

DESCRIPTION

In Microsemi's new Powermite[®] 3 package, these high efficiency ultrafast rectifiers offer the 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[®] 3 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.

KEY FEATURES


- High power surface mount package.
- Silicon carbide Schottky rectifiers no reverse voltage recovery.
- Internal heat sink locking tabs
- Low forward voltage.
- Full metallic bottom eliminates flux entrapment
- Compatible with automatic insertion equipment
- Low profile-maximum height of 1mm supplied in 16 mm tape reel- 6000 units/ 13" reel.

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

**ABSOLUTE MAXIMUM RATINGS AT 25° C
(UNLESS OTHERWISE SPECIFIED)**

Rating	Symbol	Value	Unit
Maximum Reverse Voltage, UPSC203	V	200	Vdc
Maximum Reverse Voltage, UPSC403	V	400	Vdc
Maximum Reverse Voltage, UPSC603	V	600	Vdc
Maximum Average Output Current, T _{TAB} =75°C	T	4.0	Adc
Non-Repetitive Sinusoidal Surge Current (8.3 mS)	I	15	A
Storage Temperature	T stg	-55 to +150	°C
Operating Temperature	T op	-55 to +150	°C

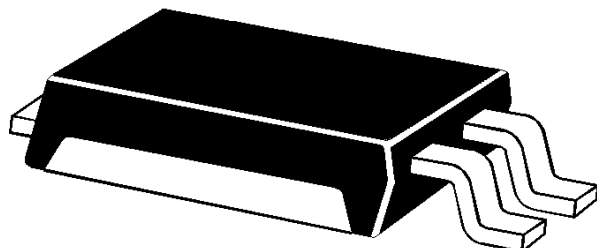
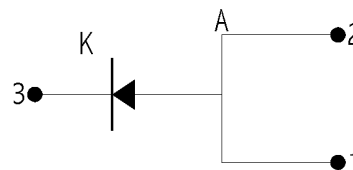
APPLICATIONS/BENEFITS

- Switching and Regulating Power Supplies.
- Charge Pump Circuits.
- Reduces reverse recovery loss due to low IRM.
- Small foot print  =
190 X 300 mils
1:1 Actual size

**THERMAL CHARACTERISTICS
(UNLESS OTHERWISE SPECIFIED)**

Thermal Resistance			
Junction-to Tab	R _{tab}	7.5	°C/Watt
Junction-to Bottom	R _{ja} (1)	2.5	°C/Watt

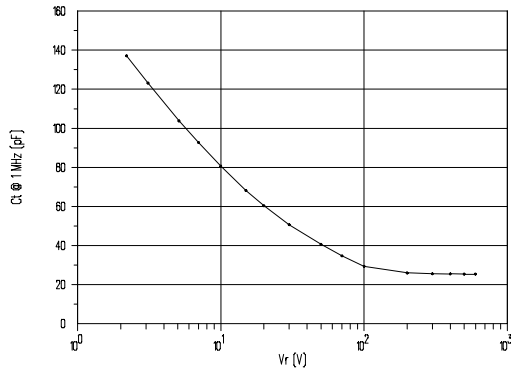
(1) When Mounted on PC board with 2 ounce copper pattern.



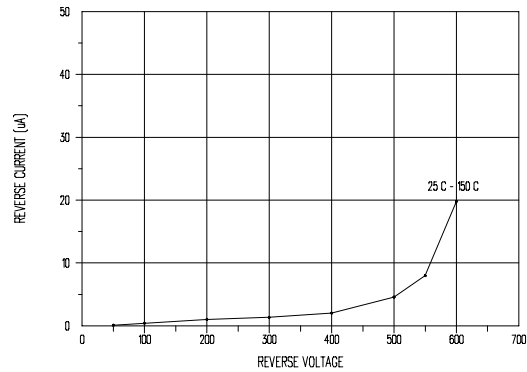
ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
▶ Off Characteristics						
Forward Voltage:	V_F	$I_F = 4 \text{ A}$		1.7	1.8	V
Reverse Current:	I_R	$V_R = \text{Max Rating}$		20	50	μA
▶ Dynamic characteristics						
Capacitance	C_T	$V_R = 200\text{V}; F = 1 \text{ MHz}$		30	40	pF

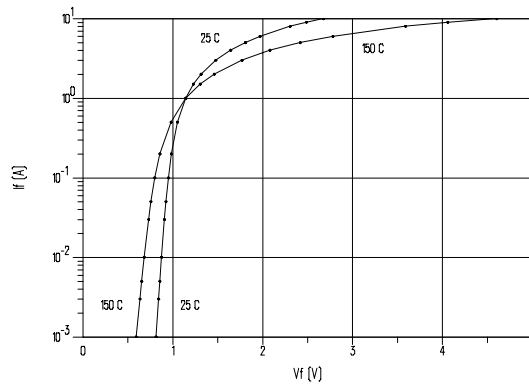
CAPACITANCE vs. REVERSE VOLTAGE

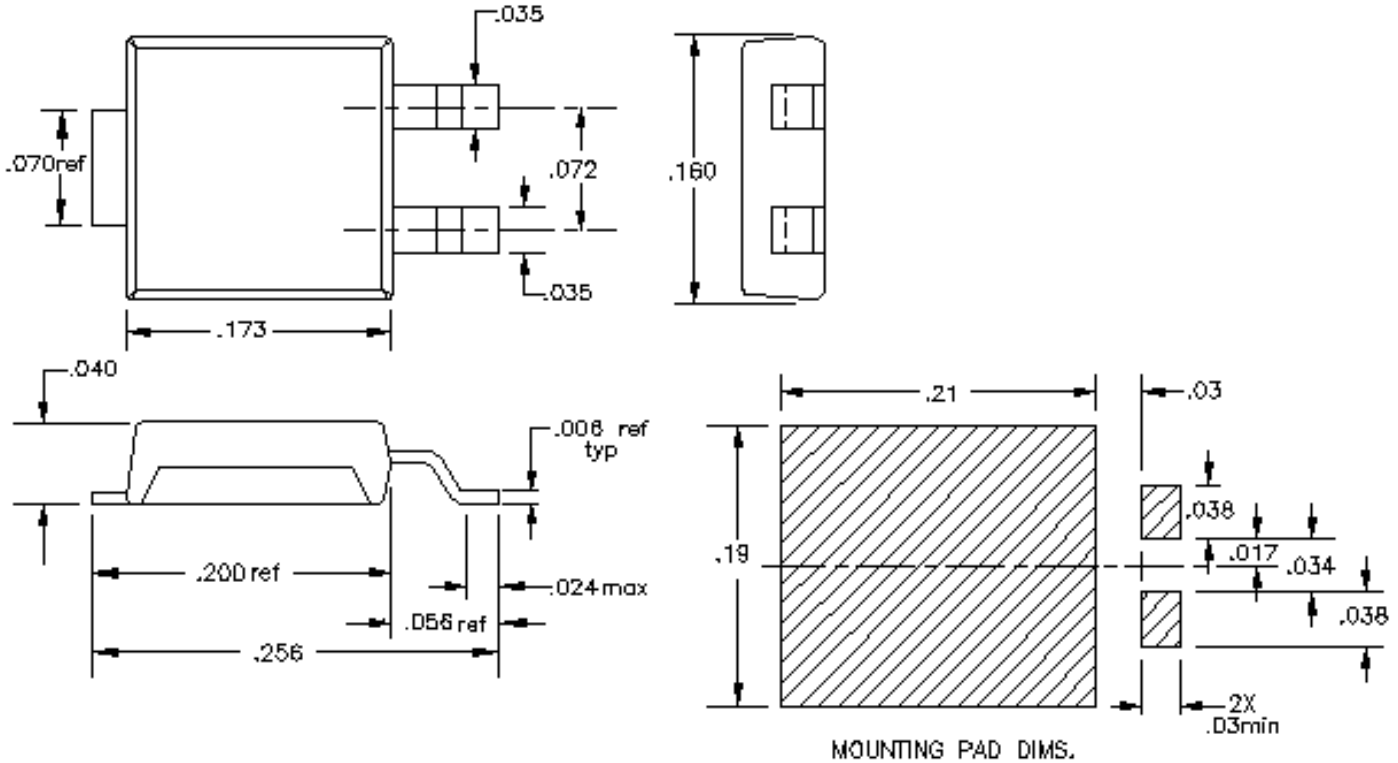


REVERSE CHARACTERISTICS



FORWARD CHARACTERISTICS





NOTE: LEAD FRAMES ARE Sn/Pb PLATED.

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PRELIMINARY

UPSC203/UPSC403/UPSC603

Silicon Carbide Schottky Rectifiers

PRODUCT PREVIEW

NOTES:

www.Microsemi.com

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