	Values	Unit
Continuous forward current	I _F	T _C =25 °C, T _j =175 °C	32	A
		T _C =152 °C, T _j =175 °C	10	
		T _C =150 °C, T _j =175 °C	11	
Surge non-repetitive forward current sine halfwave	I _{FSM}	T _C =25 °C, t _p =8.3 ms	110	A
		T _C =110 °C, t _p =8.3 ms	100	
Non-repetitive peak forward current	I _{F,max}	T _C =25 °C, t _p =10 μs	720	A
² value	∫ ²	T _C =25 °C, t _p =8.3 ms	50	A²s
		T _C =110 °C, t _p =8.3 ms	42	
Repetitive peak reverse voltage	V _{R,RRM}	T _j =25 °C	600	V
Diode ruggedness		Turn-on slew rate, repetitive	200	V/ns
Power dissipation	P _{tot} *	T _C =25 °C	97	W
Operating junction temperature	T _j		-55...175	°C
Storage temperature	T _{storage}		-55...150	°C

Notes: *Typical R_{th,c} used



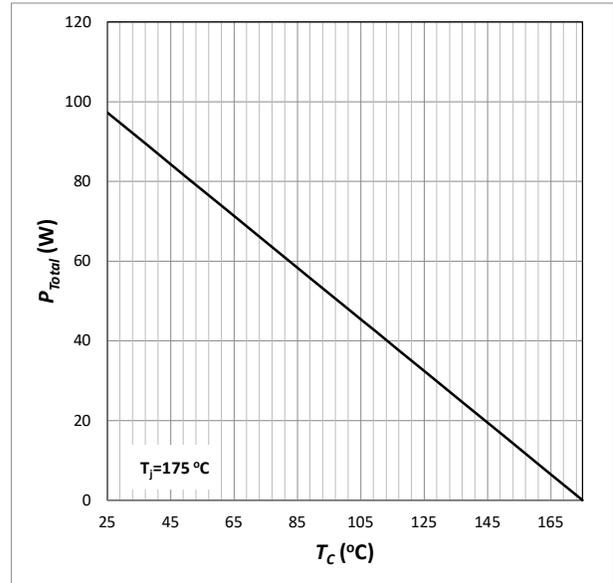


Fig. 4 Power Derating

Fig. 3 Reverse Characteristics (parameterized on T_j)

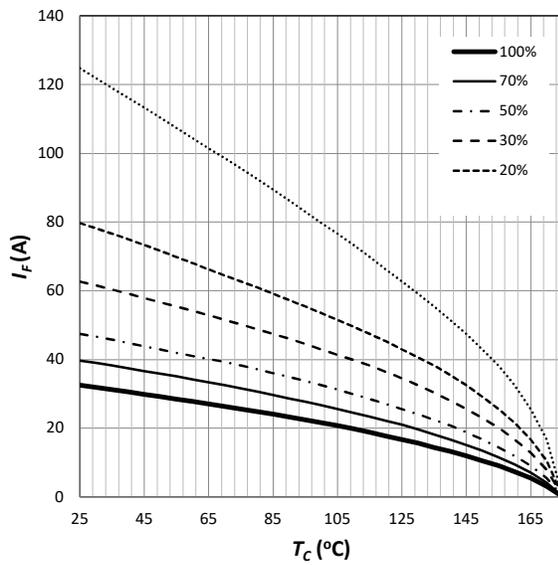


Fig. 5 Current Derating

Fig. 6 Capacitance

600V SiC Power Module

GHXS010A060S-D3

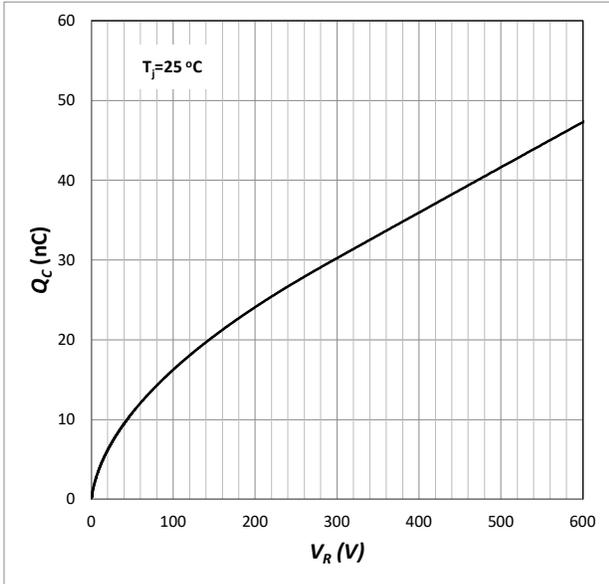


Fig. 7 Capacitive Charge

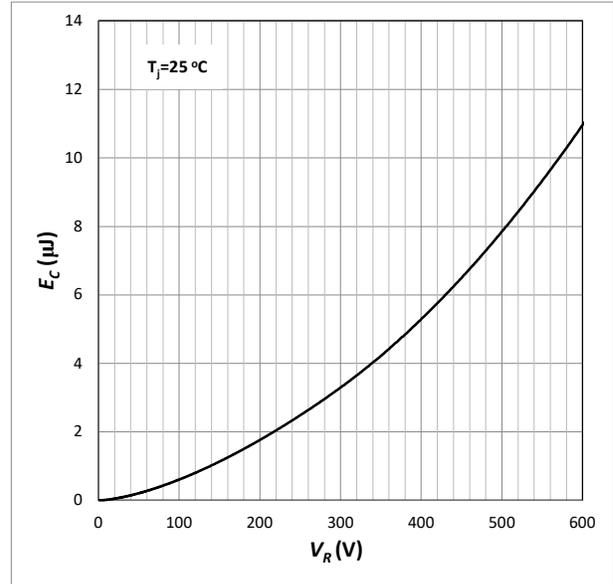


Fig. 8 Typical Capacitance Stored Energy

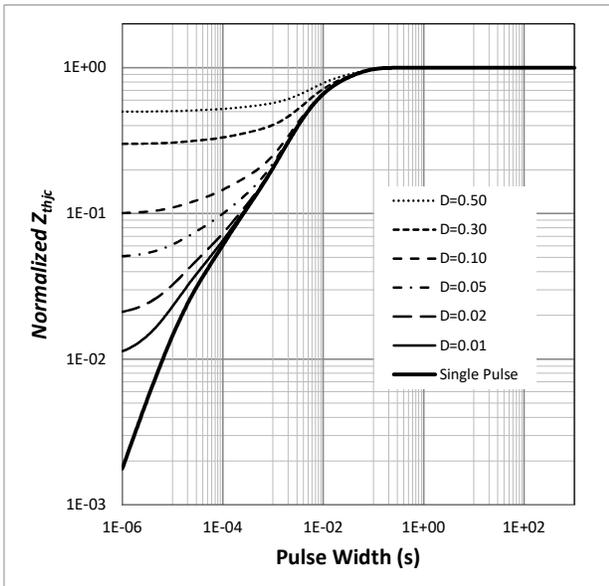
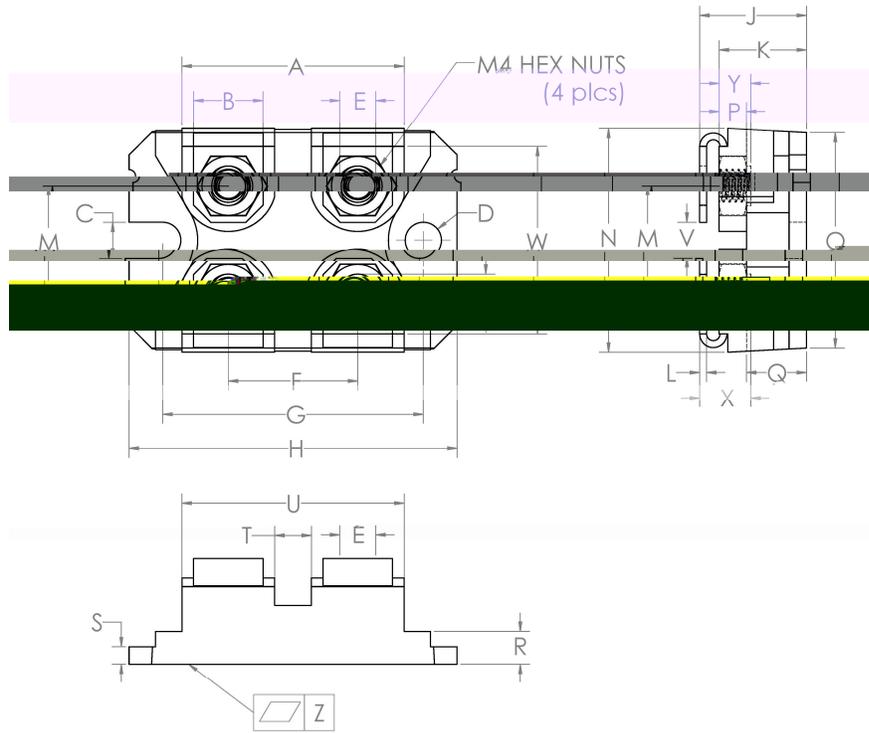


Fig. 9 Transient Thermal Impedance

600V SiC Power Module

GHXS010A060S-D3

Package Dimensions SOT-227



Sym	Millimeters		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	11.68	12.19	0.460	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	3.02	3.15	0.119	0.124
Q	6.71	6.96	0.264	0.274
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	3.86	4.24	0.152	0.167
W	20.55	26.90	0.809	0.814
X	5.45	5.85	0.215	0.230
Y	3.15	3.66	0.124	0.144
Z	0.00	0.13	0.000	0.005

Revision History

Date	Revision	Notes
9/6/2011	1.0	Initial release
6/4/2014	1.1	Add the part number, pin assignment table.
1/3/2020	1.2	Applied company name change.
11/20/2020	1.3	Updated parameters.

Notes

RoHS Compliance

The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2011/65/EC (RoHS2), as implemented March, 2013. RoHS Declarations for this product can be obtained from the Product Documentation sections of www.SemiQ.com.

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