

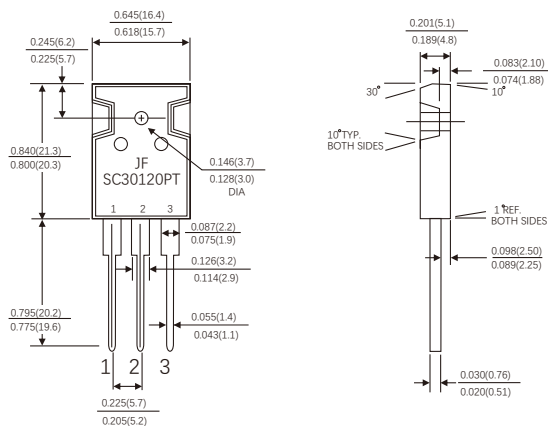
## DESCRIPTION

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

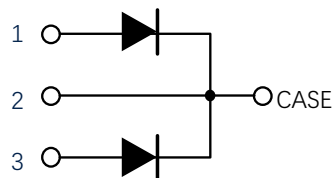
## TO-247AB



Dimensions in inches and (millimeters)

## MECHANICAL DATA

- Case: JEDEC TO-247AB
- 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 <sub>DC</sub>	I <sub>F</sub>	Q <sub>c</sub>	T <sub>j,max</sub>	Package
SC30120PT	1200V	2×15A	86nC	175°C	TO-247AB

## MAXIMUM RATINGS

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

Parameters	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	1200	V
Continuous forward current for $R_{\theta JC}$	$I_F$	15( $T_c=150^\circ\text{C}$ ) 23( $T_c=125^\circ\text{C}$ ) 43( $T_c=25^\circ\text{C}$ )	A
Non-repetitive forward surge current (Half-Sine Pulse, $t_p=8.3\text{ms}$ )	$I_{FSM}$	130	A
$I^2t$ value	$\int i^2 t$	41.5	$\text{A}^2\text{S}$
Power dissipation for $R_{\theta JC}$	$P_{tot}$	214	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	Value (leg/device)		Unit
		Typ	Max	
Diode thermal resistance junction-case	$R_{\theta JC}$	0.70/0.35	-	$^\circ\text{C/W}$

## ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Value(Per leg)			Unit
			min	typ	max	
DC blocking voltage	V <sub>DC</sub>	T <sub>J</sub> =25...175°C	1200	-	-	V
Diode forward voltage	V <sub>F</sub>	I <sub>F</sub> =15A T <sub>J</sub> =25°C	-	1.5	1.7	V
		I <sub>F</sub> =15A T <sub>J</sub> =175°C	-	2.1	2.7	
Reverse current	I <sub>R</sub>	V <sub>R</sub> =1200V T <sub>J</sub> =25°C	-	-	40	uA
		V <sub>R</sub> =1200V T <sub>J</sub> =175°C	-	-	300	

## DYNAMIC CHARACTERISTICS(at T<sub>J</sub>=25°C,unless otherwise specified)

Parameter	Symbol	conditions	Value(Per leg)			Unit
			min	typ	max	
Total capacitive charge	Q <sub>c</sub>	V <sub>R</sub> =800V		86		nC
Total capacitance	C	V <sub>R</sub> =1V,f=1MHz		962		pF
		V <sub>R</sub> =400V,f=1MHz		81		
		V <sub>R</sub> =800V,f=1MHz		59		

FIG.1-FORWARD CURRENT DERATING CURVE(device)

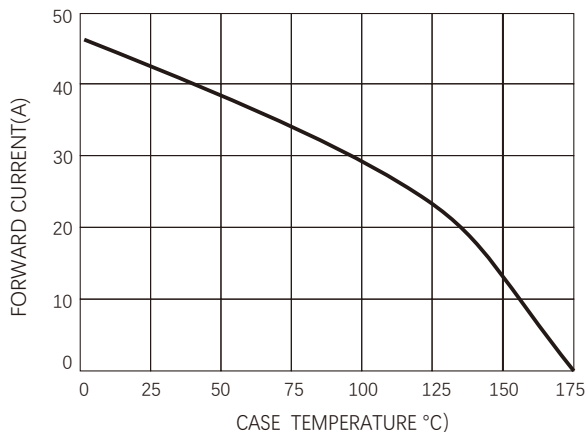


FIG.2-TYPICAL JUNCTION CAPACITANCE(per leg)

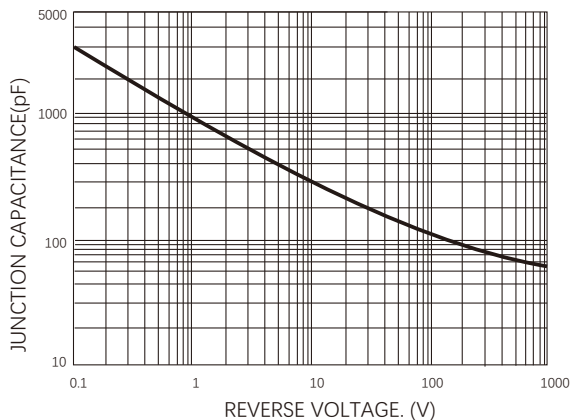


FIG.3-FORWARD CURRENT DERATING CURVE(per leg)

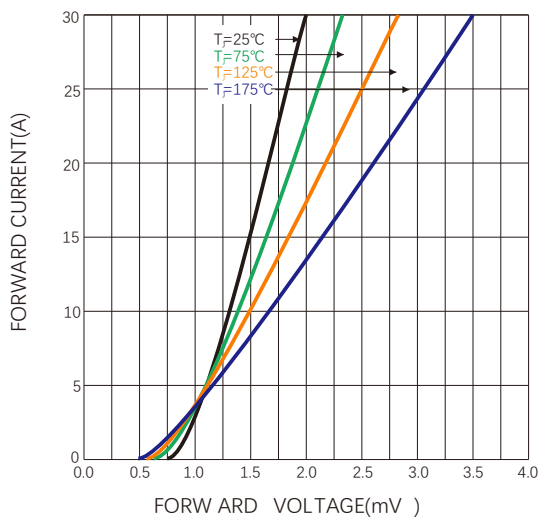
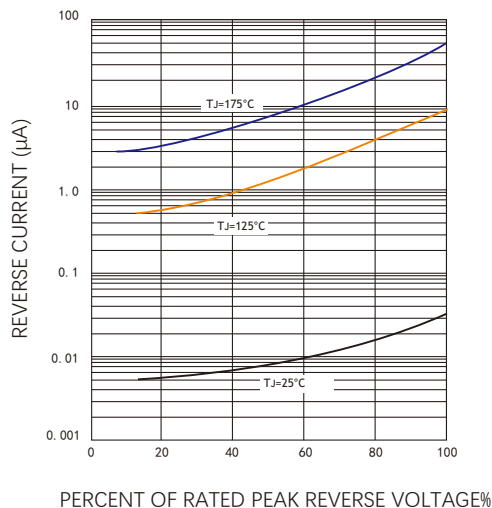


FIG.4-REVERSE CHARACTERISTICS(per leg)



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