Microsemi
WATERTOWN DIVISION

UPS540

SCHOTTKY BARRIER RECTIFIER
0.5 AMP. 40 VOLT

DESCRIPTION

In Microsemi's new Powermite SMT Package, these high efficiency Schottky rectifiers offer power handling capabilities previously found only in much larger packages. They are ideal for SMD applications that operate at high frequencies.

In addition to its size advantages, Powermite package features include a full metallic bottom that eliminates the possibility of solder flux entrapment during assembly, and a unique locking tab acts as an integral heat sink. Its innovative design makes this device ideal for use with automatic insertion equipment.

SURFACE MOUNT

POWERMITE® Surface Mount Power Package

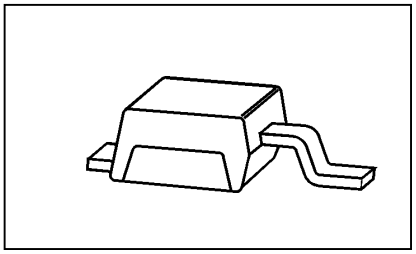
IMPORTANT: For the most current data, consult *MICROSEMI*'s website: **http://www.microsemi.com**

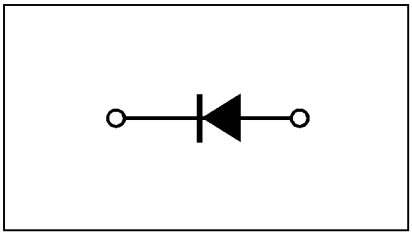
KEY FEATURES

- Low Profile – Maximum height of 1.1 mm
- Footprint Area of 10 mm
- Low V_F Provides Higher Efficiency
- Low Thermal Resistance with Direct Thermal Path of Die on Exposed Cathode Heat Sink
- Supplied in 8mm Tape and Reel – 3,000 units/7" Reel; 12,000 units/13" Reel

APPLICATIONS/BENEFITS

- High power Surface Mount Package
- Guard Ring Protection
- Low forward voltage
- Integral Heat Sink/Locking Tabs
- Compatible with Automatic Insertion Equipment
- Full Metallic Bottom Eliminates Flux Entrapment





MECHANICAL CHARACTERISTICS

- Case: Molded Epoxy
- Meets UL94VO at 1/8 inch
- Device Marking S54
- Lead and Mounting Surface Temperature for Soldering = 260°C Maximum for 10 Seconds

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MAXIMUM RATINGS

RATING	(Conditions)	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	40	V V V
Average Rectified Forward Current	(@ Rated V_R and T_C = 100°C)	I_O	0.5	A
Repetitive Peak Surge Current	(Non-Repetitive peak surge current @ I_O = 0.5 Amps)	I_{FSM}	10	A
Storage Temperature Range		T_{STG}, T_C	-55 to 125	°C
Operating Temperature Range		T_J	-55 to 125	°C
Voltage Rate of Change	(@ Rated V_R and T_J = 25°C)	dv/dt	1000	V/us

THERMAL CHARACTERISTICS

RATING	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction – to – Case (1)	Rtjtab	70	°C/W
Thermal Resistance, Junction-to-Ambient (1)	Rtja	230	°C/W

(1) Devices mounted on 2 in. sq. FR-4 Board (2 oz) with minimum footprint

ELECTRICAL CHARACTERISTICS

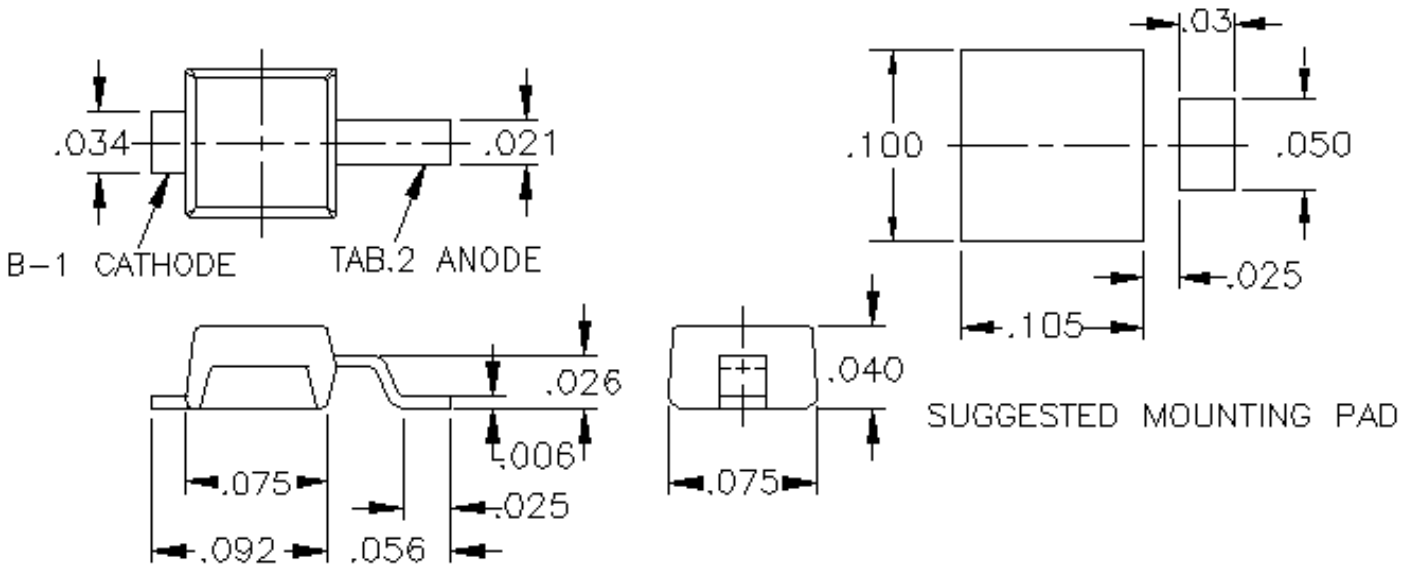
RATING	(Conditions)	SYMBOL	VALUE 25°C	VALUE 100°C	UNIT
Maximum Instantaneous Forward Voltage	(I_F = 0.5 Amps, T_J = +25°C)	V_F	0.51	0.46	Volts
	(I_F = 1 Amps, T_J = +25°C)	V_F	0.62	0.61	
Maximum Instantaneous Reverse Current	(V_R = 15 Vdc, T_J = +25°C)	I_R	10	5,000	µA
	(V_P = 40 Vdc)	I_R	20	13,000	

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MECHANICAL SPECIFICATIONS



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