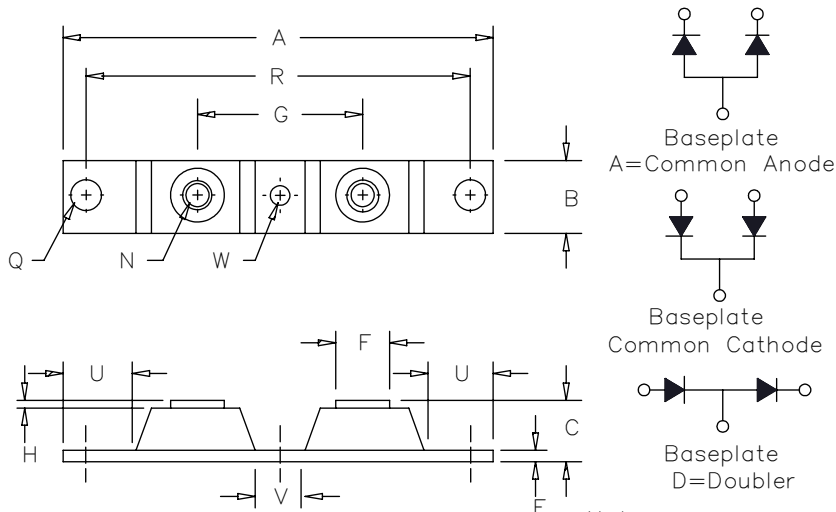


# Schottky PowerMod

## CPT30120 — CPT30145



| 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   |
| R           | 3.150 | BSC         | 80.01 | BSC    |
| U           | 0.600 | ---         | 15.24 | ---    |
| V           | 0.312 | ---         | 7.92  | ---    |
| W           | 0.180 | 0.195       | 4.57  | 4.95   |

Notes:  
Baseplate: Nickel plated copper; common cathode

| Microsemi Catalog Number | Working Peak Reverse Voltage | Repetitive Peak Reverse Voltage |
|--------------------------|------------------------------|---------------------------------|
| CPT30120*                | 20V                          | 20V                             |
| CPT30125*                | 25V                          | 25V                             |
| CPT30130*                | 30V                          | 30V                             |
| CPT30135*                | 35V                          | 35V                             |
| CPT30140*                | 40V                          | 40V                             |
| CPT30145*                | 45V                          | 45V                             |

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

- Schottky Barrier Rectifier
- Guard Ring Protection
- Common Cathode Center Tap
- 300 Amperes/45 Volts
- 125°C Junction Temperature
- Reverse Energy Tested
- $V_{RRM}$  20 – 45 Volts
- ROHS Compliant

### Electrical Characteristics

|                                            |                     |                                                                    |
|--------------------------------------------|---------------------|--------------------------------------------------------------------|
| Average forward current per pkg            | $I_F(AV)$ 300 Amps  | $T_C = 71^\circ C$ , Square wave, $R_{\theta JC} = 0.20^\circ C/W$ |
| Average forward current per leg            | $I_F(AV)$ 150 Amps  | $T_C = 71^\circ C$ , Square wave, $R_{\theta JC} = 0.40^\circ C/W$ |
| Maximum surge current per leg              | $I_{FSM}$ 2000 Amps | 8.3ms, half sine, $T_J = 125^\circ C$                              |
| Maximum repetitive reverse current per leg | $I_{R(OV)}$ 2 Amps  | $f = 1$ KHZ, $25^\circ C$                                          |
| Max peak forward voltage per leg           | $V_{FM}$ 0.62 Volts | $I_{FM} = 200A; T_J = 25^\circ C^*$                                |
| Max peak forward voltage per leg           | $V_{FM}$ 0.58 Volts | $I_{FM} = 200A; T_J = 125^\circ C^*$                               |
| Max peak reverse current per leg           | $I_{RM}$ 2 Amps     | $V_{RRM}, T_J = 125^\circ C^*$                                     |
| Max peak reverse current per leg           | $I_{RM}$ 4.0 mA     | $V_{RRM}, T_J = 25^\circ C$                                        |
| Typical junction capacitance               | $C_J$ 5500 pF       | $V_R = 5.0V, T_C = 25^\circ C$                                     |

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

### Thermal and Mechanical Characteristics

|                                      |                 |                               |
|--------------------------------------|-----------------|-------------------------------|
| Storage temp range                   | $T_{STG}$       | -40°C to 150°C                |
| Operating junction temp range        | $T_J$           | -40°C to 125°C                |
| Max thermal resistance per leg       | $R_{\theta JC}$ | 0.40°C/W Junction to case     |
| Typical thermal resistance           | $R_{\theta CS}$ | 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 (75 grams) typical |

# CPT30120 — CPT30145

Figure 1  
Typical Forward Characteristics — Per Leg

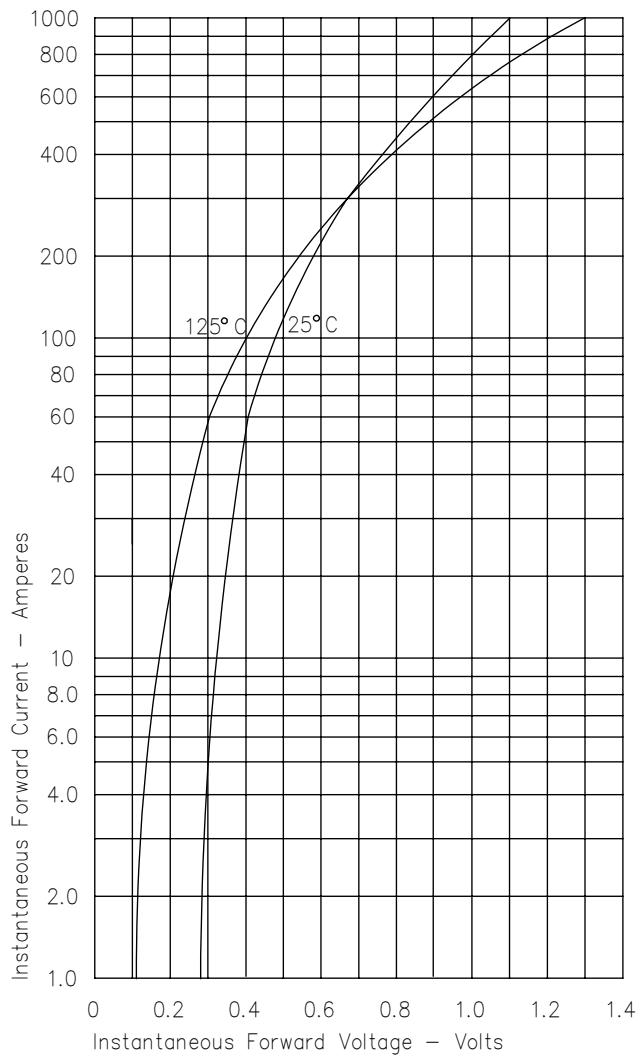


Figure 3  
Typical Junction Capacitance — Per Leg

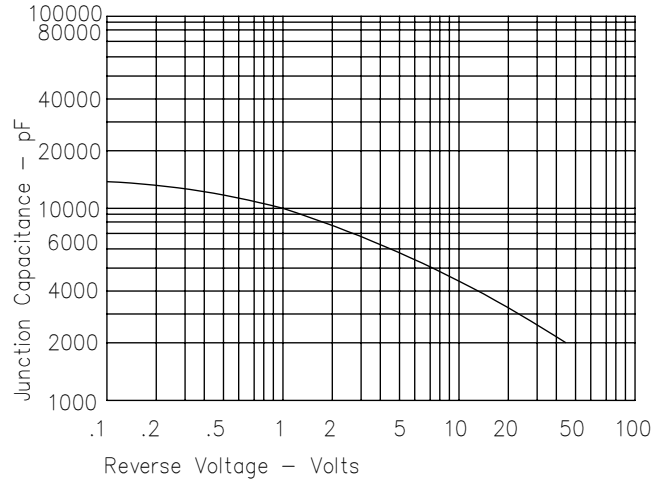


Figure 4  
Forward Current Derating — Per Leg

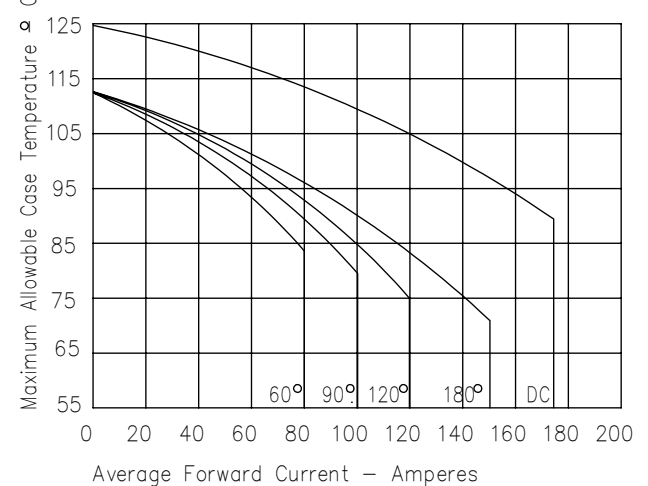


Figure 2  
Typical Reverse Characteristics — Per Leg

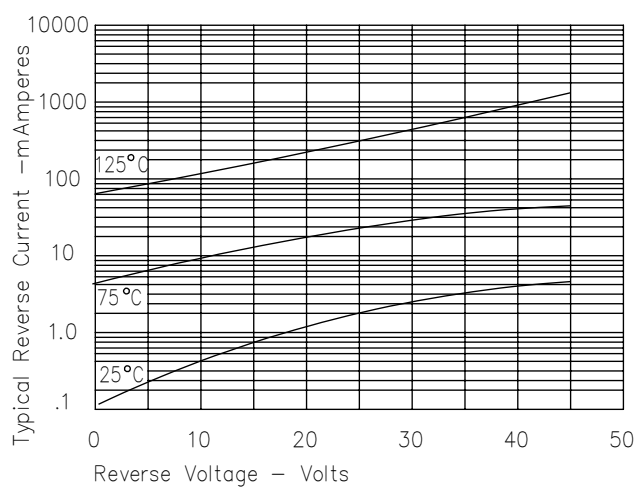
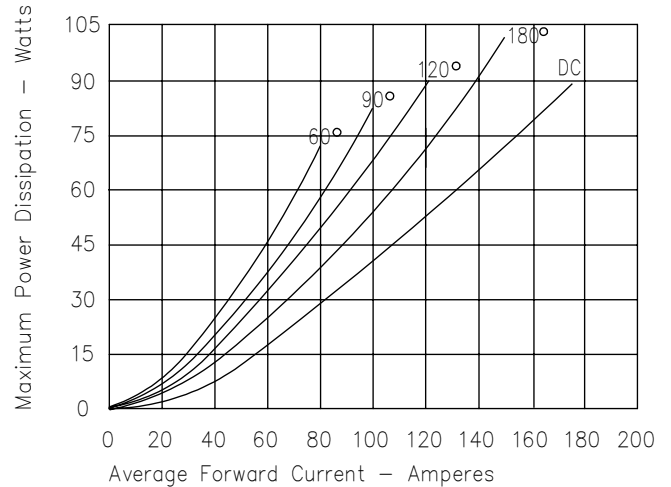


Figure 5  
Maximum Forward Power Dissipation — Per Leg



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