

40A, 650V SIC Schottky Rectifier

FEATURES

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

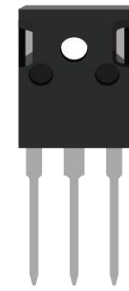
| Parameter | Symbol | Value | Unit |
|--|------------|-------------|------------------|
| Repetitive Peak Reverse Voltage | V_{RRM} | 650 | V |
| Cotinuous Forward Current($T_C=150^\circ\text{C}$) | I_F | 40 | A |
| Repetitive Peak Forward Surge Current Per Leg ($t_p=10\text{ms}, T_C=25^\circ\text{C}$) | I_{FRM} | 140 | A |
| Non-repetitive Peak Forward Surge Current Per Leg ($t_p=10\text{ms}, T_C=25^\circ\text{C}$) | I_{FSM} | 170 | A |
| Non-repetitive Peak Forward Surge Current Per Leg ($t_p=10\text{ms}, T_C=25^\circ\text{C}$) | I_{FMAX} | 1360 | A |
| Power Dissipation, Per Leg $T_C=25^\circ\text{C}$ $T_C=110^\circ\text{C}$ | P_{tot} | 71 30 | 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

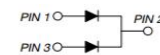
$T_J=25^\circ\text{C}$ unless otherwise noted

| Parameter | Test Conditions | Symbol | Value | | Unit |
|-----------------------------------|----------------------------------|-----------------|-------|------|---------------------------|
| | | | Typ. | Max. | |
| Forward Voltage@ $I_F=20\text{A}$ | $T_J=25^\circ\text{C}$ | V_F | 1.5 | 1.8 | V |
| | $T_J=175^\circ\text{C}$ | | 2.2 | 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 | 1090 | - | pF |
| | $V_R=200\text{V}, f=1\text{MHz}$ | | 110 | - | |
| | $V_R=400\text{V}, f=1\text{MHz}$ | | 77 | - | |
| Total Capacitance Charge | $V_R=400\text{V}$ | Q_C | 53 | - | nC |
| Capacitance Stored Energy | $V_R=400\text{V}$ | E_C | 9.0 | - | μJ |
| Thermal Resistance | Junction to case | $R_{\theta JC}$ | 0.8 | | $^\circ\text{C}/\text{W}$ |

TO-247



1 2 3



RoHS
COMPLIANT

HALOGEN
FREE

RATINGS AND CHARACTERISTIC CURVES

FIG.1: Forward Characteristics

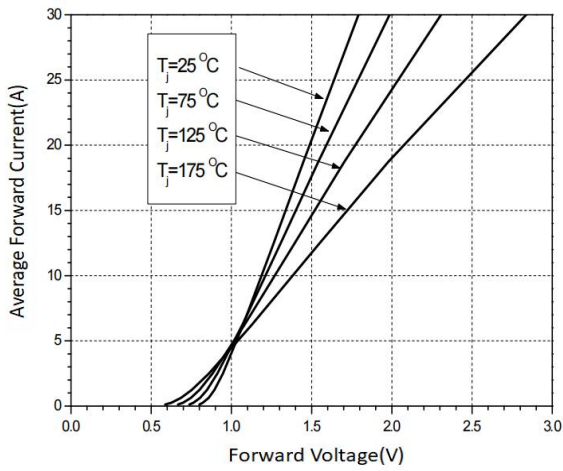


FIG.2: Reverse Characteristics

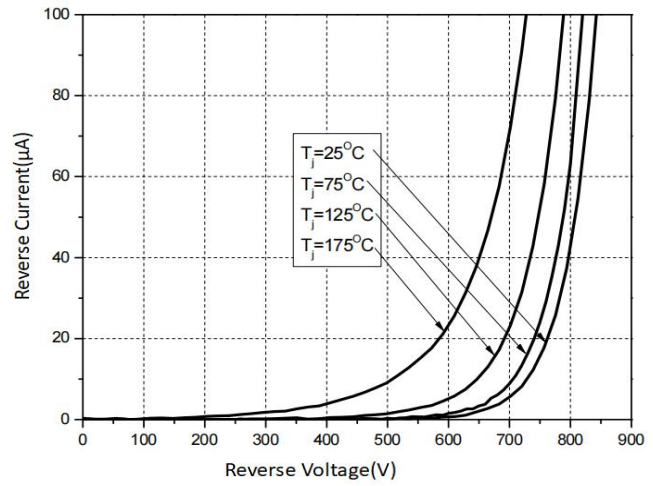


FIG.3: Capacitance Charge vs. Reverse Voltage

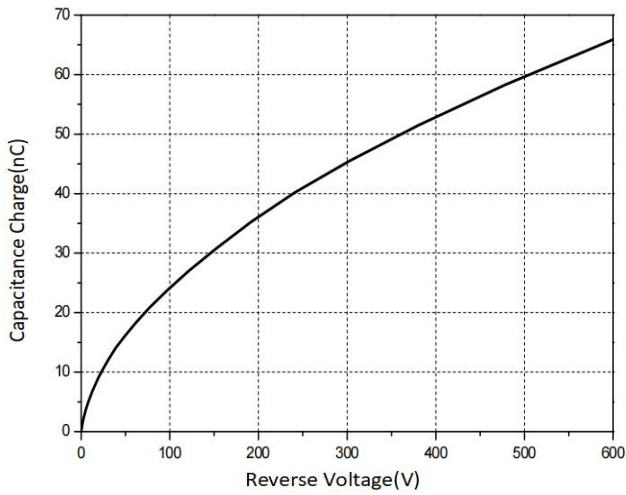


FIG.4: Capacitance Stored Energy

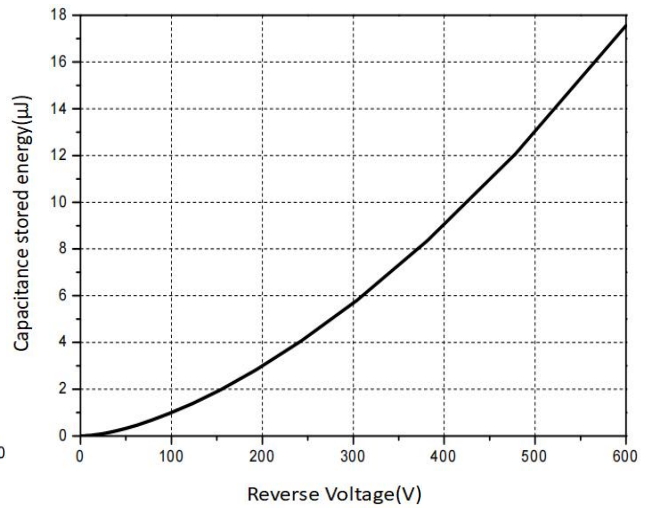


FIG.5: Power Derating

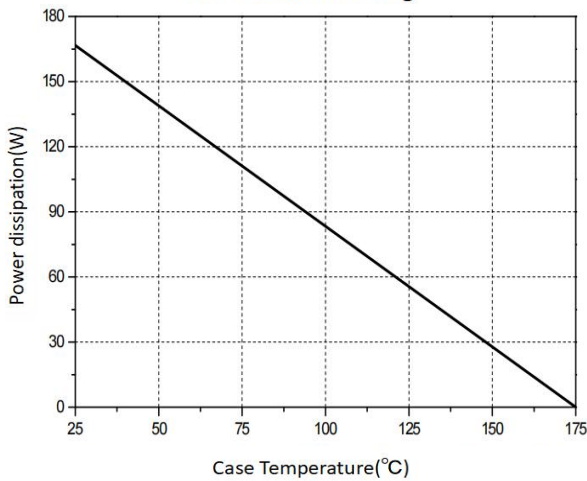
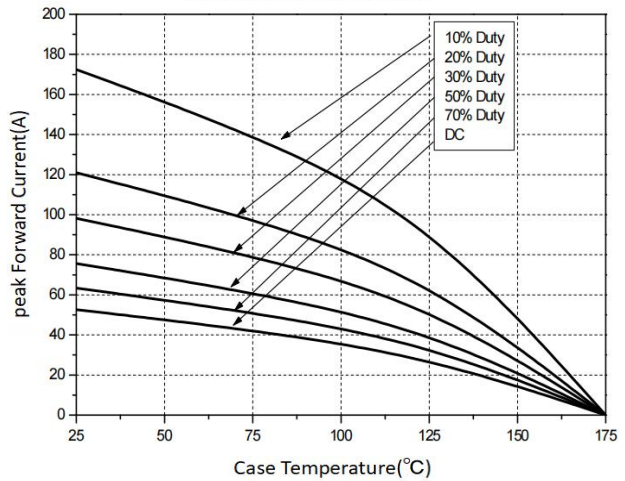
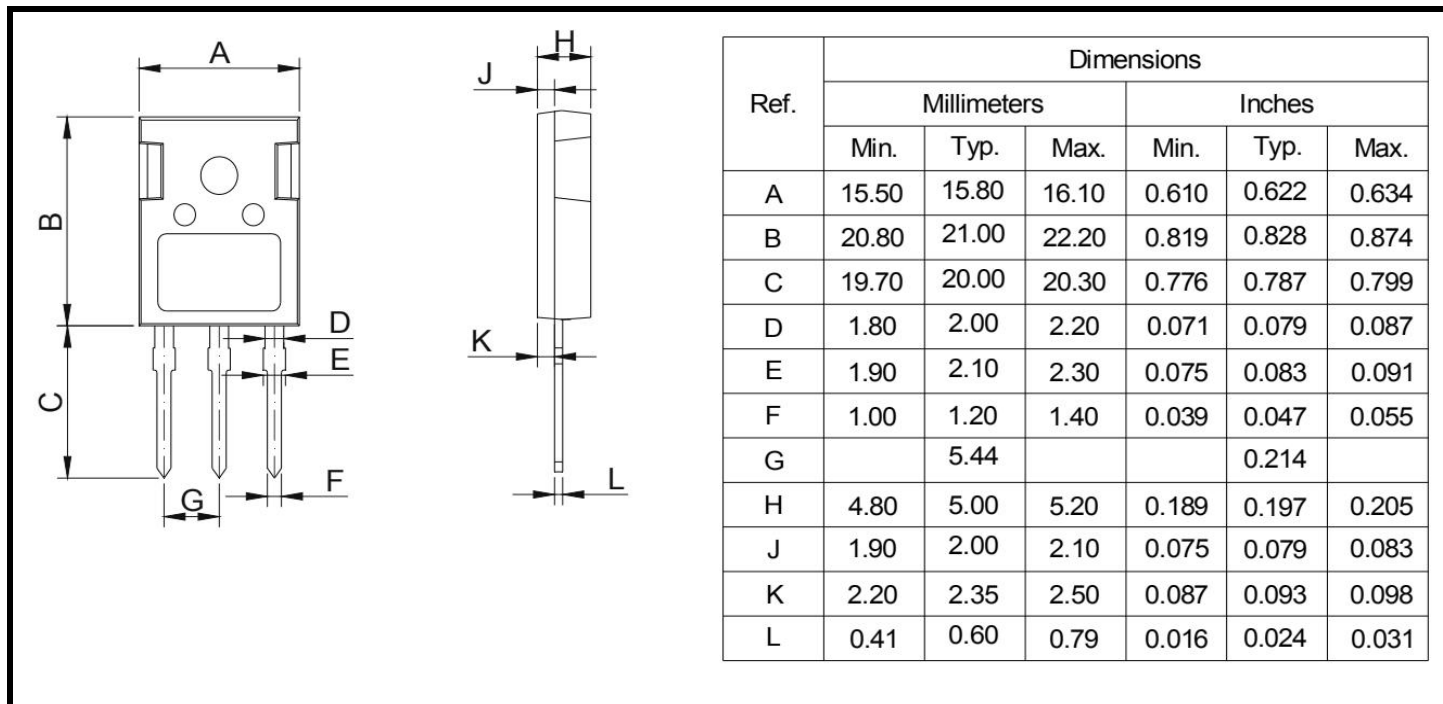


FIG.6: Current Derating



40A, 650V SIC Schottky Rectifier
PACKAGE OUTLINE DIMENSIONS

PACKING INFORMATION

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