

MSRP10040

SWITCHMODE™ Soft Recovery Power Rectifier

POWERTAP™ III Package

State of the art geometry features epitaxial construction with glass passivation and metal overlay contact. Ideally suited for low voltage, high frequency switching power supplies, free wheeling diode and polarity protection diodes.

- Soft Recovery Rectifier
- Low I_{RRM} Losses
- Highly Stable Glass Passivated Junction

Mechanical Characteristics:

- Dual Die Construction
- Case: Epoxy, Molded with Plated Copper Heatsink Base
- Weight: 40 Grams (approximately)
- Finish: All External Surfaces Corrosion Resistant
- Top Terminal Torque: 25 – 40 lb-in max.
- Shipped 50 Units per Foam
- Marking: MSRP10040

MAXIMUM RATINGS

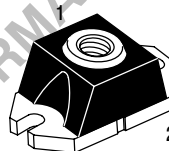
| Rating | Symbol | Max | Unit |
|---|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 400 | V |
| Average Rectified Forward Current (At Rated V_R , $T_C = 100^\circ\text{C}$) | I_O | 100 | A |
| Peak Repetitive Forward Current (At Rated V_R , Square Wave, 100 kHz, $T_C = \text{TBD}^\circ\text{C}$) | I_{FRM} | 200 | A |
| Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) | I_{FSM} | 800 | A |
| Storage/Operating Case Temperature Range | T_{stg}, T_C | -55 to +150 | $^\circ\text{C}$ |
| Operating Junction Temperature Range | T_J | -55 to +150 | $^\circ\text{C}$ |



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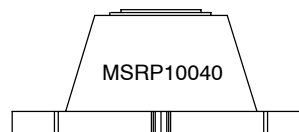
<http://onsemi.com>

SOFT RECOVERY RECTIFIER 100 AMPERES 400 VOLTS



POWERTAP III
CASE 357D
PLASTIC

MARKING DIAGRAM



MSRP10040 = Device Code

ORDERING INFORMATION

| Device | Package | Shipping |
|-----------|--------------|---------------|
| MSRP10040 | POWERTAP III | 50 Units/Tray |

MSRP10040

THERMAL CHARACTERISTICS

| Rating | Symbol | Value | Unit |
|---------------------------------------|-----------------|-------|-----------------------------|
| Thermal Resistance — Junction-to-Case | $R_{\theta JC}$ | 0.5 | $^{\circ}\text{C}/\text{W}$ |

ELECTRICAL CHARACTERISTICS

| | | | | |
|---|----------|----------------------------|-----------------------------|---------------|
| Typical Instantaneous Forward Voltage (Note 1.) ($I_F = 100\text{ A}$) ($I_F = 200\text{ A}$) | V_F | $T_J = 25^{\circ}\text{C}$ | $T_J = 100^{\circ}\text{C}$ | Volts |
| | | 1.75 2.00 | 1.25 1.50 | |
| Typical Instantaneous Reverse Current ($V_R = 400\text{ V}$) ($V_R = 200\text{ V}$) | I_R | $T_J = 25^{\circ}\text{C}$ | $T_J = 100^{\circ}\text{C}$ | μA |
| | | 100 50 | 500 250 | |
| Typical Reverse Recovery Time (Note 2.) ($V_R = 30\text{ V}$, $I_F = 10\text{ A}$, $di/dt = 200\text{ A}/\mu\text{s}$) | t_{rr} | 75 | | ns |
| Typical Peak Reverse Recovery Current ($V_R = 30\text{ V}$, $I_F = 10\text{ A}$, $di/dt = 200\text{ A}/\mu\text{s}$) | I_{rm} | 7.0 | | Amps |

1. Pulse Test: Pulse Width $\leq 250\ \mu\text{s}$, Duty Cycle $\leq 2\%$.
2. t_{rr} measured projecting from 25% of IRM to zero.

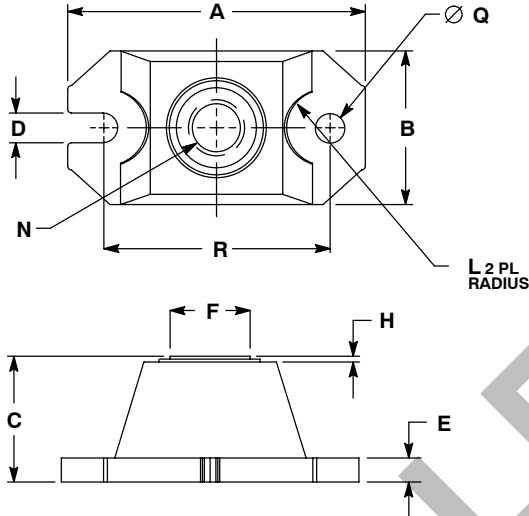
OBSOLETE

THIS DEVICE IS OBSOLETE
PLEASE CONTACT YOUR ON SEMICONDUCTOR
REPRESENTATIVE FOR INFORMATION

MSRP10040

PACKAGE DIMENSIONS

POWERTAP III
CASE 357D-01
ISSUE A



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. TERMINAL PENETRATION: 5.97 (0.235) MAXIMUM.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------------|-------|--------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.520 | 1.560 | 38.61 | 39.62 |
| B | 0.783 | 0.813 | 19.89 | 20.65 |
| C | 0.615 | 0.635 | 15.62 | 16.13 |
| D | 0.152 | 0.162 | 3.86 | 4.11 |
| E | 0.120 | 0.130 | 3.05 | 3.30 |
| F | 0.435 | 0.445 | 11.05 | 11.30 |
| H | 0.007 | 0.030 | 0.18 | 0.76 |
| L | 0.210 | 0.230 | 5.33 | 5.84 |
| N | 1/4-20UNC-2B | | 1/4-20UNC-2B | |
| Q | 0.152 | 0.162 | 3.86 | 4.11 |
| R | 1.175 | 1.195 | 29.85 | 30.35 |

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