

DESCRIPTION

SiC Schottky Diode has no switching loss,provides improved system efficiency against Si diodes by utilizing new semiconductor material-Silicon Carbide,enables higher operating frequency, and helps increasing power density and reduction of system size /cost.Its high reliability ensures robust operation during surge or over_voltage conditions.

FEATURES

- Max Junction Temperature 175°C
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery/No Forward Recovery

MECHANICAL DATA

- Case: JEDEC TO-247AC
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked
- Mounting Torque: 10 in-lbs maximum

TYPICAL APPLICATIONS

- General Purpose
- SMPS, Solar inverter, UPS
- Power Switching Circuits

KEY PERFORMANCE AND PACKAGE PARAMETERS

Type	V _{DC}	I _F	Q _c	T _j max	Package
SC100120P	1200V	100A	422nC	175°C	TO-247AC

TO-247AC

SC100120P



Pin1  Pin3

MAXIMUM RATINGS

(Ratings at 25°C ambient temperature unless otherwise specified)

Parameters	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	1200	V
Continuous Forward Current for Rth(j-c)	I_F	100 ($T_c \leq 134^\circ\text{C}$) 193 ($T_c \leq 25^\circ\text{C}$)	A
Non-Repetitive Forward Surge Current (Half-Sine Pulse, $t_p=10\text{ms}$)	I_{FSM}	612	A
I^2t value	$\int i^2 dt$	1554	A^2S
Power dissipation for Rth(j-c,max) ($T_c=25^\circ\text{C}$)	P_{tot}	789	W
Operating junction temperature range	T_j	-55...175	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55...175	$^\circ\text{C}$

THERMAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	TO-247AC	Unit
Diode thermal resistance junction-case	$R_{th(j-c)}$	0.19	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS (T_A=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
DC blocking voltage	V _{DC}	T _J =25...175°C	1200	-	-	V
Diode forward voltage	V _F	I _F =100A T _J =25°C	-	1.53	1.70	V
		I _F =100A T _J =175°C	-	2.26	2.4	
Reverse current	I _R	V _R =1200V T _J =25°C	-	5	100	uA
		V _R =1200V T _J =175°C	-	-	400	

DYNAMIC CHARACTERISTICS(at T_J=25°C,unless otherwise specified)

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Total capacitive charge	Q _c	V _R =800V		422		nC
Total capacitance	C	V _R =1V,f=1MHz		4448		pF
		V _R =400V,f=1MHz		391		
		V _R =800V,f=1MHz		307		

FIG.1-FORWARD CURRENT DERATING CURVE

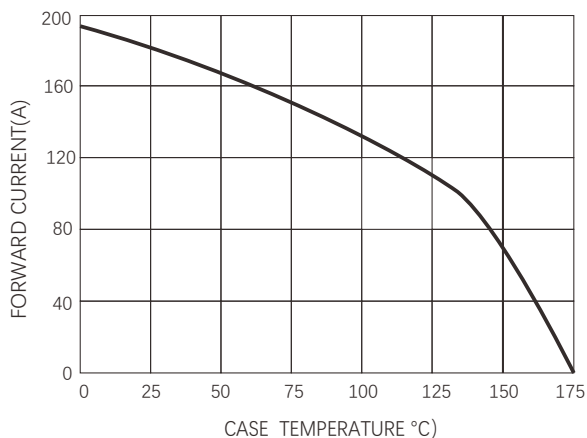


FIG.2-TYPICAL JUNCTION CAPACITANCE

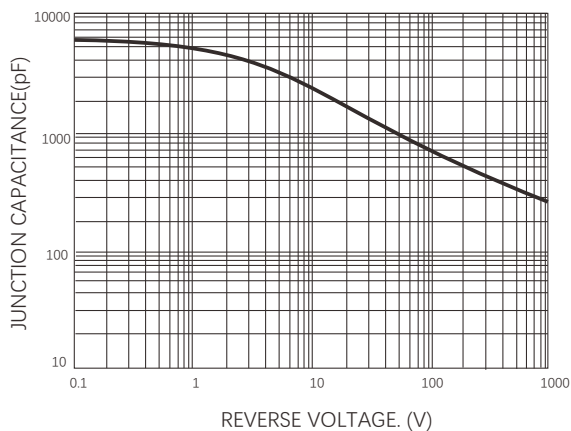


FIG.3-FORWARD CURRENT DERATING CURVE

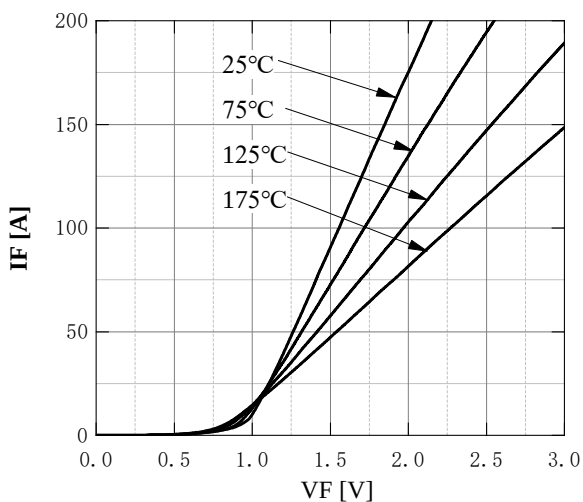


FIG.4-REVERSE CHARACTERISTICS

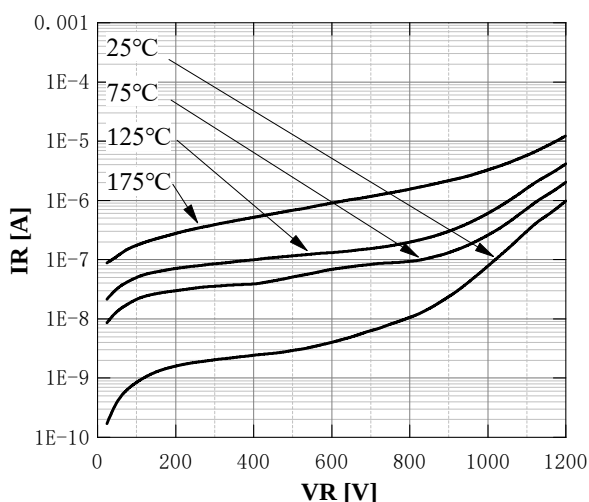


FIG.5-CAPACITIVE CHARGE VS. REVERSE VOLTAGE

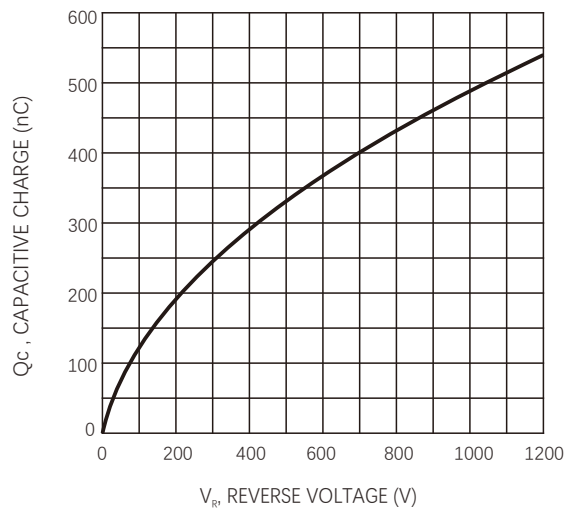
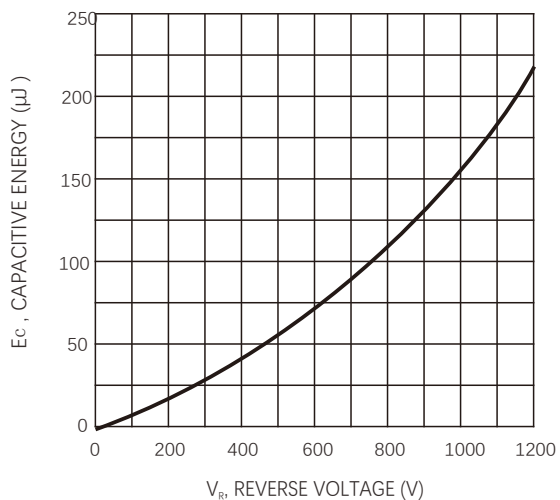
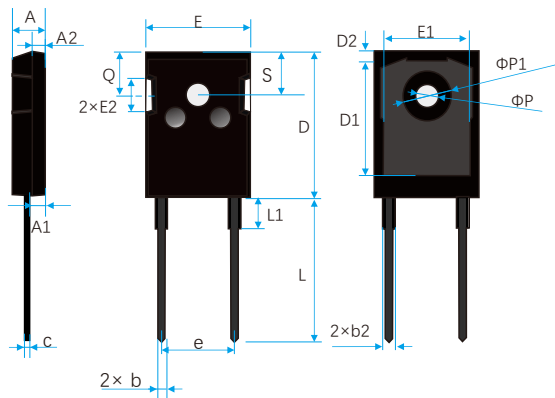


FIG.6-CAPACITANCE STORED ENERGY



TO-247AC

Dimensions in inches and (millimeters)



Symbol	millimeter		
	Min	Typ	MAX
A	4.70		5.30
A1	2.21		2.59
A2	1.50		2.49
D	20.50		21.30
E	15.48		16.24
E2	4.30		5.50
e		10.92	
L	19.80		20.30
L1	4.10		4.50
ΦP		3.50	
Q	5.38		6.19
S		6.14	
b	0.99		1.40
b2	1.65		2.39
c	0.38		0.89
D1	13.07		1.35
D2	0.51		
E1	13.30		
ΦP1		7.20	

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