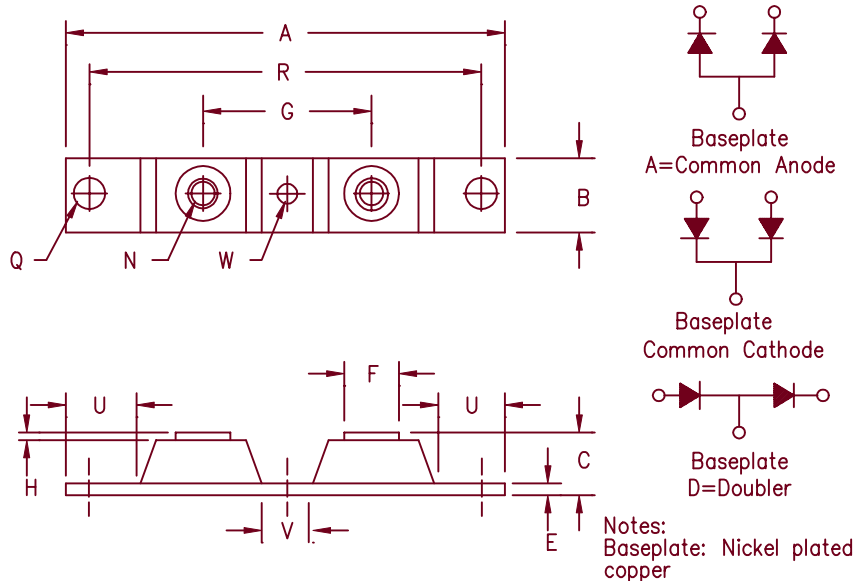


# Schottky PowerMod

## CPT20130 — CPT20145



| Dim. | Inches    |       | Millimeters |       | Notes  |
|------|-----------|-------|-------------|-------|--------|
|      | Min.      | Max.  | Min.        | Max.  |        |
| A    | ---       | 3.630 | ---         | 92.20 |        |
| B    | 0.700     | 0.800 | 17.78       | 20.32 |        |
| C    | ---       | 0.630 | ---         | 16.00 |        |
| 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    | 0.010     | ---   | 0.25        | ---   |        |
| N    | ---       | ---   | ---         | ---   | 1/4-28 |
| 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 |
|--------------------------|--------------------------------------|------------------------------|---------------------------------|
| CPT20130*                | MBR20030CT                           | 30V                          | 30V                             |
| CPT20135*                | 200CNQ035<br>224CNQ035<br>MBR20035CT | 35V                          | 35V                             |
| CPT20140*                | 200CNQ040<br>224CNQ040<br>MBR20040CT | 40V                          | 40V                             |
| CPT20145*                | 200CNQ045<br>224CNQ045<br>MBR20045CT | 45V                          | 45V                             |

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

- Schottky Barrier Rectifier
- Guard Ring Protection
- 200 Amperes/30 to 45 Volts
- 150°C Junction Temperature
- Reverse Energy Tested

| Electrical Characteristics                 |                      |   |
|--|----------------------|---|
| Average forward current per pkg            | $I_{F(AV)}$ 200 Amps | $T_C = 99^\circ\text{C}$ , Square wave, $R_{\theta JC} = .20^\circ\text{C/W}$ |
| Average forward current per leg            | $I_{F(AV)}$ 100 Amps | $T_C = 99^\circ\text{C}$ , Square wave, $R_{\theta JC} = .40^\circ\text{C/W}$ |
| Maximum surge current per leg              | $I_{FSM}$ 2000 Amps  | 8.3ms, half sine, $T_J = 125^\circ\text{C}$                                   |
| Maximum repetitive reverse current per leg | $I_{R(OV)}$ 2 Amps   | $f = 1 \text{ KHZ}$ , $25^\circ\text{C}$                                      |
| Max peak forward voltage per leg           | $V_{FM}$ 0.68 Volts  | $I_{FM} = 200\text{A}$ : $T_J = 25^\circ\text{C}$ *                           |
| Max peak forward voltage per leg           | $V_{FM}$ 0.64 Volts  | $I_{FM} = 200\text{A}$ : $T_J = 125^\circ\text{C}$ *                          |
| Max peak reverse current per leg           | $I_{RM}$ 1100mA      | $V_{RRM}$ , $T_J = 125^\circ\text{C}$ *                                       |
| Max peak reverse current per leg           | $I_{RM}$ 4.0mA       | $V_{RRM}$ , $T_J = 25^\circ\text{C}$  |
| Typical junction capacitance               | $C_J$ 5500pF         | $V_R = 5.0\text{V}$ , $T_C = 25^\circ\text{C}$                                |

\*Pulse test: Pulse width 300 usec, Duty cycle 2%

| Thermal and Mechanical Characteristics |                 |  |
|--|-----------------|--|
| Storage temp range                     | $T_{STG}$       | $-55^\circ\text{C}$ to $150^\circ\text{C}$ |
| Operating junction temp range          | $T_J$           | $-55^\circ\text{C}$ to $150^\circ\text{C}$ |
| Max thermal resistance per leg         | $R_{\theta JC}$ | $0.40^\circ\text{C/W}$ 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 (75 grams) typical              |

# CPT20130 – CPT20145

Figure 1  
Maximum Forward Characteristics – Per Leg

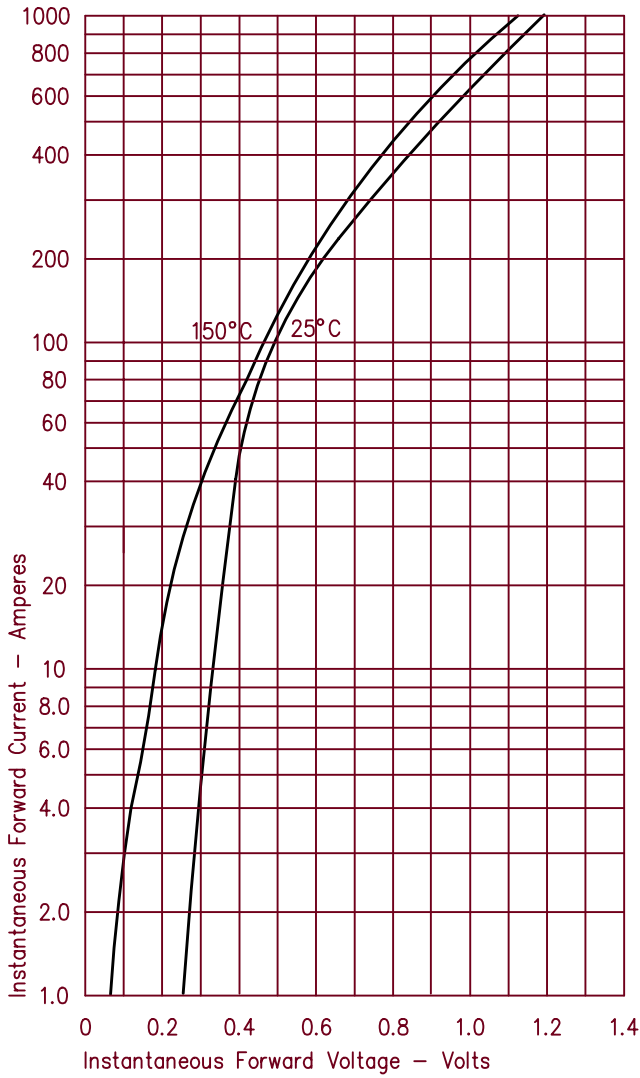


Figure 3  
Typical Junction Capacitance – Per Leg

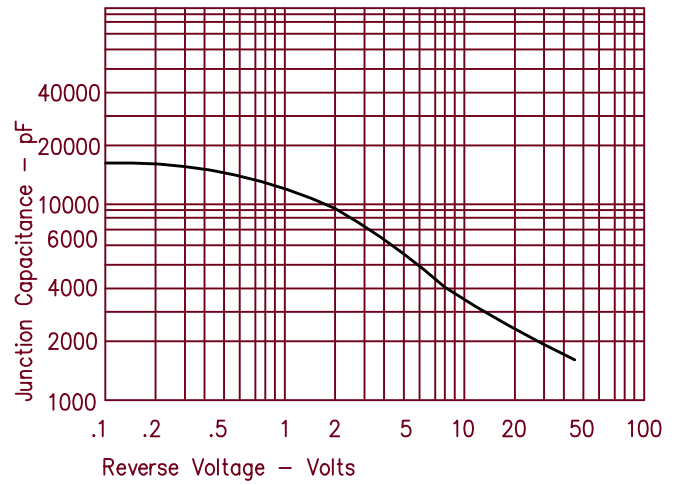


Figure 4  
Forward Current Derating – Per Leg

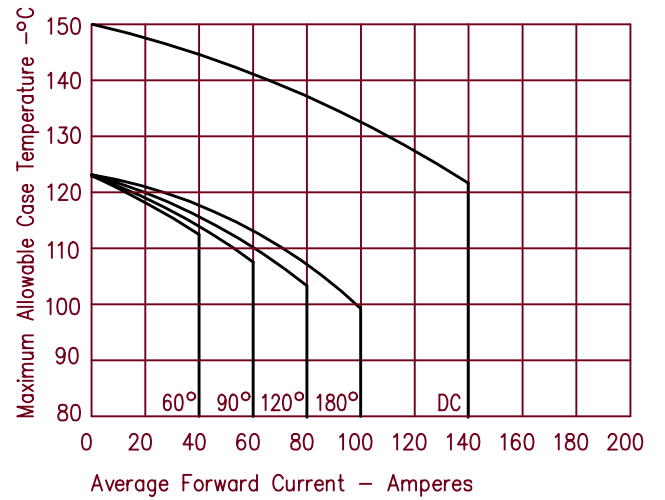


Figure 2  
Typical Reverse Characteristics – Per Leg

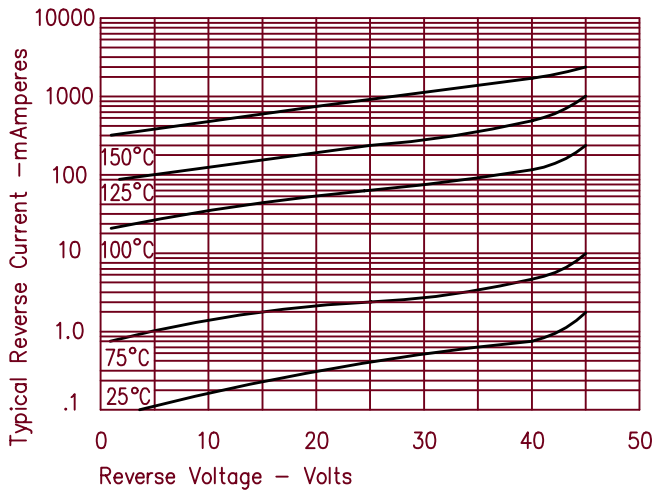


Figure 5  
Maximum Forward Power Dissipation – Per Leg

