

## 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-220AB/ITO-220AB/TO-263AB
- 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

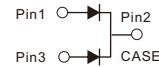
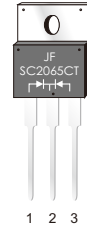
(Ratings at 25°C ambient temperature unless otherwise specified )

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	650	V
Continuous Rectified Forward Current	$I_F$	20	A
Repetitive Forward Surge Current (NOTE 1)	$I_{F, RM}$	70	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,  $t_p=8.3ms$

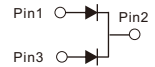
### TO-220AB

SC2065CT



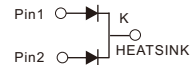
### ITO-220AB

SC2065FCT



### TO-263

SC2065D1



## RATINGS AND CHARACTERISTIC

### 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> =20A	T <sub>A</sub> =25°C	V <sub>F</sub>	1.5	1.8	V
		T <sub>A</sub> =175°C		1.7	2.0	
Reverse current	V <sub>R</sub> =650V	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 (Pre Diode)	V <sub>R</sub> =1V, f=100kHz		C <sub>j</sub>	450	-	pF
	V <sub>R</sub> =10V, f=100kHz			220	-	
	V <sub>R</sub> =40V, f=100kHz			125	-	

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

Parameter	Symbol	SC2065CT	SC2065FCT	SC2065D1	Unit
Typical thermal resistance <sup>2)</sup>	R <sub>θJC</sub>	2.5	4.5	2.5	°C/W

2.Thermal resistance from junction to case

# RATINGS AND CHARACTERISTIC

FIG.1-FORWARD CURRENT DERATING CURVE

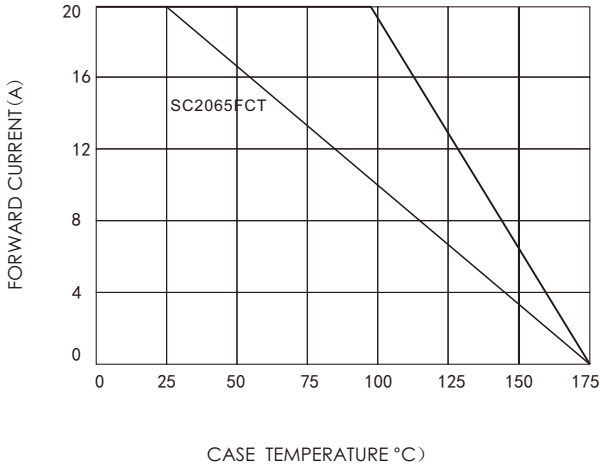


FIG.3-TYPICAL JUNCTION CAPACITANCE

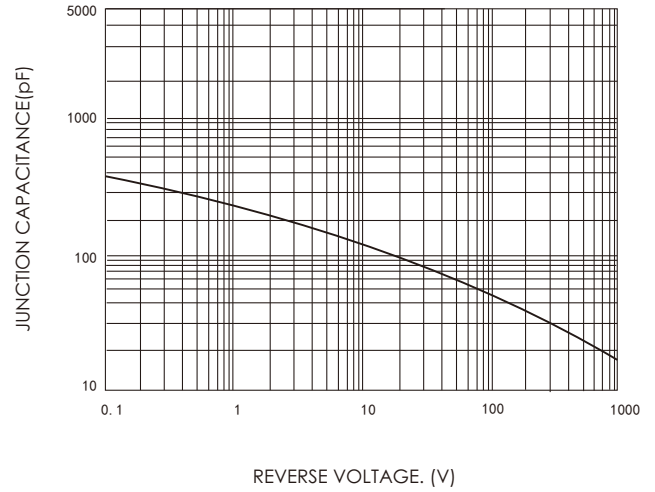


FIG.2-FORWARD CHARACTERISTICS (Pre Diode)

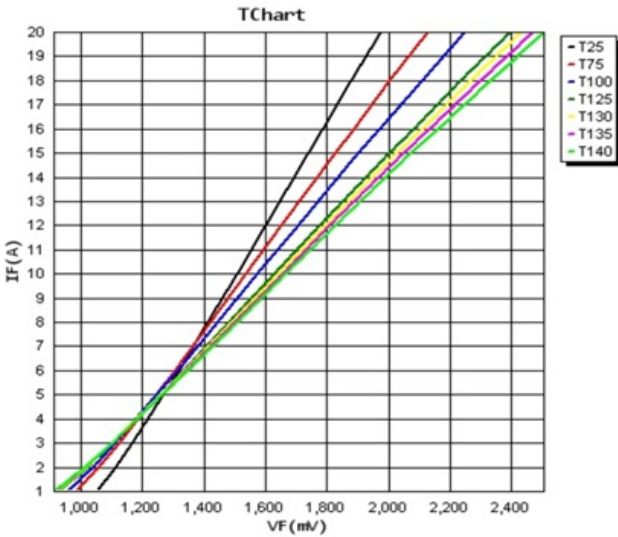
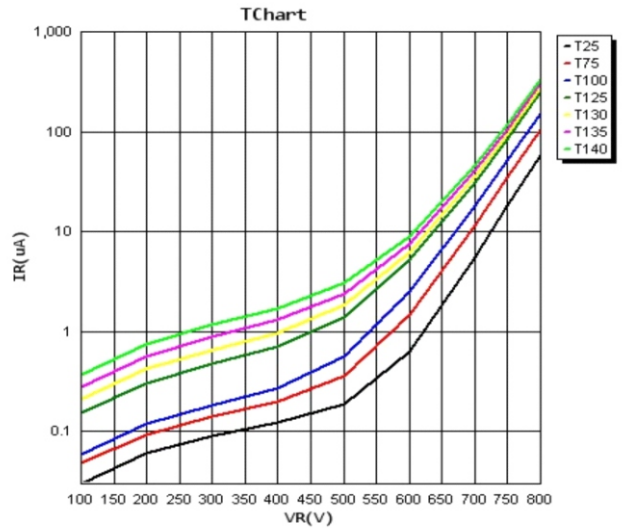


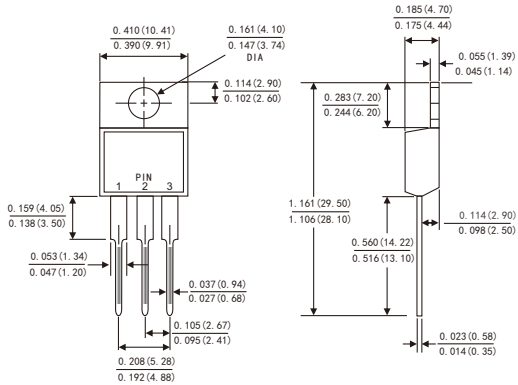
FIG.4-REVERSE CHARACTERISTICS (Pre Diode)



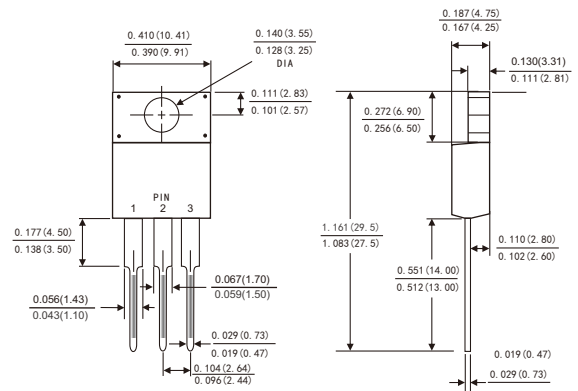
# PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

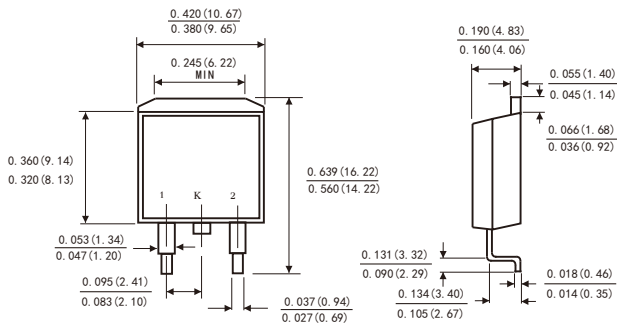
## TO-220AB



## ITO-220AB



## TO-263



## Suggested Pad Layout

