

Technical Data
Data Sheet 3196, Rev. A

400CNQ035/400CNQ040/400CNQ045
SCHOTTKY RECTIFIER

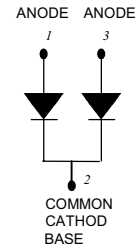
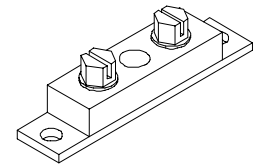
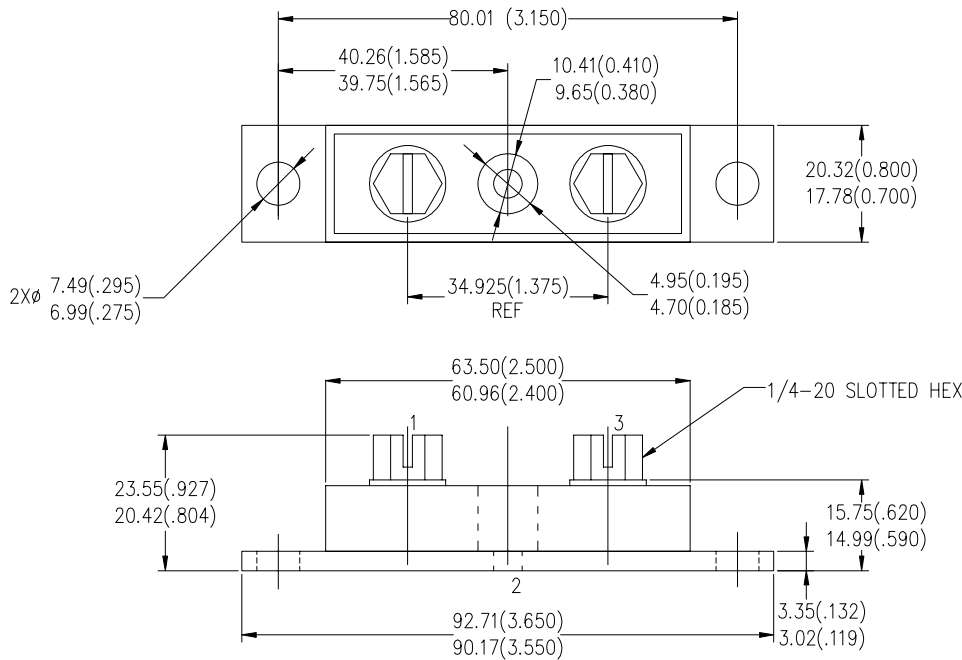
Applications:

- High current switching power supply • Plating power supply • Free-Wheeling diodes
- Reverse battery protection • Converters • UPS System • Welding

Features:

- 150 °C T_J operation
- Center tap module
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Mechanical Dimensions: In Inches / mm



PRM4(Non-Isolated)

Data Sheet 3196, Rev. A
Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units | |
|--|-------------|---|---|------------|---|
| Peak Inverse Voltage | V_{RWM} | - | 35(400CNQ035) 40(400CNQ040) 45(400CNQ045) | V | |
| Max. Average Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 104^\circ\text{C}$, rectangular wave form | 200 | per leg | A |
| | | | 400 | per device | |
| Max. Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | 8.3 ms, half Sine pulse | 4080 | A | |
| Non-Repetitive Avalanche Energy (per leg) | E_{AS} | $T_J = 25^\circ\text{C}$, $I_{AS} = 40\text{ A}$, $L = 0.22\text{ mH}$ | 180 | mJ | |
| Repetitive Avalanche Current (per leg) | I_{AR} | Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 1.5 \times V_R$ typical | 40 | A | |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Max. | Units |
|---------------------------------------|-----------|---|--------|------------------|
| Max. Forward Voltage Drop (per leg) * | V_{F1} | @ 200 A, Pulse, $T_J = 25^\circ\text{C}$ | 0.60 | V |
| | | @ 400 A, Pulse, $T_J = 25^\circ\text{C}$ | 0.73 | |
| | V_{F2} | @ 200 A, Pulse, $T_J = 125^\circ\text{C}$ | 0.52 | V |
| | | @ 400 A, Pulse, $T_J = 125^\circ\text{C}$ | 0.68 | |
| Max. Reverse Current (per leg) * | I_{R1} | @ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$ | 20 | mA |
| | | @ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$ | 800 | |
| Max. Junction Capacitance (per leg) | C_T | @ $V_R = 5\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$ | 10300 | pF |
| Typical Series Inductance (per leg) | L_S | Measured lead to lead 5 mm from package body | 5.0 | nH |
| Max. Voltage Rate of Change | dv/dt | - | 10,000 | V/ μs |
| Insulation Voltage | V_{RMS} | | 1000 | V |

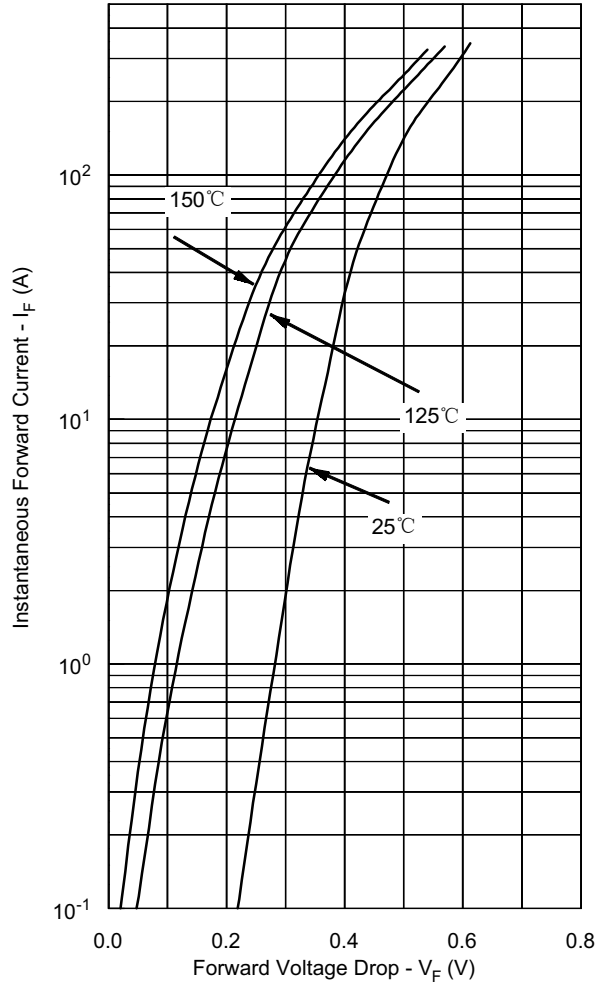
* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

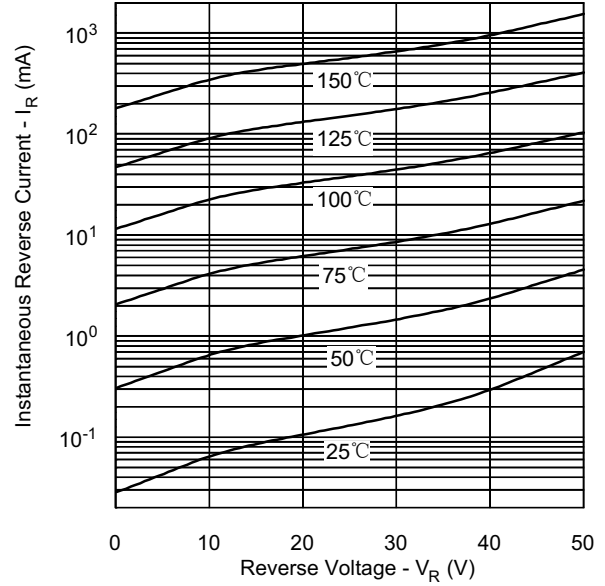
| Characteristics | Symbol | Condition | Specification | Units | |
|---|-------------------|---|----------------------|----------------------|-------|
| Max. Junction Temperature | T_J | - | -55 to +150 | $^\circ\text{C}$ | |
| Max. Storage Temperature | T_{stg} | - | -55 to +150 | $^\circ\text{C}$ | |
| Maximum Thermal Resistance Junction to Case (per leg) | $R_{\theta JC}$ | DC operation | 0.20 | $^\circ\text{C/W}$ | |
| Maximum Thermal Resistance Junction to Case (per package) | $R_{\theta JC}$ | DC operation | 0.10 | $^\circ\text{C/W}$ | |
| Maximum Thermal Resistance, Case to Heat Sink | $R_{\theta CS}$ | Mounting surface, smooth and greased | 0.10 | $^\circ\text{C/W}$ | |
| Approximate Weight | wt | - | 79 | g | |
| Mounting Torque | T_M | - | Mounting Torque Base | 24 (min) 35 (max) | Kg-cm |
| | | | Terminal Torque | 35 (min) 46 (max) | |
| Case Style | PRM4 Non-Isolated | | | | |

Data Sheet 3196, Rev. A

Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

