

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-263
- 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

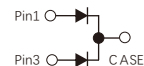
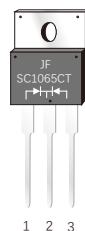
- General Purpose
- SMPS, Solar inverter, UPS
- Power Switching Circuits

KEY PERFORMANCE AND PACKAGE PARAMETERS(leg/device)

Type	V _{DC}	I _F	Q _c	T _{j,max}	Package
SC1065CT	650V	5/10A	18nC/36nC	175°C	TO-220AC
SC1065F	650V	5/10A	18nC/36nC	175°C	ITO-220AC
SC1065D2	650V	5/10A	18nC/36nC	175°C	TO-263

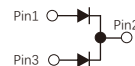
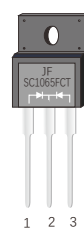
TO-220AB

SC1065CT

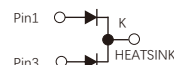
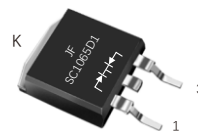


ITO-220AB

SC1065FCT



TO-263
SC1065D1



MAXIMUM RATINGS

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

Parameter	Symbol	Value(Leg/device)	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	650	V
Continuous Forward Current for $R_{th(j-c)}$	I_F	5/10 (Tc≤155°C for TO-220AB/TO-263) 5/10 (Tc≤135°C for ITO-220AB)	A
Non-Repetitive Forward Surge Current (Half-Sine Pulse, tp=8.3mS)	I_{FSM}	45/90	A
I^2t value	$\int i^2t$	8.4/33.6	A ² S
Power dissipation for $R_{th(j-c)}$	P_D	125(TO-220AB/TO-263) 60(ITO-220AB)	W
Operating junction temperature range	T_J	-55 ~ 175	°C
Storage temperature range	T_{STG}	-55 ~ 175	°C

THERMAL CHARACTERISTICS

Parameter	Symbol	ITO-220AC	TO-220AC TO-263	Unit
Thermal Resistance Junction-Case(device)	$R_{th(j-c)}$	2.5	1.2	°C/W

ELECTRICAL CHARACTERISTICS (T_J=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Value(Per leg)			Unit
			Min	Typ	Max	
Dc Blocking Voltage	V _{DC}	I _R =20uA	650	-	-	V
Diode Forward Voltage	V _F	I _F =5A T _J =25°C	-	1.4	1.7	V
		I _F =5A T _J =175°C	-	1.6	2.0	
Reverse Current	I _R	V _R =650V T _J =25°C	-	-	20	uA
		V _R =650V T _J =175°C	-	-	150	

DYNAMIC CHARACTERISTICS(at T_J=25°C,unless otherwise specified)

Parameter	Symbol	Conditions	Value(Per leg)			Unit
			Min	Typ	Max	
Total Capacitive Charge	Q _c	V _R =1200V, I _F =10A di/dt=200A/uS	-	18	-	nC
Total Capacitance	C	V _R =0V, f=1MHz	-	300	-	pF
		V _R =200V, f=1MHz	-	34	-	
		V _R =400V, f=1MHz	-	30	-	

RATINGS AND CHARACTERISTIC OF SC1065XX

FIG.1-FORWARD CURRENT DERATING CURVE(device)

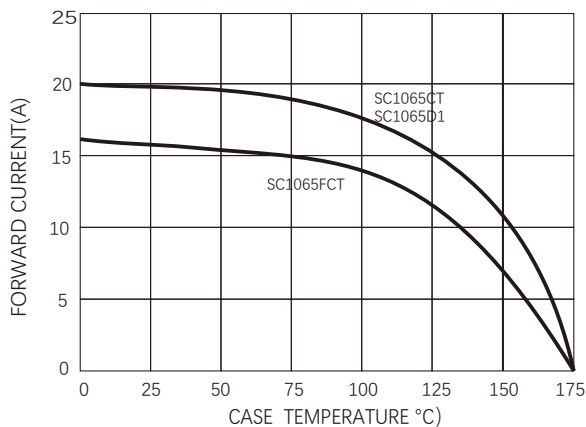


FIG.2-TYPICAL JUNCTION CAPACITANCE(device)

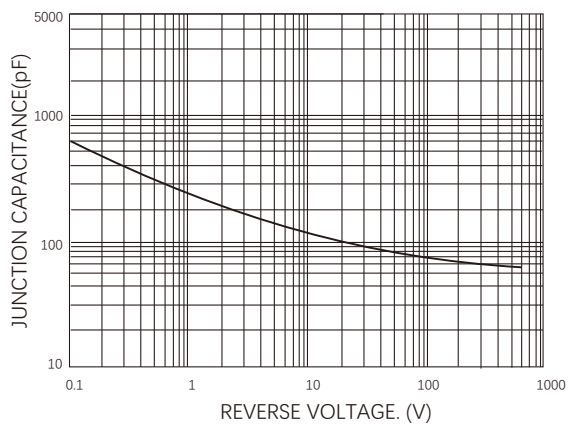


FIG.3-FORWARD CURRENT DERATING CURVE(per leg)

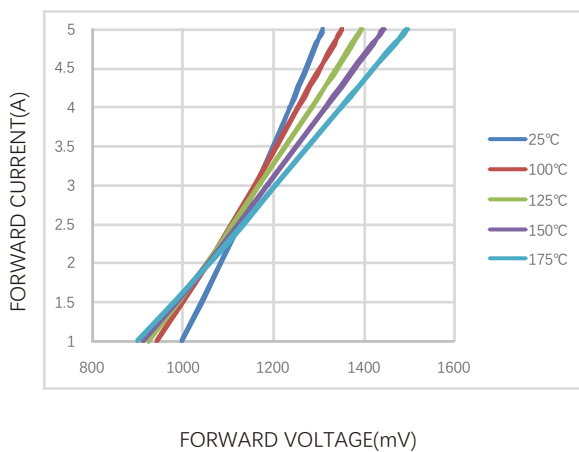
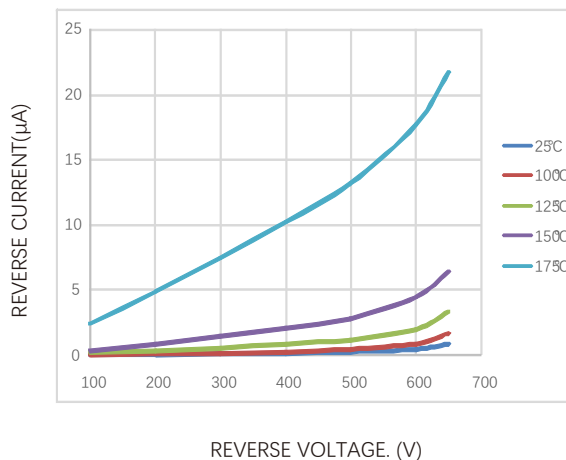
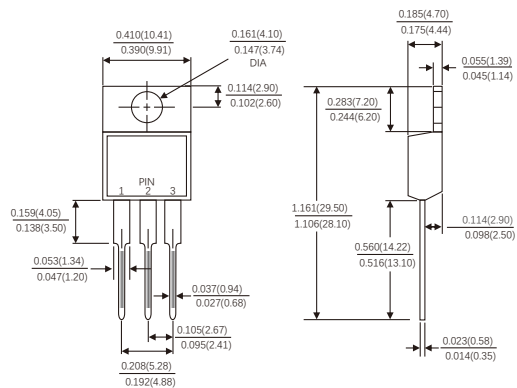


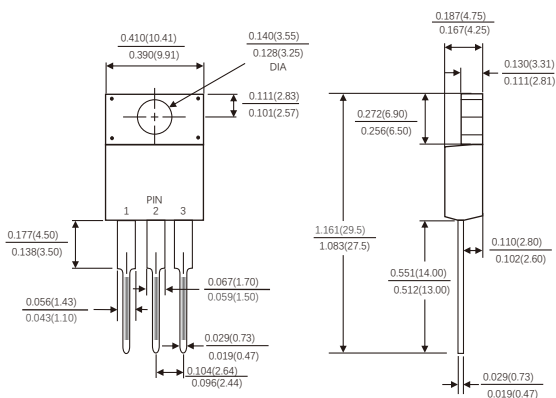
FIG.4-REVERSE CHARACTERISTICS(per leg)



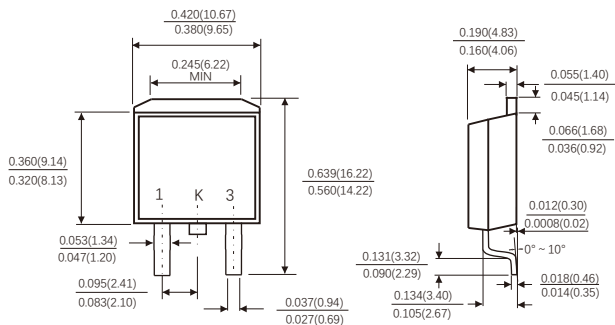
TO-220AB



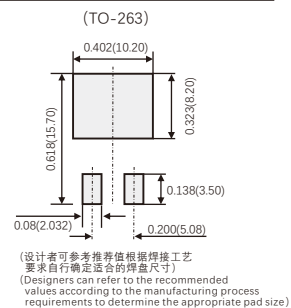
ITO-220AB



TO-263



Suggested Pad Layout



Friendship Reminder

- JiNan JingHeng (hereinafter referred to as JH) reserves the right to make changes to this document and its products and specifications at anytime without notice.
- Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
- JH makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does JH assume any liability for application assistance or customer product design.
- JH does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.
- No license is granted by implication or otherwise under any intellectual property rights of JH.
- JH's products are not authorized for use as critical components in life support devices or systems without express written approval of JH.