

# ON Semiconductor

## Is Now

# onsemi™

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# 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

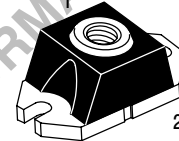
Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	400	V
Average Rectified Forward Current (At Rated $V_R$ , $T_C = 100^\circ\text{C}$ )	$I_O$	100	A
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 100 kHz, $T_C = \text{TBD}^\circ\text{C}$ )	$I_{FRM}$	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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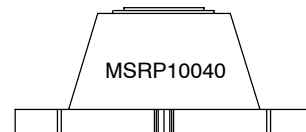
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### SOFT RECOVERY RECTIFIER 100 AMPERES 400 VOLTS



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	°C/W

## ELECTRICAL CHARACTERISTICS

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

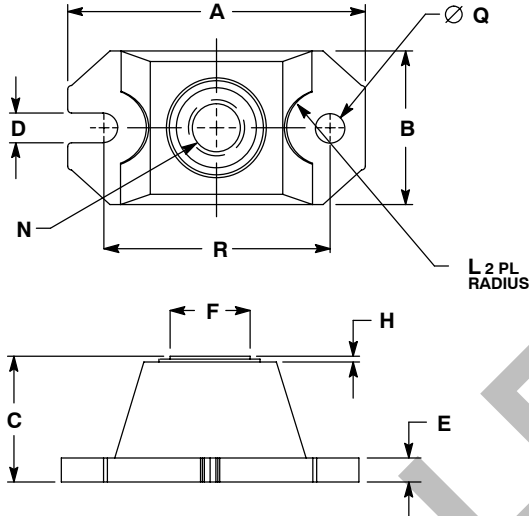
1. Pulse Test: Pulse Width  $\leq 250$   $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .
2.  $t_{rr}$  measured projecting from 25% of IRM to zero.

**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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