

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-220AC
- 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

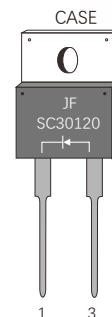
TYPICAL APPLICATIONS

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

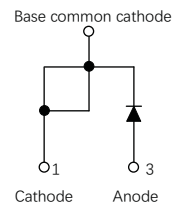
KEY PERFORMANCE AND PACKAGE PARAMETERS

Type	V_{DC}	I_F	Q_c	$T_{j,max}$	Package
SC30120	1200V	30A	206nC	175°C	TO-220AC

TO-220AC



Dimensions in inches and (millimeters)



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 $R_{th(j-c)}$	I_F	30($T_c=157^{\circ}C$) 107($T_c=25^{\circ}C$)	A
Non-repetitive forward surge current (Half-Sine Pulse, $t_p=10ms$)	I_{FSM}	300 ($T_c=25^{\circ}C$)	A
I^2t value	I^2t	374($T_c=25^{\circ}C$)	A^2S
Power dissipation for $R_{th(j-c,max)}$ ($T_c=25^{\circ}C$)	P_{tot}	214	W
Operating junction temperature range	T_j	- 55...175	$^{\circ}C$
Storage temperature range	T_{stg}	- 55...175	$^{\circ}C$

THERMAL CHARACTERISTICS

Parameter	Symbol	Value		Unit
		Typ	Max	
Diode thermal resistance junction-case	$R_{th(j-c)}$	0.7	-	K/W

ELECTRICAL CHARACTERISTICS (T_j=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 = 30A T _j =25°C	-	1.32	1.50	V
		I _F = 30A T _j =175°C	-	1.75	-	
Reverse current	I _R	V _R =1200 T _j =25°C	-	-	50	uA
		V _R =1200 T _j =175°C	-	-	200	

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 =1000V		206		nC
Total capacitance	C	V _R =0V,f=1MHz		1800		pF
		V _R =400V,f=1MHz		150		
		V _R =800V,f=1MHz		100		
		T _j =25°C				

FIG.1-FORWARD CURRENT DERATING CURVE

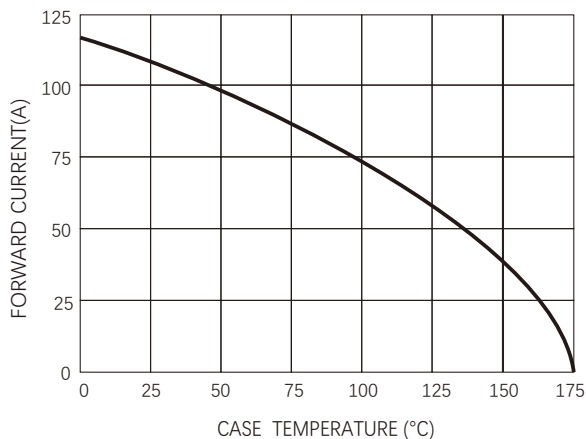


FIG.2-TYPICAL JUNCTION CAPACITANCE

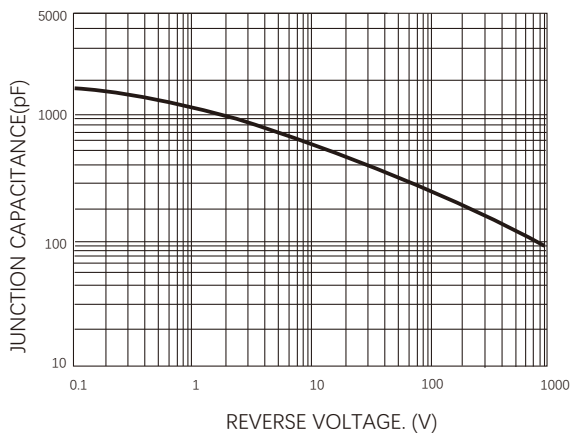


FIG.3-FORWARD CURRENT DERATING CURVE

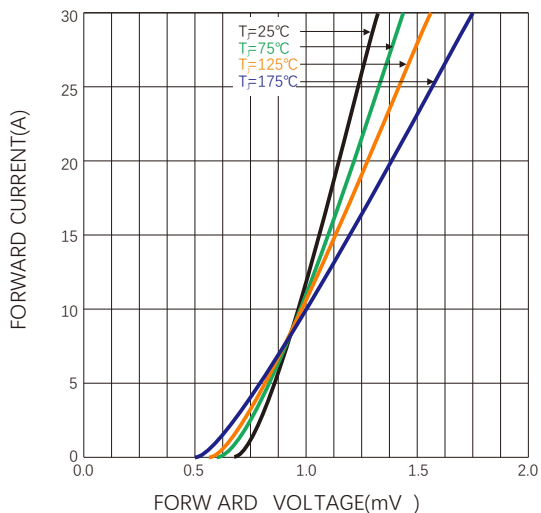
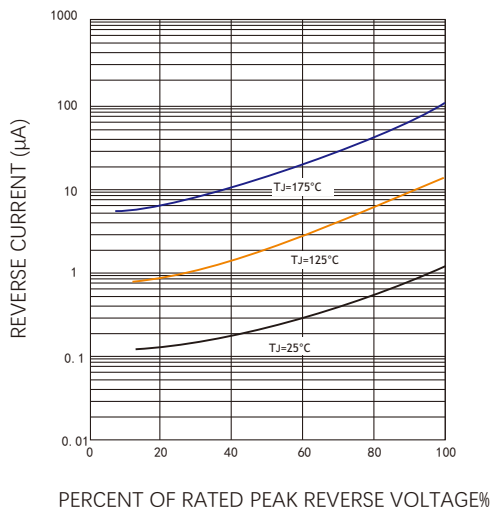
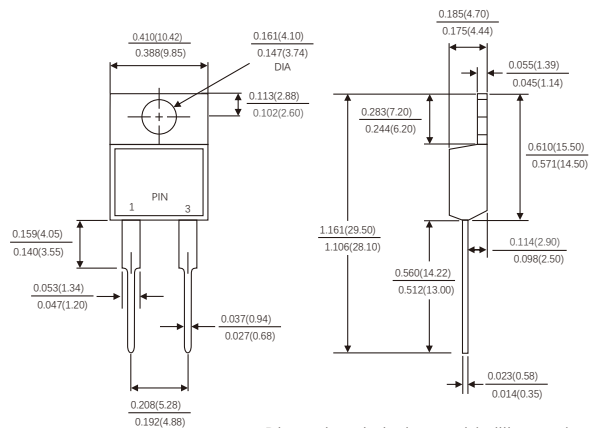


FIG.4-REVERSE CHARACTERISTICS



PACKAGE OUTLINE DIMENSIONS

TO-220AC



Dimensions in inches and (millimeters)

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