

## 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

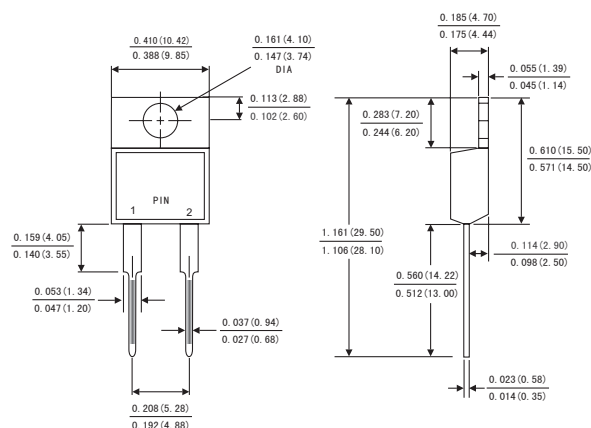
## MAXIMUM RATINGS

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

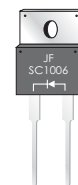
Parameter	Symbol	SC1006	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	V
Continuous Rectified Forward Current	$I_F$	10.0	A
Repetitive Forward Surge Current(NOTE 1)	$I_{F, RM}$	40.0	A
Operating junction temperature range	$T_J$	-55 to+175	°C
Storage temperature range	$T_{stg}$	-55 to+175	°C

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

## TO-220AC



Dimensions in inches and (millimeters)



## RATINGS AND CHARACTERISTIC OF SC1006

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

Parameter	Test Conditions		Symbol	TYP.	MAX.	Unit
Instaneous forward voltage	I <sub>F</sub> =10A	T <sub>A</sub> =25°C	V <sub>F</sub>	1.41	1.8	V
		T <sub>A</sub> =150°C		1.62	1.8	
Reverse current	V <sub>R</sub> =600V	T <sub>A</sub> =25°C	I <sub>R</sub>	-	10	μA
		T <sub>A</sub> =125°C		-	40	
		T <sub>A</sub> =175°C		-	100	
Typical junction capacitance	V <sub>R</sub> =1V, f=100kHz		C <sub>j</sub>	480	-	pF
	V <sub>R</sub> =4V, f=100kHz			310	-	
	V <sub>R</sub> =40V, f=100kHz			120	-	

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

Parameter	Symbol	SC1006	Unit
Typical thermal resistance <sup>2)</sup>	R <sub>θJC</sub>	2.5	°C/W

2.Thermal resistance from junction to case

### AVAILABALE PACK INFORMATION

Product code	Package	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton SizeL×W×H(mm)	Quantity(box/carton)
SC1006-TO-220AC	P/T	558×148×38	1000	565×225×170	5

# RATINGS AND CHARACTERISTIC OF SC1006

FIG.1-FORWARD CURRENT DERATING CURVE

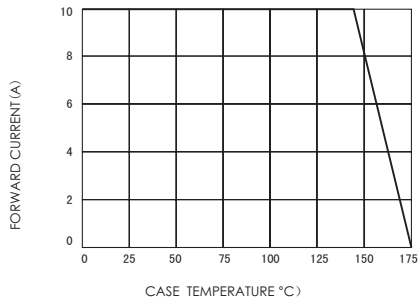


FIG.2-FORWARD CURRENT DERATING CURVE

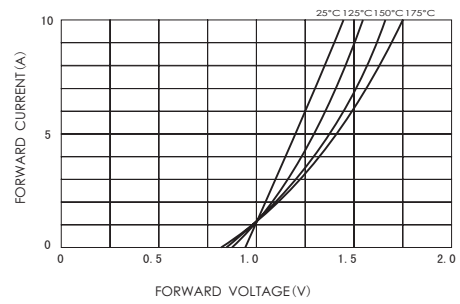


FIG.3-TYPICAL JUNCTION CAPACITANCE

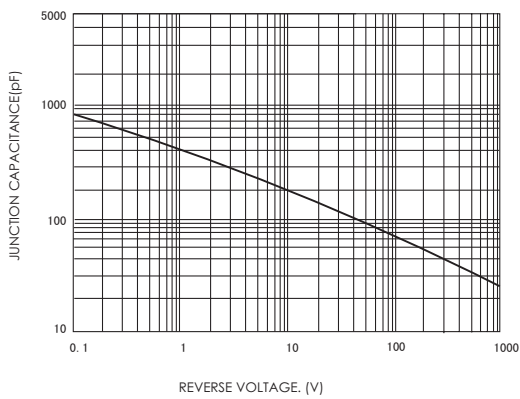


FIG.4-REVERSE CHARACTERISTICS

