



Silicon Carbide Schottky Diode

Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at +175 °C
- Unipolar devices and reverse recovery current
- Reverse recovery current
- Essentially no switching losses
- Reduction of heat sink requirements
- AEC-Q101 qualified
- High-Z reverse operation
- Reduction of EMI

Typical Applications

Typical applications are in power factor correction PFC, solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

Mechanical Data

- Package . TO-263
- Molding compound meets UL - (V-0) flammability rating, RoHS-compliant, halogen-free
- Terminals .Tin plated leads
- Polarity . As marked

Maximum Ratings $T_c = 125$ °C

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			D106520BQG3
Reverse voltage (repetitive peak) $T_c = 125$ °C	V_{RRM}	V	650
Reverse voltage (Surge Peak) $T_c = 125$ °C	V_{RSM}	V	T

$T_c = 125$ °C			50
Continuous forward current $T_c = 125$ °C			20
Non-repetitive peak forward surge current $T_c = 125$ °C, $t_p < 10$ ms, $d < 10$ %	I_{FSM}	A	30
Power Dissipation $T_c = 125$ °C	P_{TOT}	K	3.5
Power Dissipation $T_c = 110$ °C			162.5
Soft Value $T_c = 125$ °C, $t_p < 10$ ms	% LGW	6	

2SHUDWLQJ MXQFWLRQ DQG 6WRUDJH HP SHUDWXUH UDQJH 7



Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V _F	V	I _F 120A ž. T25 š C	1.2	1.3
			I _F 120A ž. T1 + 5 š C	1.2+	-
Reverse leakage current	I _R	A	V _R 1650V ž. T25 š C	3	25
			V _R 1650V ž. T1 + 5 š C	20	-
Total capacitance charge	Q _c	nC	V _R 100V ž. T25 š C ž Q _c 10 ⁶ RC f V L dV	135.3	-
Total capacitance	C	pF	V _R 10V ž. Z 11M < N	2 (53	-
			V _R 1200V ž. Z 11M < N	2 (+	-
			V _R 100V ž. Z 11M < N	2 (3	-
Capacitance Stored Energy	E	J	V _R 100V	16.5	-

Thermal Characteristics f_a 125 8 QOHVV RWKHUZLVH VSHFLILHG

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	R _{J-C}	š C # K	0. (

Typical Characteristics

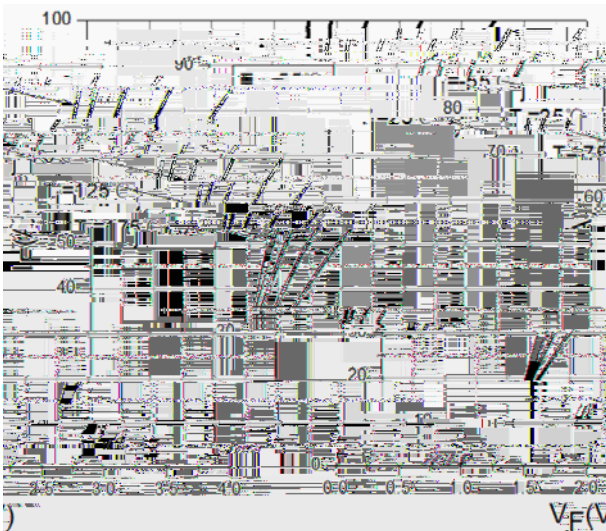


Figure 1. Forward Characteristics

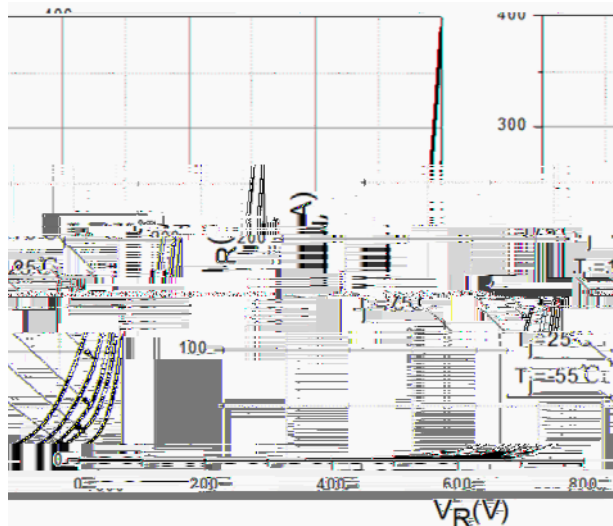


Figure2. Reverse Characteristic



H k i w t g 5 0 E c r c e k v u p X g n u 0 i t g g x w t g 6 H 0 k M q v c n E c r c e k v c p e g E j c t i g x u C

H k i w t g 7 0 E c r c e f k G p c p t e i g { U v q t

H k i w t g 8 0 R q y g t F g t c v k p i

H k i w t g 9 0 E w t i t g p v F g t c v k p
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