

ULTRA FAST RECTIFIER

DESCRIPTION

Microsemi's Powermite SMT package offers high efficiency ultra fast rectifiers with the power handling capabilities previously found only in much larger packages. They are ideal for SMD applications that operate at high frequencies.

The Powermite package's full metallic bottom eliminates the possibility of solder flux entrapment during assembly, and its unique locking tab acts as an integral heat sink. Its innovative design makes this device ideal for use with automatic insertion equipment.

KEY FEATURES

- High Power Surface Mount Package
- Ultra-fast Recovery Time (30ns)
- Low Forward Voltage
- Compatible with Automatic Insertion Equipment
- Full Metallic Bottom Eliminates Flux Entrapment
- Integral Heat / Sink/Locking Tabs

POWERMITE PACKAGE
HIGH EFFICIENCY, 2A, 30ns

APPLICATIONS/BENEFITS

- Switching and Regulating Power Supplies
- Charge Pump Circuits
- Reduces reverse recovery loss due to low IRM
- Replaces wire bonded die with a flip chip package

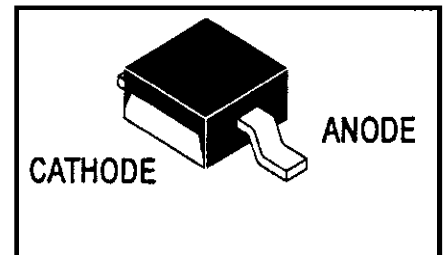
IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

ABSOLUTE MAXIMUM RATINGS

Maximum Reverse Voltage	600V
Average Power Dissipation @ T _{Tab} = 75°C	2.5W*
Thermal Resistance Junction to Tab	30° C/W
Thermal Resistance Junction to Bottom	10° C/W
Non-Repetitive Sinusoidal Surge Current (8.3mS)	20A
Operating and Storage Temperature	-55° to + 150° C
* WHEN MOUNTED ON A PC BOARD WITH 2 OZ. COPPER.	

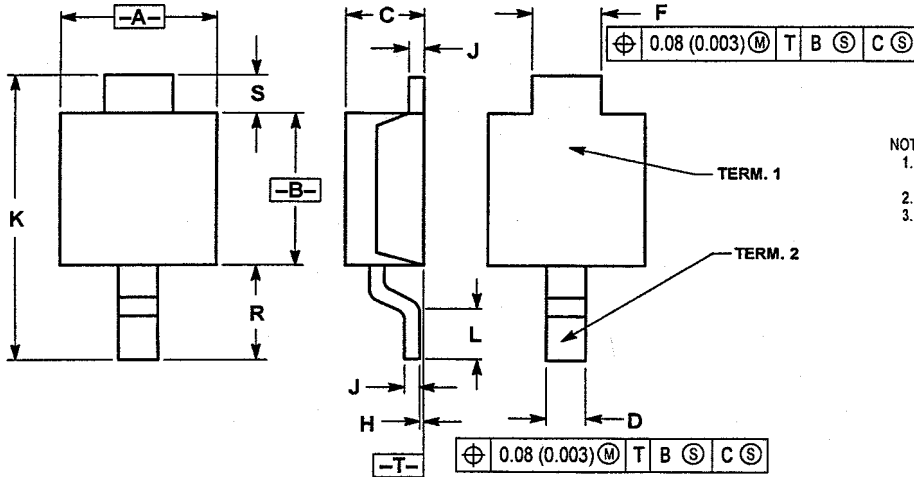
SPICE MODEL UPR60
SURFACE MOUNT RECTIFIER

.MODEL UPR60 D(Is = 1.88N N = 1.6 Rs = 0.133 IkF = 2.37M
+ XTI = 3 EG = 1.11 Cjo = 25p M = .41 Vj = .424 Fc = 0.5
+ Isr = 10n Nr = 2.135 Bv = 600 lbv = 300n Tt = 62n



ELECTRICAL SPECIFICATIONS

Test	Min	Typ	Max	Units	Conditions
Forward Voltage V _f			1.6	V	I _f = 2 A, T _A = 25°C
			1.4	V	I _f = 1.2 A, T _A = 25°C
Reverse Current I _R			1	µA	V _R = 600V, T _A = 25°C
			100	µA	V _R = 600V, T _A = 125°C
Reverse Recovery Time T _{rr}			30	ns	IF = 0.5A, IR = 1.0A, IREC = 0.25A, T _A = 25°C



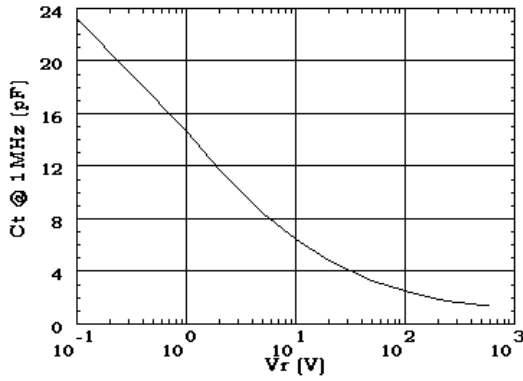
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.

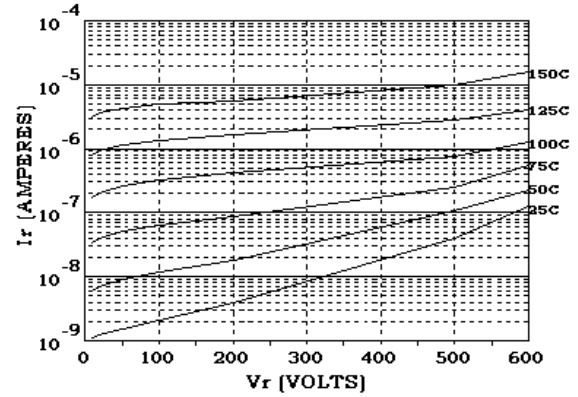
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.75	2.05	0.069	0.081
B	1.75	2.15	0.069	0.086
C	0.85	1.15	0.033	0.045
D	0.40	0.65	0.016	0.026
F	0.70	1.00	0.028	0.039
H	-0.05	+0.10	-0.002	+0.004
J	0.10	0.25	0.004	0.010
K	3.60	3.90	0.142	0.154
L	0.50	0.80	0.020	0.031
R	1.10	1.50	0.043	0.059
S	0.25	0.85	0.010	0.033

CASE 457-03
ISSUE B

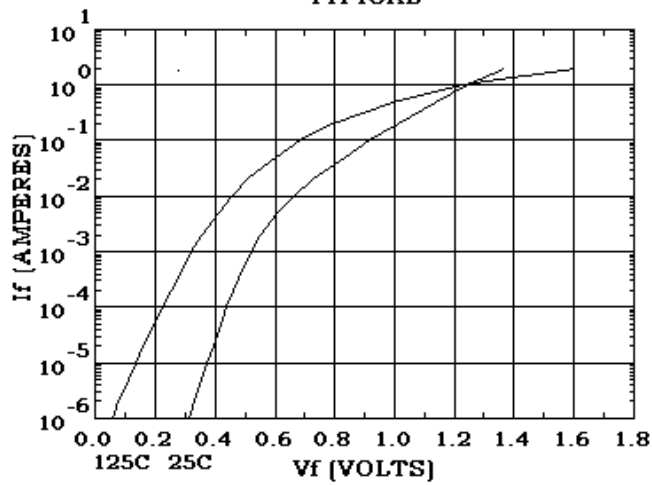
**UPR60
TYPICAL**



**UPR60
MEAN**



**UPR60
TYPICAL**





UPR60

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WWW.MICROSEMI.COM

NOTES