

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

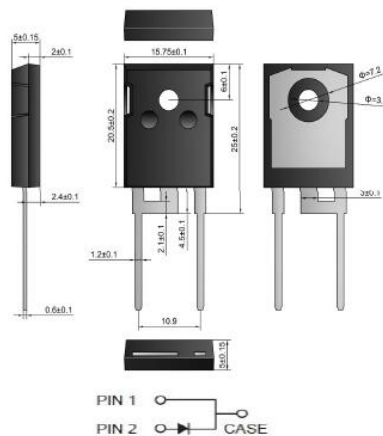
MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	1200	V
Continuous Rectified Forward Current	I_F	15	A
Repetitive Forward Surge Current (NOTE 1)	$I_{F, RM}$	120	A
Operating junction temperature range	T_J	-55 to+175	° C
Storage temperature range	T_{stg}	-55 to+175	° C

Notes: 1.Half-Sine Pulse, $t_p=8.3ms$

TO-247AC



RATINGS AND CHARACTERISTIC OF SC15120P

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

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instantaneous forward voltage	$I_F=15\text{A}$	$T_A=25^{\circ}\text{C}$	V_F	1.5	1.8	V
		$T_A=125^{\circ}\text{C}$		2.0	2.4	
		$T_A=175^{\circ}\text{C}$		2.4	2.8	
Reverse current	$V_R=1200\text{V}$	$T_A=25^{\circ}\text{C}$	I_R	–	10	μA
		$T_A=125^{\circ}\text{C}$		–	40	
		$T_A=175^{\circ}\text{C}$		–	80	
Typical junction capacitance	$V_R=1\text{V}, f=100\text{kHz}$		C_j	530	–	pF
	$V_R=4\text{V}, f=100\text{kHz}$			340	–	
	$V_R=40\text{V}, f=100\text{kHz}$			130	–	

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

Parameter	Symbol	SC10120PT	Unit
Typical thermal resistance ²⁾	$R_{\theta JC}$	0.5	$^{\circ}\text{C}/\text{W}$

2.Thermal resistance from junction to case

RATINGS AND CHARACTERISTIC OF SC15120P

FIG.1-FORWARD CURRENT DERATING CURVE

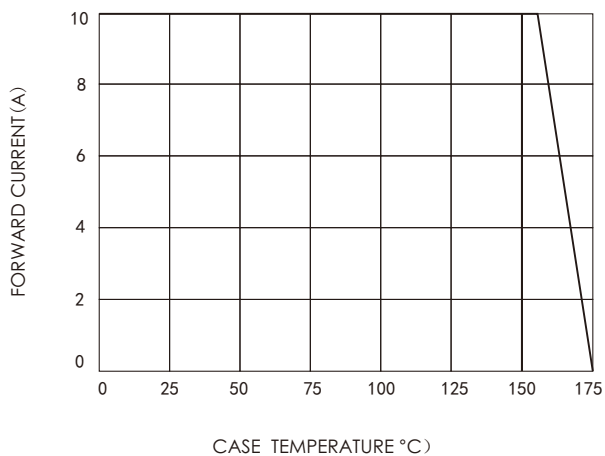


FIG.2-TYPICAL JUNCTION CAPACITANCE

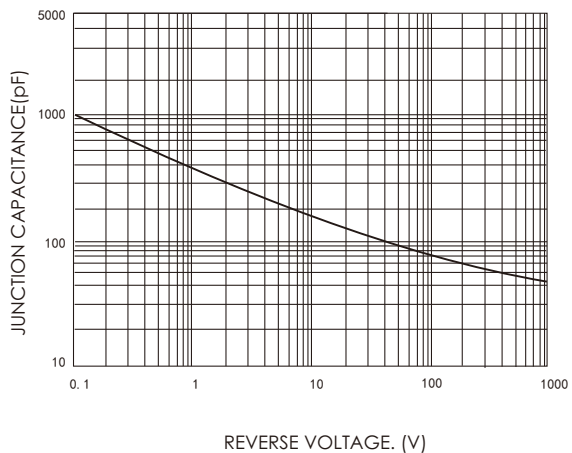


FIG.3-FORWARD CURRENT DERATING CURVE

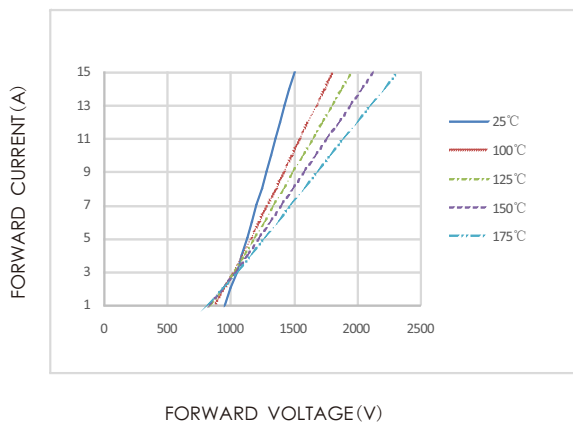


FIG.4-REVERSE CHARACTERISTICS

