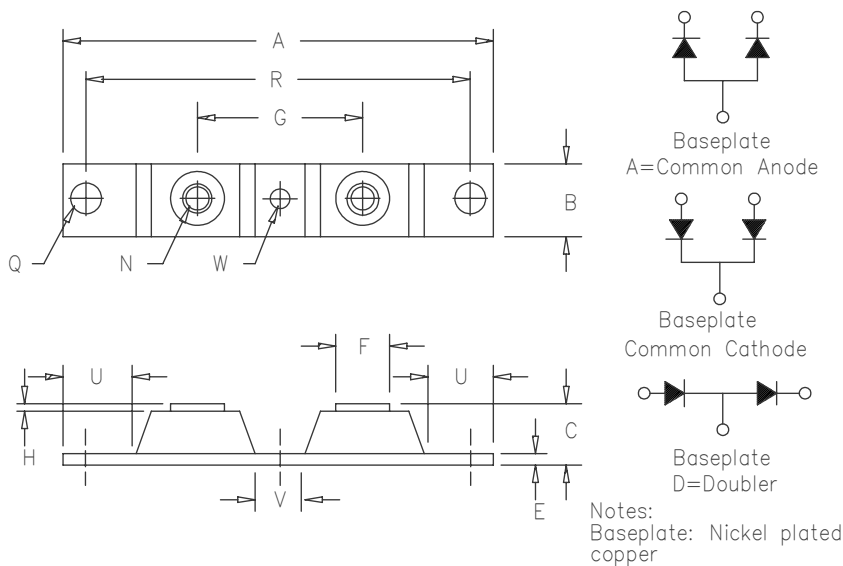


# Schottky PowerMod

## CPT40080–CPT400100



| 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           | ---   | ---         | ---   | 1/4-20    |
| 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 |
|--------------------------|----------------------|------------------------------|---------------------------------|
| CPT40080*                | 403CNQ080            | 80V                          | 80V                             |
| CPT40090*                | MBR40080CT           |                              |                                 |
| CPT400100*               | 403CNQ100            | 90V                          | 90V                             |
|                          | MBRP400100CTL        | 100V                         | 100V                            |
|                          | MBR400100CT          |                              |                                 |

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

- Schottky Barrier Rectifier
- Guard Ring Protection
- 400 Amperes/80–100 Volts
- 175°C Junction Temperature
- Reverse Energy Tested
- ROHS Compliant

### Electrical Characteristics

|                                            |                             |                                                                  |
|--------------------------------------------|-----------------------------|------------------------------------------------------------------|
| Average forward current per pkg            | I <sub>F(AV)</sub> 400 Amps | T <sub>C</sub> = 121°C, Square wave, R <sub>θJC</sub> = 0.16°C/W |
| Average forward current per leg            | I <sub>F(AV)</sub> 200 Amps | T <sub>C</sub> = 121°C, Square wave, R <sub>θJC</sub> = 0.32°C/W |
| Maximum surge current per leg              | I <sub>FSM</sub> 3000 Amps  | 8.3ms, half sine, T <sub>J</sub> = 175°C                         |
| Maximum repetitive reverse current per leg | I <sub>R(OV)</sub> 2 Amps   | f = 1 KHZ, 25°C, 1μsec square wave                               |
| Max peak forward voltage per leg           | V <sub>FM</sub> .89 Volts   | I <sub>FM</sub> = 200A: T <sub>J</sub> = 25°C*                   |
| Max peak forward voltage per leg           | V <sub>FM</sub> .69 Volts   | I <sub>FM</sub> = 200A: T <sub>J</sub> = 175°C*                  |
| Max peak reverse current per leg           | I <sub>RM</sub> 50 mA       | V <sub>RRM</sub> , T <sub>J</sub> = 125°C*                       |
| Max peak reverse current per leg           | I <sub>RM</sub> 5.0 mA      | V <sub>RRM</sub> , T <sub>J</sub> = 25°C                         |
| Typical junction capacitance per leg       | C <sub>J</sub> 4400 pF      | V <sub>R</sub> = 5.0V, T <sub>C</sub> = 25°C                     |

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

### Thermal and Mechanical Characteristics

|                                      |                  |                               |
|--------------------------------------|------------------|-------------------------------|
| Storage temp range                   | T <sub>STG</sub> | -55°C to 175°C                |
| Operating junction temp range        | T <sub>J</sub>   | -55°C to 175°C                |
| Max thermal resistance per leg       | R <sub>θJC</sub> | 0.32°C/W Junction to case     |
| Max thermal resistance per pkg       | R <sub>θJC</sub> | 0.16°C/W Junction to case     |
| Typical thermal resistance (greased) | R <sub>θCS</sub> | 0.08°C/W Case to sink         |
| Terminal Torque                      |                  | 35–40 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 (77 grams) typical |

# CPT40080–CPT400100

Figure 1  
Typical Forward Characteristics – Per Leg

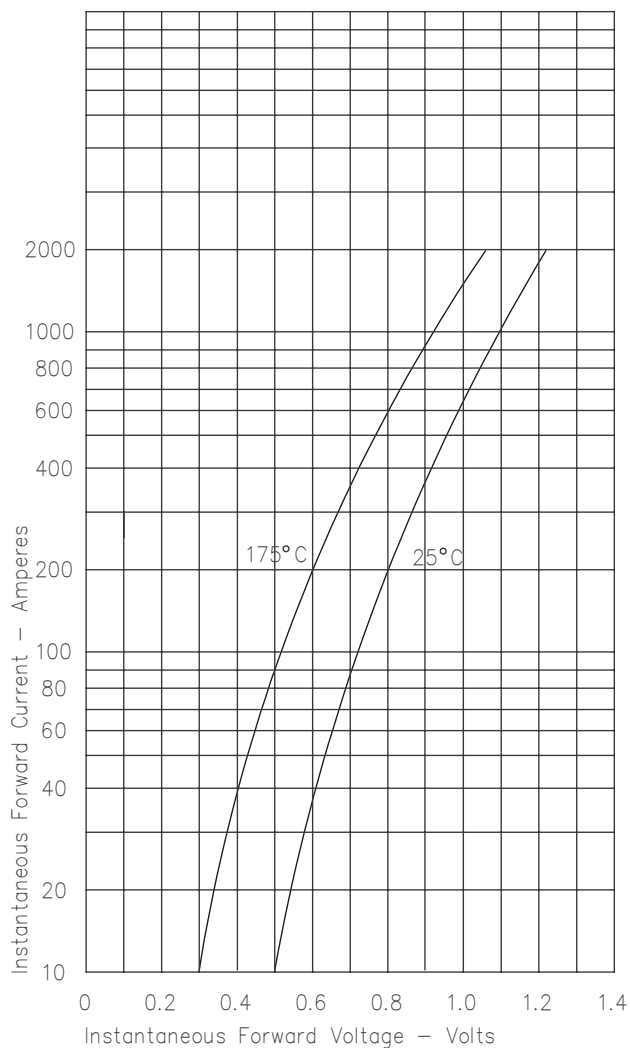


Figure 3  
Typical Junction Capacitance – Per Leg

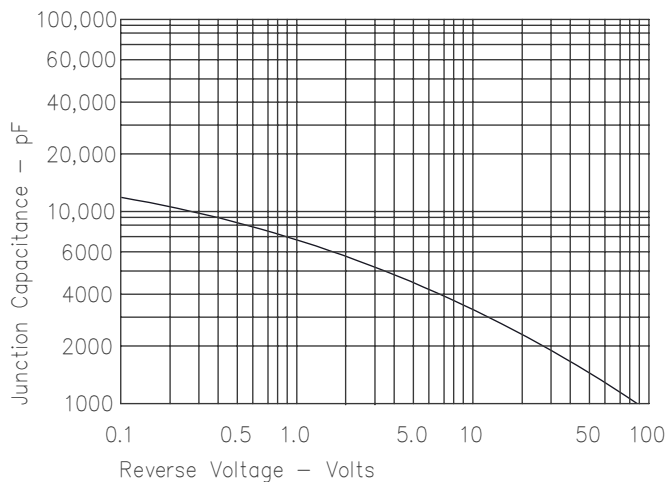


Figure 4  
Forward Current Derating – Per Leg

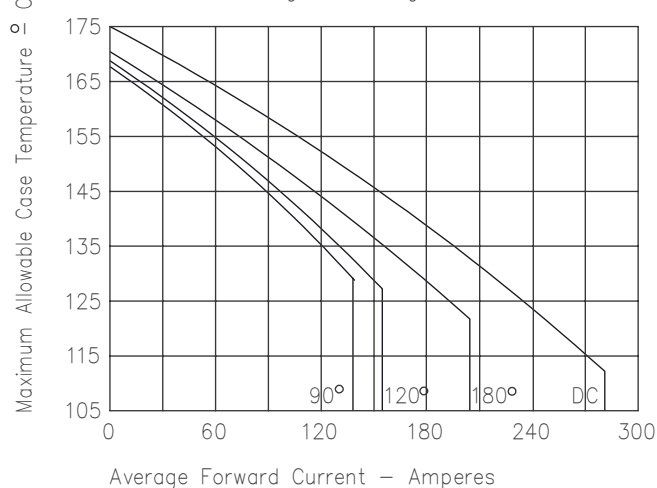


Figure 2  
Typical Reverse Characteristics – Per Leg

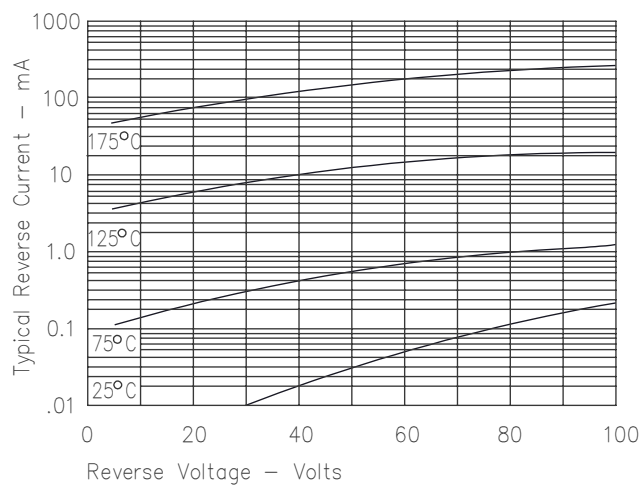
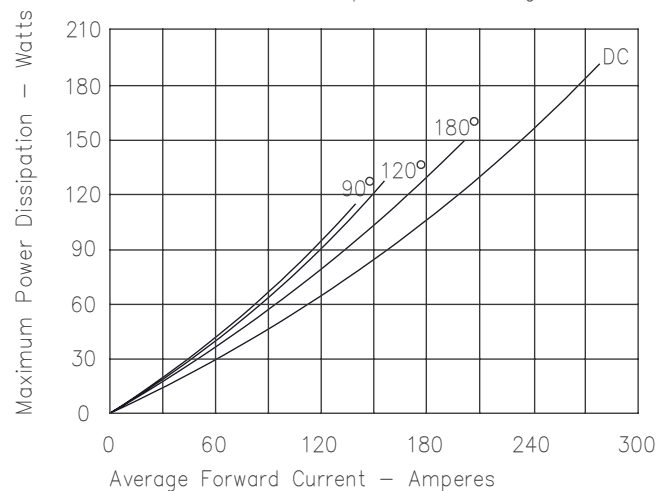


Figure 5  
Maximum Forward Power Dissipation – Per Leg



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