

SiC Schottky Barrier Rectifier

Reverse Voltage - 650 V

Forward Current - 10 A

Features

- ◆ Reverse withstand voltage 650V
- ◆ Zero reverse recovery current
- ◆ High working frequency
- ◆ Switch characteristics are not affected by temperature
- ◆ Fast switching speed
- ◆ Positive temperature coefficient of positive pressure drop

Advantages

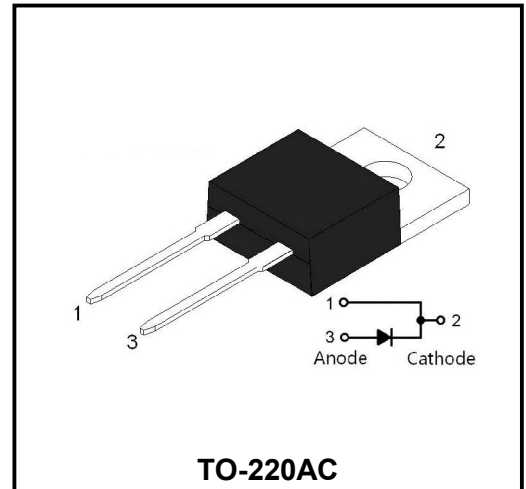
- ◆ Very low switching loss
- ◆ Higher efficiency
- ◆ Low dependence of the system on the heat sink
- ◆ No thermal collapse in parallel devices

Application

- ◆ Switching mode power supply, AC/DC converter
- ◆ Power factor correction
- ◆ Motor drive
- ◆ PV inverter and wind turbine

Absolute Maximum Rating (Ta=25°C)

| Parameter | Symbol | Test conditions | Value | Unit |
|----------------------------------|------------------|-------------------------------------------------------------------------------------------------|----------------|------|
| Peak repetitive reverse voltage | V_{RRM} | | 650 | V |
| Working Peak Reverse voltage | V_{RWM} | | 650 | V |
| DC Blocking Voltage | V_{DC} | | 650 | V |
| Average rectified output current | $I_{F(AV)}$ | Ta=25°C Ta=125°C Ta=150°C | 33 15 10 | A |
| Forward repetitive peak current | I_{FRM} | T _C =25°C, tp=10ms, Half Sine Wave T _C =110°C, tp=10ms, Half Sine Wave | 50 28 | A |
| Forward surge current | I_{FSM} | T _C =25°C, tp=10ms, Half Sine Wave T _C =110°C, tp=10ms, Half Sine Wave | 90 65 | A |
| Power dissipation | P_{tot} | Ta=25°C Ta=110°C | 98 45 | W |
| Junction temperature | T _j | | -55 ~ +175 | °C |
| Storage temperature | T _{stg} | | -55 ~ +175 | °C |



Thermal characteristics

| Parameter | Symbol | Vaule | Unit |
|---------------------------------------|-----------------|-------|---------------|
| Thermal Resistance - Junction to Case | $R_{\theta JC}$ | 2.03 | $^{\circ}C/W$ |

Electrical Characteristics (Ta=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|-------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------|-----|-----------------|------------|---------|
| Forward voltage | V_F | $I_F = 10 A, T_j = 25^{\circ}C$ $I_F = 10 A, T_j = 175^{\circ}C$ | | 1.45 1.61 | 1.6 1.8 | V |
| Reverse current | I_R | $V_R = 650V, T_j = 25^{\circ}C$ $V_R = 650V, T_j = 175^{\circ}C$ | | 1 12 | 60 220 | μA |
| Total capacitive charge | Q_C | $V_R = 400V, I_F = 10A$ $di/dt = 500A/\mu s, T_j = 25^{\circ}C$ | | 39 | | nC |
| Total capacitance | C | $V_R = 0V, T_j = 25^{\circ}C, f = 1MHz$ $V_R = 200V, T_j = 25^{\circ}C, f = 1MHz$ $V_R = 400V, T_j = 25^{\circ}C, f = 1MHz$ | | 762 75 54 | | pF |

Typical Characteristics

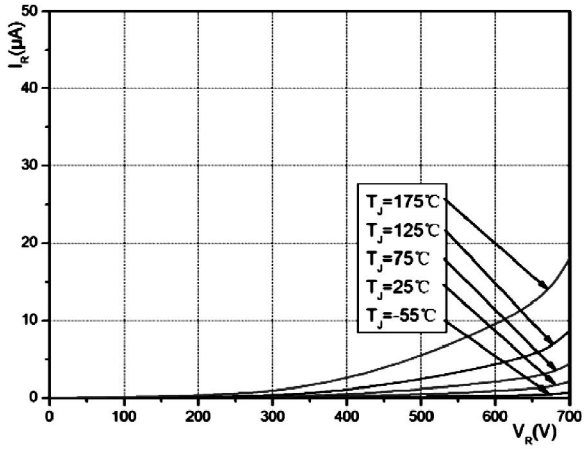


Figure 1. Forward Characteristics

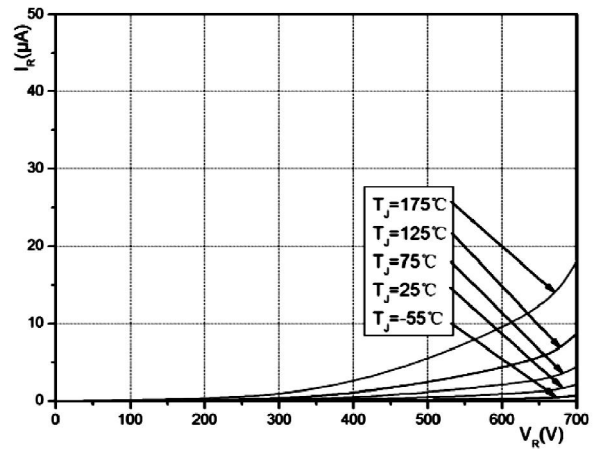


Figure 2. Reverse Characteristics

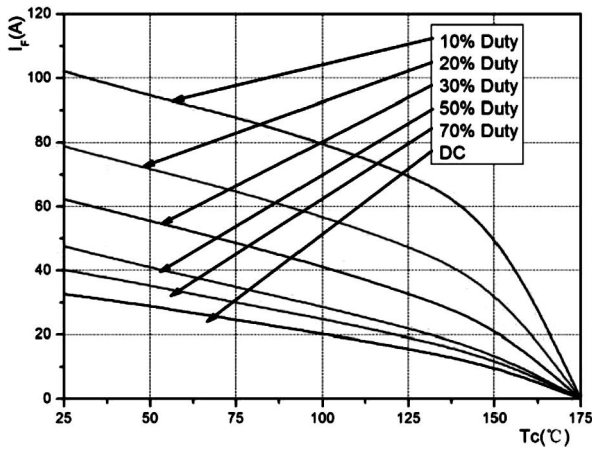


Figure 3. Load current

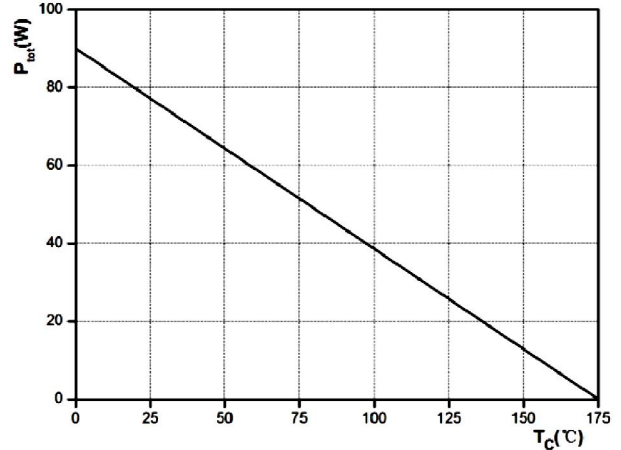


Figure 4. Dissipated power curve

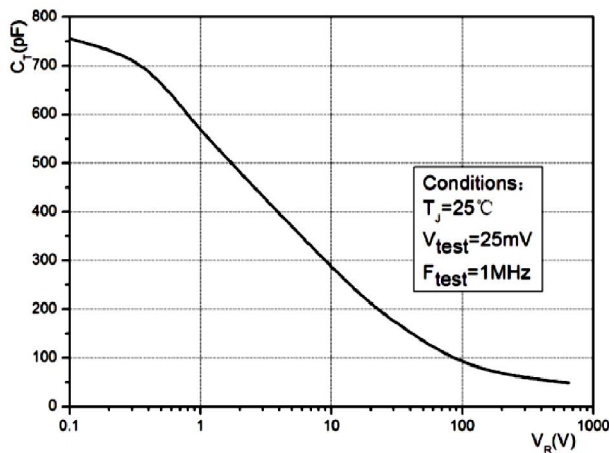


Figure 5. Capacitance vs reverse voltage

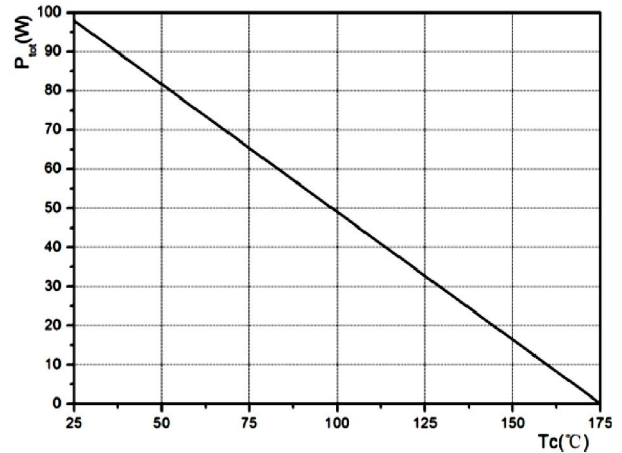


Figure 6. Thermal Impedance Junction-to-Case

Package Dimensions

TO-220AC

| Symbol | Dimensions in mm | | Dimensions in Inch | |
|--------|------------------|-------|--------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 4.34 | 4.67 | 0.171 | 0.184 |
| A1 | 2.52 | 2.82 | 0.099 | 0.111 |
| b | 0.71 | 0.91 | 0.028 | 0.036 |
| b1 | 1.17 | 1.37 | 0.046 | 0.054 |
| c | 0.30 | 0.50 | 0.012 | 0.020 |
| c1 | 1.17 | 1.37 | 0.046 | 0.054 |
| D | 9.90 | 10.20 | 0.390 | 0.402 |
| E | 8.50 | 8.90 | 0.335 | 0.350 |
| E1 | 12.00 | 12.50 | 0.472 | 0.492 |
| e | 2.44 | 2.64 | 0.096 | 0.104 |
| e1 | 4.88 | 5.28 | 0.192 | 0.208 |
| F | 2.60 | 2.80 | 0.102 | 0.110 |
| L | 13.20 | 13.80 | 0.520 | 0.543 |
| L1 | 3.80 | 4.20 | 0.150 | 0.165 |
| Φ | 3.60 | 3.96 | 0.142 | 0.156 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Schottky Diodes & Rectifiers](#) category:

Click to view products by [YFW Electronics](#) manufacturer:

Other Similar products are found below :

[MA4E2039](#) [MMBD301M3T5G](#) [HFA35HB60C](#) [RB160M-50TR](#) [D83C](#) [BAS16E6433HTMA1](#) [BAS 3010S-02LRH](#) [E6327](#) [BAT 54-02LRH](#)
[E6327](#) [NRVBAF360T3G](#) [NSR05F40QNXT5G](#) [NTE555](#) [JANS1N6640](#) [SS3003CH-TL-E](#) [GA01SHT18](#) [CRS10I30A\(TE85L,QM](#)
[MBRA140TRPBF](#) [MBRB30H30CT-1G](#) [BAT 15-04R](#) [E6152](#) [JANTX1N5712-1](#) [DMJ3940-000](#) [SB007-03C-TB-E](#) [NRVBB20100CTT4G](#)
[NRVBM120LT1G](#) [NTSB30U100CT-1G](#) [CRG04\(T5L,TEMQ\)](#) [ACDBA1100LR-HF](#) [ACDBA1200-HF](#) [ACDBA240-HF](#) [ACDBA3100-HF](#)
[CDBQC0530L-HF](#) [ACDBA260LR-HF](#) [ACDBA1100-HF](#) [10BQ015-M3/5BT](#) [NRVBM120ET1G](#) [VSSB410S-M3/5BT](#) [1N5819T-G](#)
[PDS1040Q-13](#) [B160BQ-13-F](#) [SDM05U20CSP-7](#) [BAS 70-07](#) [E6433](#) [B140S1F-7](#) [HSM560Je3/TR13](#) [DDB2265-000](#) [ZHCS506QTA](#)
[HSM190Je3/TR13](#) [B330AF-13](#) [ACDBUC0230-HF](#) [SDM1U100S1F-7](#) [MBR10200CTF-G1](#) [CDLL5712](#)