Product Preview

SWITCHMODE™ Schottky Power Rectifier

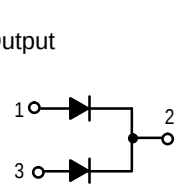
POWERTAP II™ Package

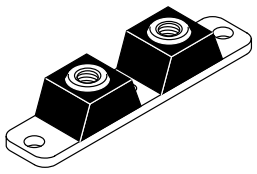
XBRP40045CTL

SCHOTTKY BARRIER RECTIFIER 400 AMPERES 45 VOLTS

. . . employing the Schottky Barrier principle in a large area metal–to–silicon power diode. State–of–the–art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency switching power supplies, free wheeling diode and polarity protection diodes.

- Highly Stable Oxide Passivated Junction
- Guardring for Stress Protection
- Matched Dual Die Construction; May be Paralleled for High Current Output
- Low Forward Voltage





CASE 357C–03
POWERTAP II

Mechanical Characteristics:

- Case: Epoxy, Molded with Metal Heatsink Base
- Weight: 80 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant
- Base Plate Torques: See procedure given in the Package Outline Section
- Top Terminal Torque: 25–40 lb–in max.
- Shipped 25 units per foam
- Marking: XBRP40045CTL

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	45	V
Average Rectified Forward Current (At Rated V_R, T_C = 100°C)	Per Leg Per Package	I_O	200 400	A
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz, T_C = 100°C)	Per Package	I_{FRM}	400	A
Non–Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	Per Package	I_{FSM}	2500	A
Storage / Operating Case Temperature		T_{stg}, T_C	– 55 to +150	°C
Operating Junction Temperature		T_J	– 55 to +150	°C
Voltage Rate of Change (Rated V_R, T_J = 25°C)		dv/dt	1000	V/μs

THERMAL CHARACTERISTICS

Thermal Resistance — Junction–to–Case	Per Leg	$R_{\theta JC}$	0.45	°C/W

ELECTRICAL CHARACTERISTICS

Rating		Symbol	Value		Unit
Maximum Instantaneous Forward Voltage (1)	Per Leg	V_F	**T_J = 25°C**	**T_J = °C**	V
(I_F = 200 A) (I_F = 400 A)			0.57 0.73 (target)	TBD TBD	
Maximum Instantaneous Reverse Current (1)	Per Leg	I_R	**T_J = 25°C**	**T_J = °C**	mA
(V_R = 45 V) (V_R = 22.5 V)			10 TBD	TBD TBD	

(1) Pulse Test: Pulse Width ≤ 380 μs, Duty Cycle ≤ 2%.

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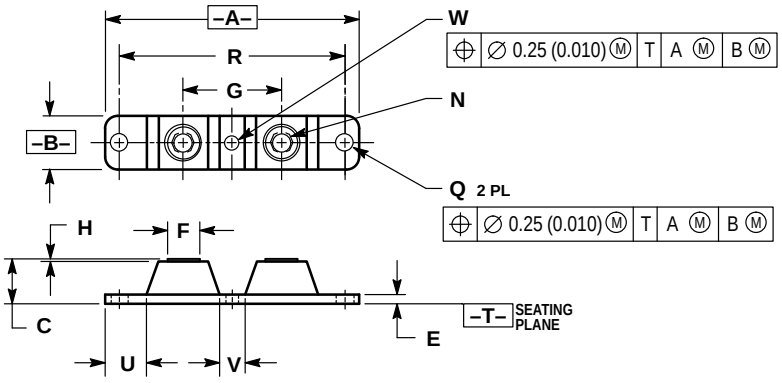
PACKAGE DIMENSIONS



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

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	3.450	3.635	87.63	92.33
B	0.700	0.810	17.78	20.57
C	0.615	0.640	15.53	16.26
E	0.120	0.130	3.05	3.30
F	0.435	0.445	11.05	11.30
G	1.370	1.380	34.80	35.05
H	0.007	0.030	0.18	0.76
N	1/4–20UNC–2B		1/4–20UNC–2B	
Q	0.270	0.285	6.86	7.32
R	31.50 BSC		80.01 BSC	
U	0.600	0.630	15.24	16.00
V	0.330	0.375	8.39	9.52
W	0.170	0.190	4.32	4.82

CASE 357C–03
ISSUE C

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