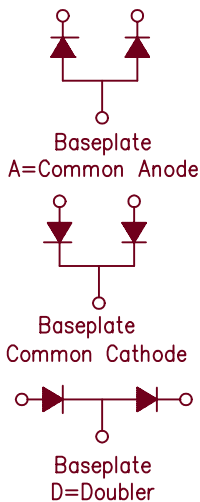
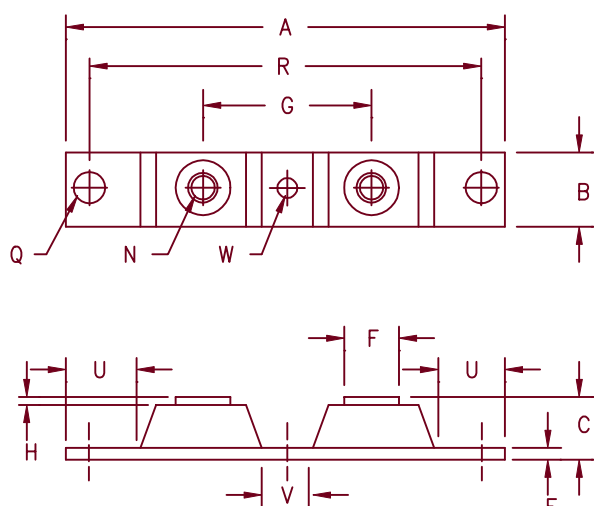


# Schottky PowerMod

## CPT50080 — CPT500100



Notes:  
Baseplate: Nickel plated copper

| Dim. | Inches |       | Millimeters |       | Notes  |
|------|--------|-------|-------------|-------|--------|
|      | Min.   | Max.  | Min.        | Max.  |        |
| A    | ---    | 3.630 | ---         | 92.20 |        |
| B    | 0.700  | 0.800 | 17.78       | 20.32 |        |
| C    | ---    | .680  | ---         | 17.28 |        |
| E    | 0.120  | 0.130 | 3.05        | 3.30  |        |
| F    | 0.490  | 0.510 | 12.45       | 12.95 |        |
| G    | 1.375  | BSC   | 34.92       | BSC   |        |
| H    | 0.050  | ---   | 1.25        | ---   |        |
| N    | ---    | ---   | ---         | ---   | 1/4-20 |
| Q    | 0.275  | 0.290 | 6.99        | 7.37  | Dia.   |
| R    | 3.150  | BSC   | 80.01       | BSC   |        |
| U    | 0.600  | ---   | 15.24       | ---   |        |
| V    | 0.312  | 0.340 | 7.92        | 8.64  |        |
| W    | 0.180  | 0.195 | 4.57        | 4.95  | Dia.   |

| Microsemi Catalog Number | Industry Part Number | Working Peak Reverse Voltage | Repetitive Peak Reverse Voltage |
|--------------------------|----------------------|------------------------------|---------------------------------|
| CPT50080*                | MBR50080CT           | 80V                          | 80V                             |
| CPT50090*                |                      | 90V                          | 90V                             |
| CPT500100*               | MBR500100CT          | 100V                         | 100V                            |

\*Add Suffix A for Common Anode, D for Doubler

- Schottky Barrier Rectifier
- Guard ring protection
- 500 Amperes/ 80 to 100 Volts
- 175°C junction temperature
- Reverse energy tested

### Electrical Characteristics

|  |                      |   |
|--|----------------------|---|
| Average forward current per pkg            | $I_{F(AV)}$ 500 Amps | $T_C = 120^\circ\text{C}$ , Square wave, $R_{\theta JC} = 0.12^\circ\text{C/W}$ |
| Average forward current per leg            | $I_{F(AV)}$ 250 Amps | $T_C = 120^\circ\text{C}$ , Square wave, $R_{\theta JC} = 0.24^\circ\text{C/W}$ |
| Maximum surge current per leg              | $I_{FSM}$ 5000 Amps  | 8.3ms, half sine, $T_J = 175^\circ\text{C}$                                     |
| Maximum repetitive reverse current per leg | $I_{R(OV)}$ 2 Amps   | $f = 1 \text{ KHZ}$ , $25^\circ\text{C}$ , $1 \mu\text{sec}$ square wave        |
| Max peak forward voltage per leg           | $V_{FM}$ 0.90 Volts  | $I_{FM} = 250\text{A}$ ; $T_J = 25^\circ\text{C}$                               |
| Max peak forward voltage per leg           | $V_{FM}$ 0.72 Volts  | $I_{FM} = 250\text{A}$ ; $T_J = 175^\circ\text{C}$                              |
| Max peak reverse current per leg           | $I_{RM}$ 200 mA      | $V_{RRM}$ , $T_J = 125^\circ\text{C}$ *   |
| Max peak reverse current per leg           | $I_{RM}$ 8.0 mA      | $V_{RRM}$ , $T_J = 25^\circ\text{C}$  |
| Typical junction capacitance per leg       | $C_J$ 6400 pF        | $V_R = 5.0\text{V}$ , $T_C = 25^\circ\text{C}$                                  |

\*Pulse test: Pulse width 300  $\mu\text{sec}$ , Duty cycle 2%

### Thermal and Mechanical Characteristics

|                                      |                 |  |
|--------------------------------------|-----------------|--|
| Storage temp range                   | $T_{STG}$       | $-55^\circ\text{C}$ to $175^\circ\text{C}$ |
| Operating junction temp range        | $T_J$           | $-55^\circ\text{C}$ to $175^\circ\text{C}$ |
| Max thermal resistance per leg       | $R_{\theta JC}$ | $0.24^\circ\text{C/W}$ Junction to case    |
| Max thermal resistance per pkg       | $R_{\theta JC}$ | $0.12^\circ\text{C/W}$ Junction to case    |
| Typical thermal resistance (greased) | $R_{\theta CS}$ | $0.08^\circ\text{C/W}$ Case to sink        |
| Terminal Torque                      |                 | 35-50 inch pounds                          |
| Mounting Base Torque (outside holes) |                 | 30-40 inch pounds                          |
| Mounting Base Torque (center hole)   |                 | 8-10 inch pounds                           |
| center hole must be torqued first    |                 |  |
| Weight                               |                 | 2.8 ounces (78 grams) typical              |



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# CPT50080 — CPT500100

Figure 1  
Typical Forward Characteristics — Per Leg

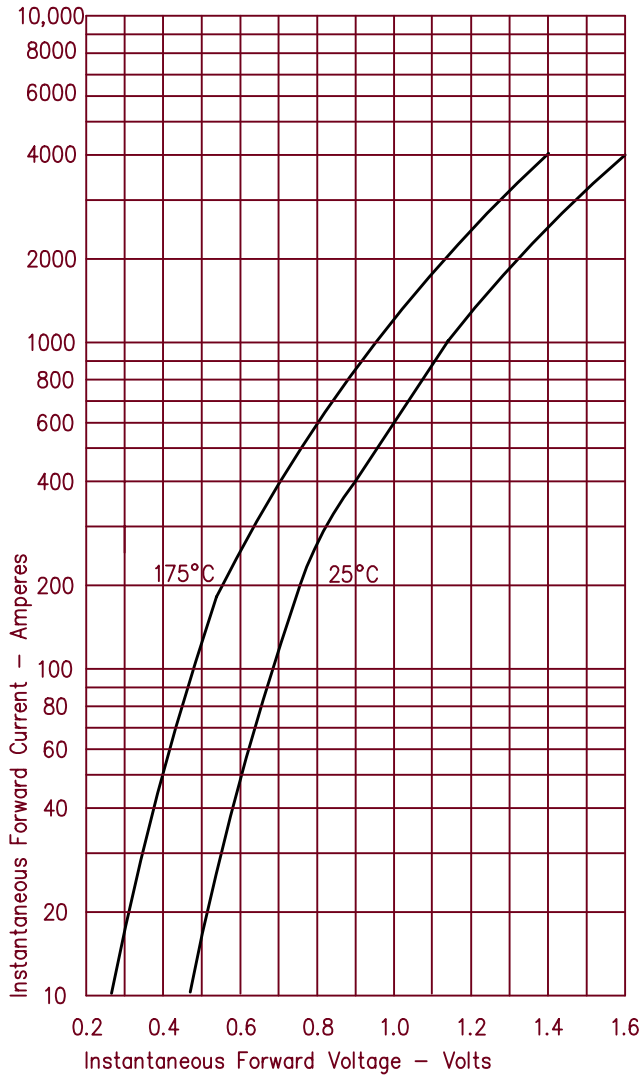


Figure 3  
Typical Junction Capacitance — Per Leg

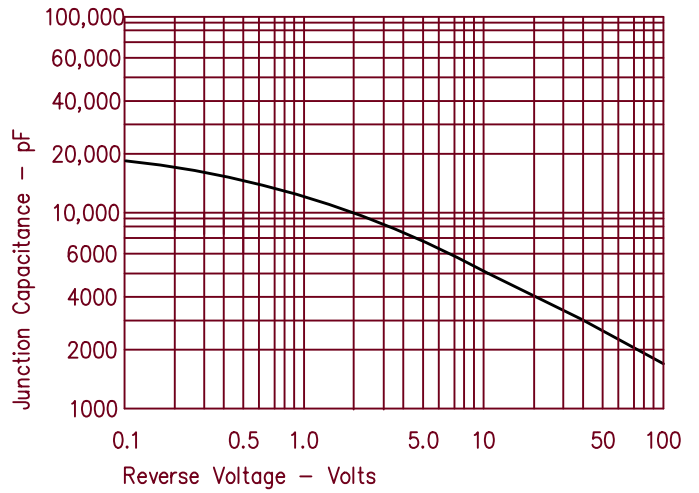


Figure 4  
Forward Current Derating — Per Leg

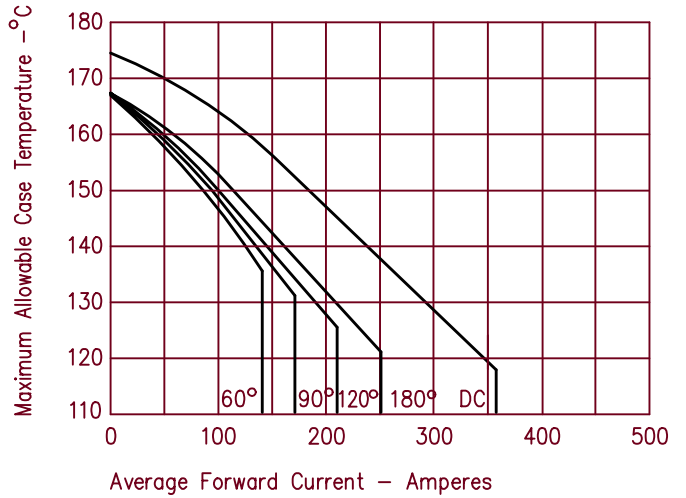


Figure 2  
Typical Reverse Characteristics — Per Leg

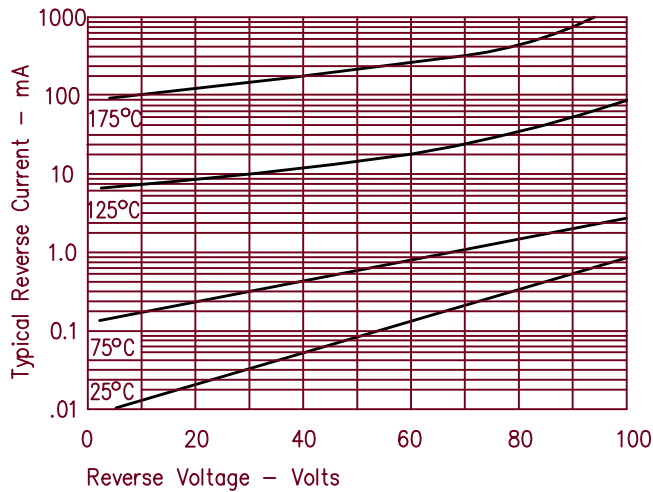


Figure 5  
Maximum Forward Power Dissipation — Per Leg

