

80CPQ020-G SCHOTTKY RECTIFIER

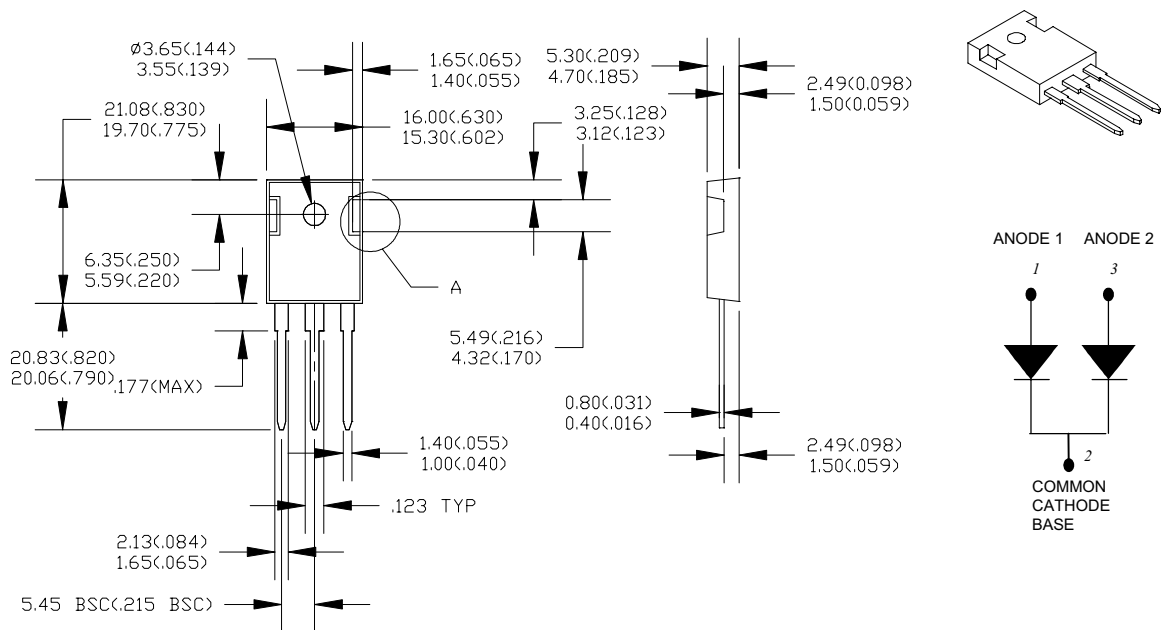
Applications:

- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

Features:

- 150 °C T_J operation
- Center tap TO-247AD package
- Very low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Green Products in Compliance with the RoHS Directive

Mechanical Dimensions: In Inches / mm



| | | |
|--|--|--|
| | <p>OPTION C</p> <p>5.49(.216) 4.32(.170)</p> | <p>Option C is also available. To order specifically the option C, please add suffix “-C” to the part number: To order specifically the standard option, please add suffix “-S” to the part number. If there is no suffix to the part number, the part could come with either option.</p> |
|--|--|--|

TO-247AD

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|--|-------------|--|----------------|-------|
| Max. DC Reverse Voltage | V_R | - | 20 | V |
| Max. Average Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 138^\circ\text{C}$, rectangular wave form | 40(Per Leg) | A |
| | | | 80(Per Device) | |
| Max. Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | 8.3 ms, half Sine pulse | 600 | A |
| Non-Repetitive Avalanche Energy (per leg) | E_{AS} | $T_J = 25^\circ\text{C}$, $I_{AS} = 6\text{ A}$, $L = 1.5\text{ mH}$ | 27 | mJ |
| Repetitive Avalanche Current (per leg) | I_{AR} | I_{AS} decay linearly to 0 in 1 μs f limited by T_J max. $V_A = 1.5 V_R$ | 6 | A |

Electrical Characteristics:

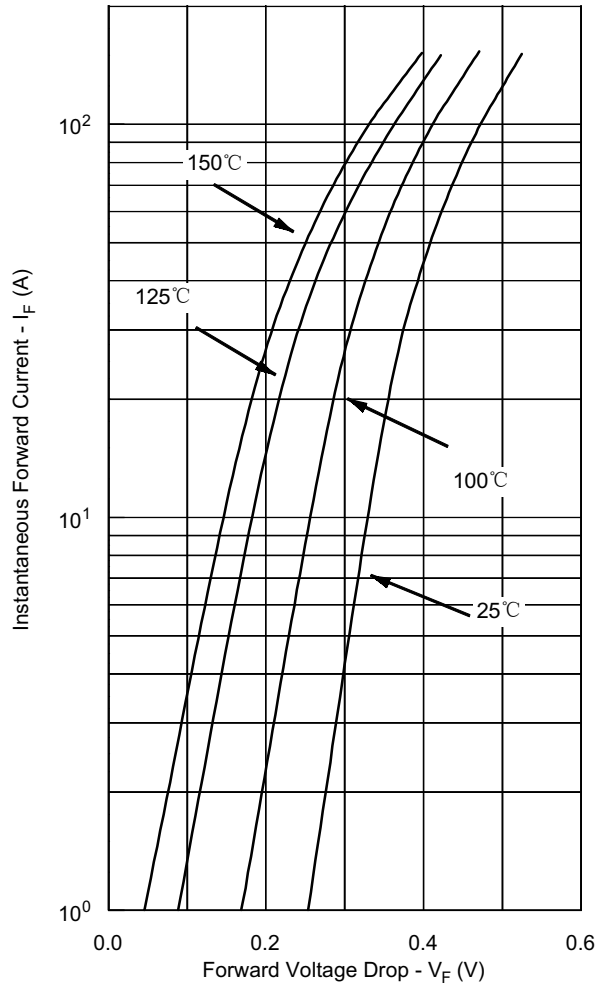
| Characteristics | Symbol | Condition | Max. | Units |
|---------------------------------------|----------|--|---|------------------|
| Max. Forward Voltage Drop (per leg) * | V_{F1} | @ 40 A, Pulse, $T_J = 25^\circ\text{C}$ | 0.46 | V |
| | | @ 80 A, Pulse, $T_J = 25^\circ\text{C}$ | 0.55 | |
| | V_{F2} | @ 40 A, Pulse, $T_J = 125^\circ\text{C}$ | 0.36 | V |
| | | @ 80 A, Pulse, $T_J = 125^\circ\text{C}$ | 0.46 | |
| | V_{F3} | @ 40 A, Pulse, $T_J = 150^\circ\text{C}$ | 0.32 | V |
| | | @ 80 A, Pulse, $T_J = 150^\circ\text{C}$ | 0.43 | |
| Max. Reverse Current (per leg) * | I_{R1} | @ $V_R = \text{rated } V_R$, Pulse, $T_J = 25^\circ\text{C}$ | 5.5 | mA |
| | | I_{R2} | @ $V_R = \text{rated } V_R$, Pulse, $T_J = 125^\circ\text{C}$ | |
| | I_{R3} | @ $V_R = 5\text{ V}$, Pulse, $T_J = 125^\circ\text{C}$ | 110 | mA |
| | I_{R4} | @ $V_R = 10\text{ V}$, Pulse, $T_J = 150^\circ\text{C}$ | 600 | mA |
| Max. Junction Capacitance (per leg) | C_T | @ $V_R = 5\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$, $V_{SIG} = 50\text{ mV (p-p)}$ | 6500 | pF |
| Typical Series Inductance (per leg) | L_S | Measured lead to lead 5 mm from package body | 7.5 | nH |
| Max. Voltage Rate of Change | dv/dt | - | 10,000 | V/ μs |

* Pulse Width < 300 μs , Duty Cycle < 2%

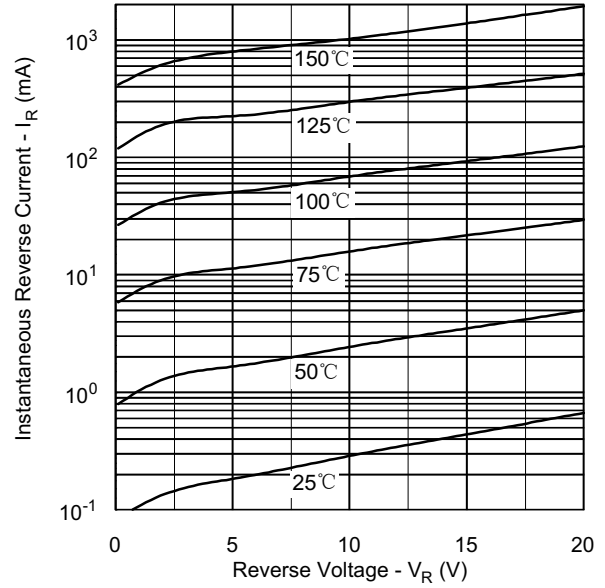
Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|-----------------|--------------------------------------|--------------------|--------------------|
| Max. Junction Temperature | T_J | - | -55 to +150 | $^\circ\text{C}$ |
| Max. Storage Temperature | T_{stg} | - | -55 to +150 | $^\circ\text{C}$ |
| Maximum Thermal Resistance Junction to Case (per leg) | $R_{\theta JC}$ | DC operation | 0.6 | $^\circ\text{C/W}$ |
| Maximum Thermal Resistance Junction to Case (per package) | $R_{\theta JC}$ | DC operation | 0.3 | $^\circ\text{C/W}$ |
| Maximum Thermal Resistance, Case to Heat Sink | $R_{\theta CS}$ | Mounting surface, smooth and greased | 0.25 | $^\circ\text{C/W}$ |
| Approximate Weight | wt | - | 6 | g |
| Mounting Torque | T_M | - | 6(min) 12 (max) | Kg-cm |
| Case Style | TO-247AD | | | |

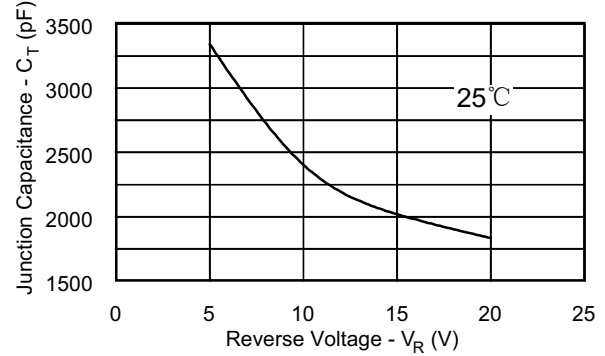
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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