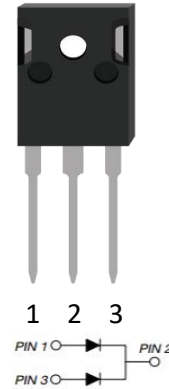


12A, 650V SIC Schottky Rectifier

FEATURES

- 650V schottky rectifier
- Zero reverse recovery current
- Zero forward recovery voltage
- Switching characteristics independent on temperature
- Positive temperature coefficient of forward voltage
- High temperature soldering guaranteed: 270°C/10 seconds
- RoHS compliant
- Halogen free

TO-247

**RoHS
COMPLIANT**
**HALOGEN
FREE**

MECHANICAL DATA

- Case: TO-247
- Case material: molding compound meets UL 94V-0 flammability rating

TYPICAL APPLICATION

General purpose use in HAVC, SMPS, AC/DC converters, free wheeling diodes in inverter stages.

MAXIMUM RATINGS

$T_J=25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Cotinuous Forward Current($T_C=150^\circ\text{C}$)	I_F	12	A
Repetitive Peak Forward Surge Current ($t_p=10\text{ms}, T_C=25^\circ\text{C}$)	I_{FRM}	40	A
Peak Forward Surge Current ($t_p=10\text{ms}, T_C=25^\circ\text{C}$)	I_{FSM}	65	A
Non-Repetitive peak forward surge current ($t_p = 10 \mu\text{s}; T_C = 25^\circ\text{C}, \text{pulse}$)	I_{Fmax}	520	A
Power Dissipation $T_C=25^\circ\text{C}$ $T_C=110^\circ\text{C}$	P_{tot}	136 59	W
Operating Junction Temperature Range	T_J	-55 to +175	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +175	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

$T_J=25^\circ\text{C}$ unless otherwise noted

Parameter	Test Conditions	Symbol	Value		Unit
			Typ.	Max.	
Forward Voltage@ $I_F=6\text{A}$	$T_J=25^\circ\text{C}$	V_F	1.45	1.7	V
	$T_J=175^\circ\text{C}$		1.75	2.4	
Reverse Current @ V_{RRM}	$T_J=25^\circ\text{C}$	I_R	2	20	μA
	$T_J=175^\circ\text{C}$		40	200	
Total Capacitance	$V_R=0\text{V}, f=1\text{MHz}$	C	332	-	pF
	$V_R=200\text{V}, f=1\text{MHz}$		33	-	
	$V_R=400\text{V}, f=1\text{MHz}$		28	-	
Total Capacitance Charge	$V_R=400\text{V}$	Q_C	17	-	nC
Capacitance Stored Energy	$V_R=400\text{V}$	E_C	4.3	-	μJ
Thermal Resistance	Junction to case	$R_{\theta JC}$	1.1		$^\circ\text{C}/\text{W}$

RATINGS AND CHARACTERISTIC CURVES

FIG.1: Forward Characteristics

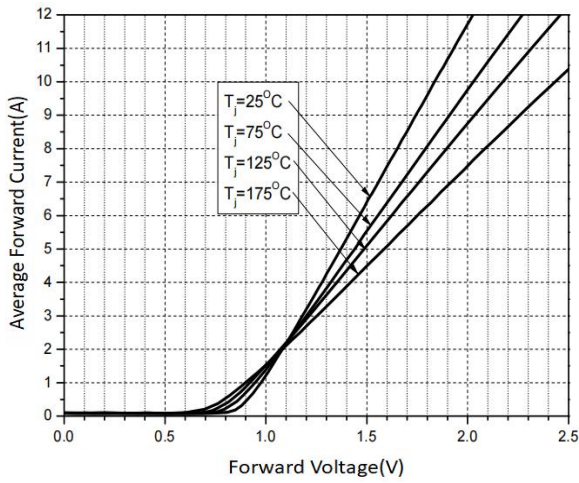


FIG.2: Reverse Characteristics

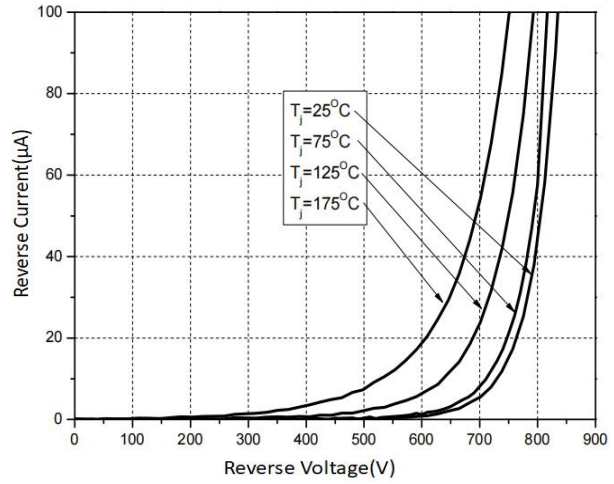


FIG.3: Capacitance Charge vs. Reverse Voltage

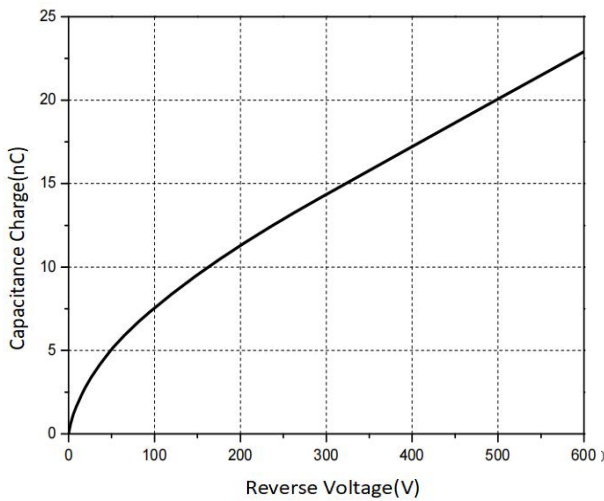


FIG.4: Capacitance Stored Energy

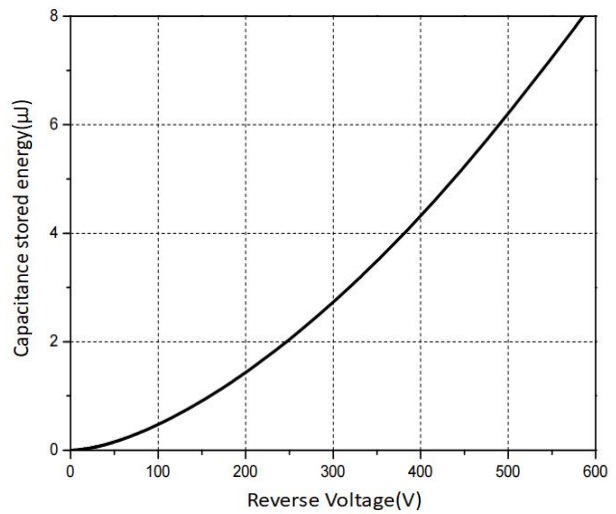


FIG.5: Power Derating

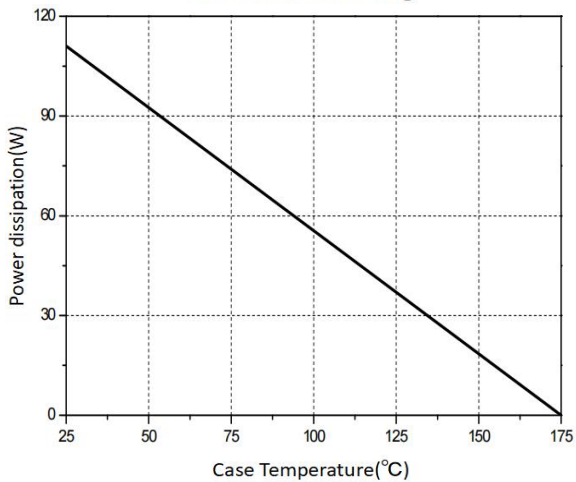
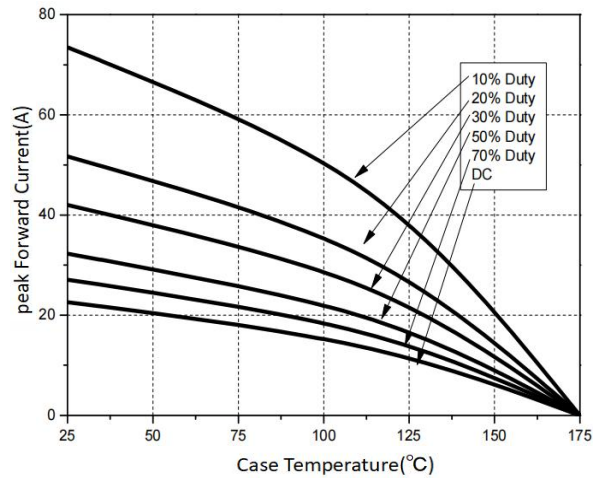
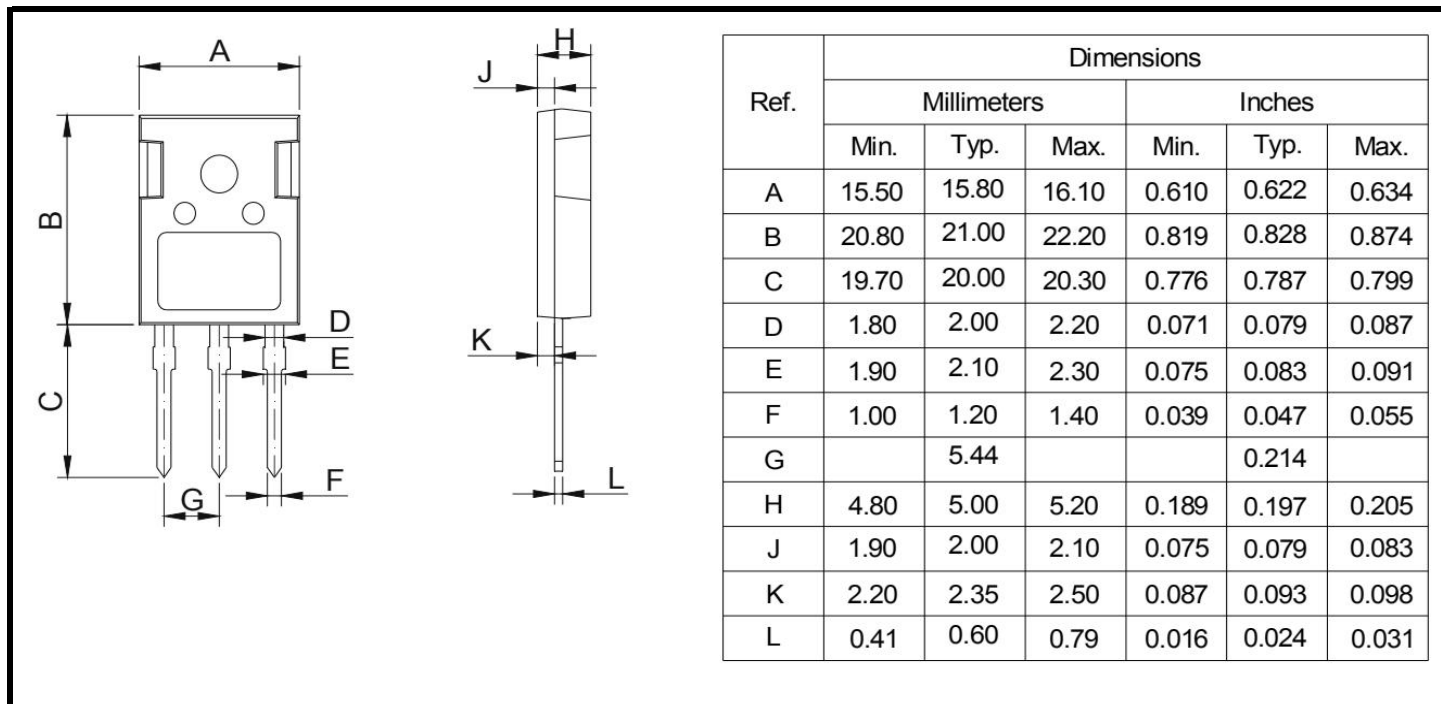


FIG.6: Current Derating



12A, 650V SIC Schottky Rectifier
PACKAGE OUTLINE DIMENSIONS

PACKING INFORMATION

Package	Tube(PCS)	Inner Box(PCS)	Carton(PCS)
TO-247	30	450	2,250