

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>

MECHANICAL CHARACTERISTICS

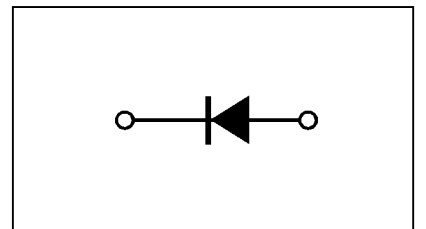
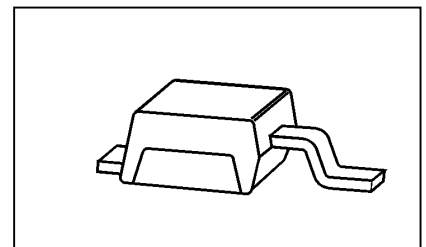
- Case: Molded Epoxy
- Meets UL94VO at 1/8 inch
- Device Marking S53
- Lead and Mounting Surface Temperature for Soldering = 260°C Maximum for 10 Seconds

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



PRELIMINARY

MAXIMUM RATINGS

RATING	(Conditions)	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage		V_{RRM}	30	V
Working Peak Reverse Voltage		V_{RWM}	30	V
DC Blocking Voltage		V_R	30	V
Average Rectified Forward Current	(@ Rated V_R and $T_C = 100^\circ\text{C}$)	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 150	$^\circ\text{C}$
Operating Temperature Range		T_J	-55 to 125	$^\circ\text{C}$
Voltage Rate of Change	(@ Rated V_R and $T_J = 25^\circ\text{C}$)	dv/dt	1000	V/us

THERMAL CHARACTERISTICS

RATING	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction – to – Case (1)	$R_{\theta jtab}$	70	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient (1)	$R_{\theta ja}$	230	$^\circ\text{C/W}$

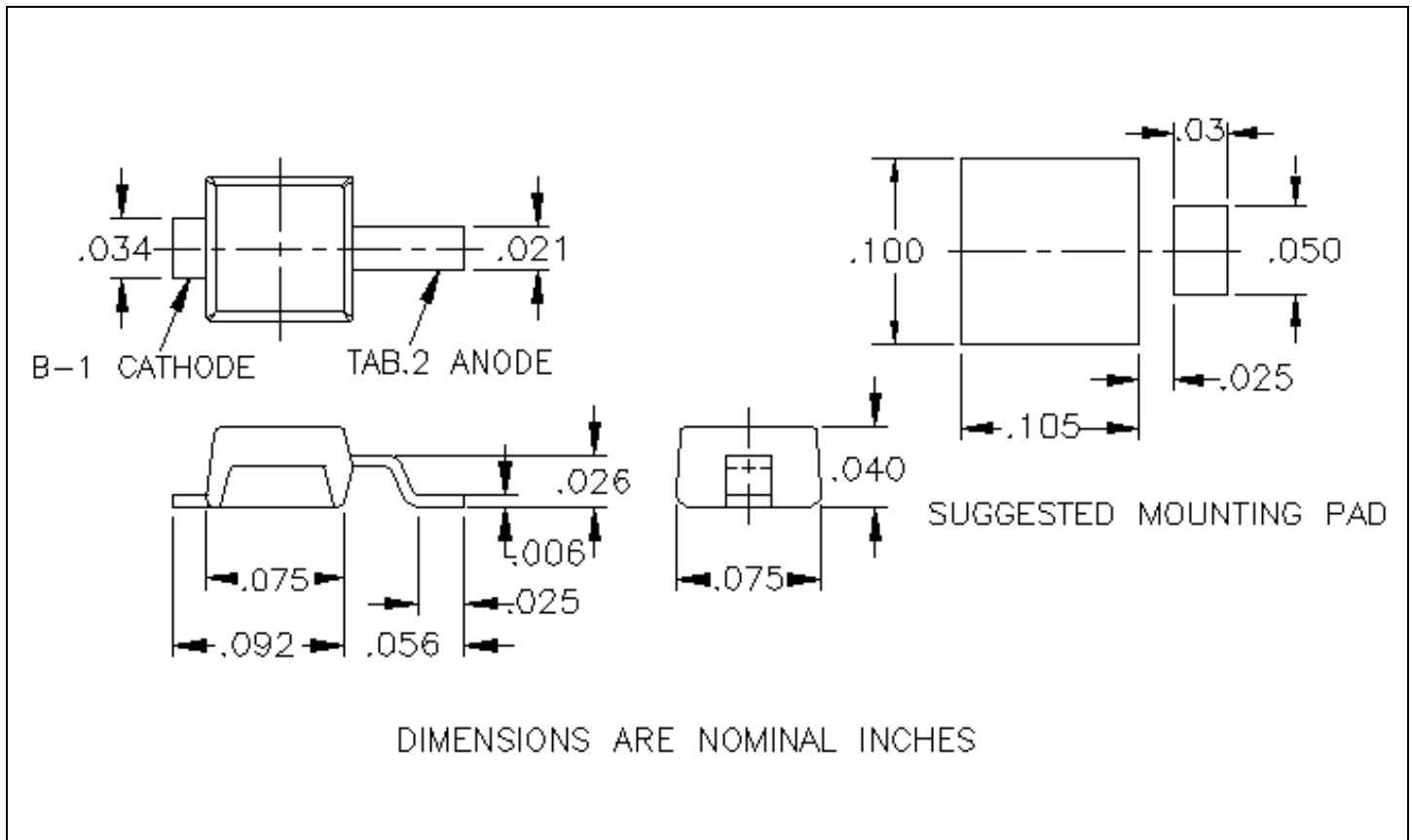
(1) Devices mounted on 2 in. sq. FR-4 Board (2 oz) with minimum footprint

ELECTRICAL CHARACTERISTICS

RATING	(Conditions)	SYMBOL	VALUE	UNIT
Maximum Instantaneous Forward Voltage	($I_F = 0.1$ Amps, $T_J = +25^\circ\text{C}$)	V_F	0.375	Volts
	($I_F = 0.5$ Amps, $T_J = +25^\circ\text{C}$)	V_F	0.430	
Maximum Instantaneous Reverse Current	(Rated Vdc, $T_J = +25^\circ\text{C}$)	I_R	130	μA
	($V_R = 15$ Vdc, $T_J = +25^\circ\text{C}$)	I_R	20	

PRELIMINARY

MECHANICAL SPECIFICATIONS



PRELIMINARY

PRELIMINARY