



## Ultra Low VF Schottky Barrier Rectifier 1.0 Amp, 15 Volt

### DESCRIPTION

In Microsemi's Powermite 1 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.

**Important:** For the latest information, visit our website <http://www.microsemi.com>.

### FEATURES

- Low profile package (<1.1 mm).
- Small footprint: 10 mm<sup>2</sup> (See mounting pad details on the [last page](#).)
- Ultra low forward voltage provides higher efficiency.
- Low thermal resistance with direct thermal path from the die through integral heat sink and metallic bottom.
- Supplied in 8mm tape and reel.
- RoHS compliant.

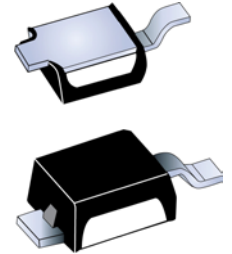
### APPLICATIONS / BENEFITS

- High power surface mount package.
- Guard ring construction for transient protection.
- Integral heat sink/locking tabs.
- Compatible with Automatic Insertion Equipment.
- Full-metallic bottom eliminates flux entrapment.
- High surge capacity.
- Ideal for OR'ing diode.

### MAXIMUM RATINGS

Parameters/Test Conditions	Symbol	Value	Unit
Storage Temperature	$T_{STG}$	-55 to +150	°C
Junction Temperature	$T_J$	-55 to +100	°C
Thermal Resistance Junction-to-Lead	$R_{\theta JL}$	15	°C/W
Peak Repetitive Reverse Voltage and also Working Peak Reverse Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	15	V
Repetitive Peak Surge Current <sup>(1)</sup>	$I_{FSM}$	50	A
Maximum Average DC Output Current @ Rated $V_R$ and $T_L = 65^\circ\text{C}$	$I_O$	1.0	A
Voltage Rate of Change @ Rated $V_R$ and $T_J = 25^\circ\text{C}$	$dv/dt$	1000	V/ $\mu\text{s}$
Max Peak Reverse Current ( $V_{RRM} = 15\text{V}$ , $T_J = 25^\circ\text{C}$ )	$I_{RM}$	10	mA
Solder Temperature @ 10 s	$T_{SP}$	260	°C

**Notes:** 1. Non-Repetitive peak surge current @  $I_O = 1.0$  Amps.



**Powermite 1  
(DO-216AA)  
Package**

**MSC – Lawrence**

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Lawrence, MA 01841  
Tel: 1-800-446-1158 or  
(978) 620-2600  
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**MSC – Ireland**

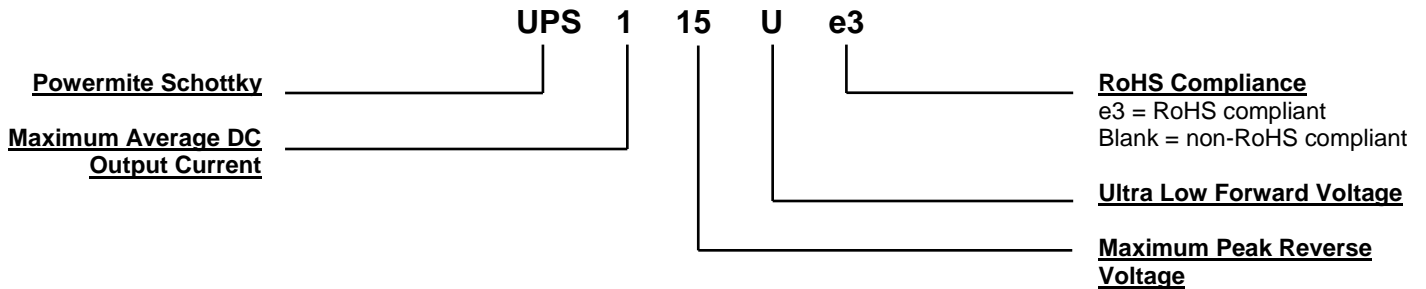
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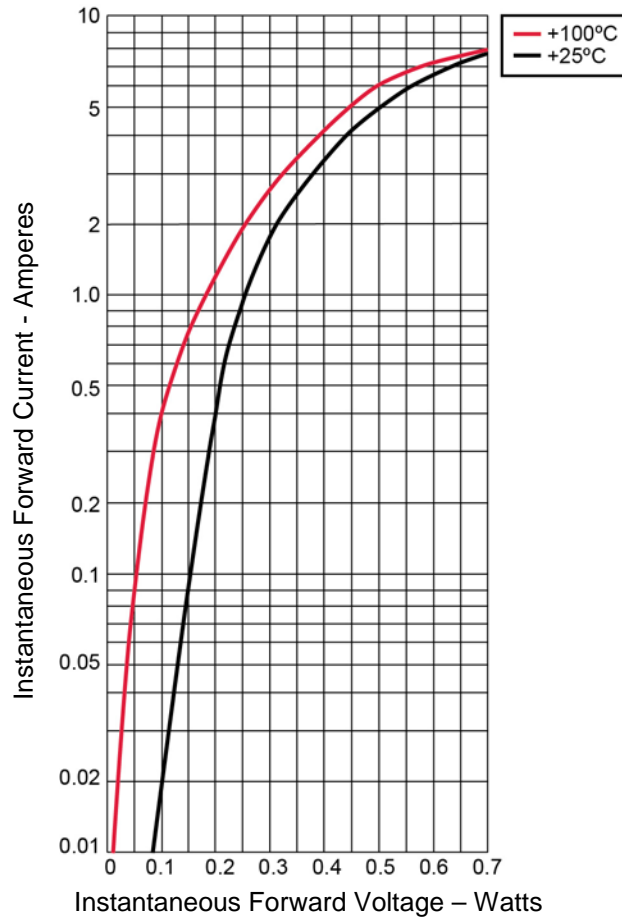
**MECHANICAL and PACKAGING**

- CASE: Molded epoxy package meets UL94V-0 at 1/8 inch.
- TERMINALS: Copper with annealed matte-tin plating for RoHS compliance. Solderable per MIL-STD-750 method 2026. (Consult factory for tin-lead plating).
- MARKING: Body marked with "S15U".
- POLARITY: Cathode designated by Tab 1 (bottom).
- TAPE & REEL option: Packaging per EIA-481-B with 8 mm tape. Consult factory for quantities.
- WEIGHT: Approximately 0.016 grams.
- See [Package Dimensions](#) on last page.

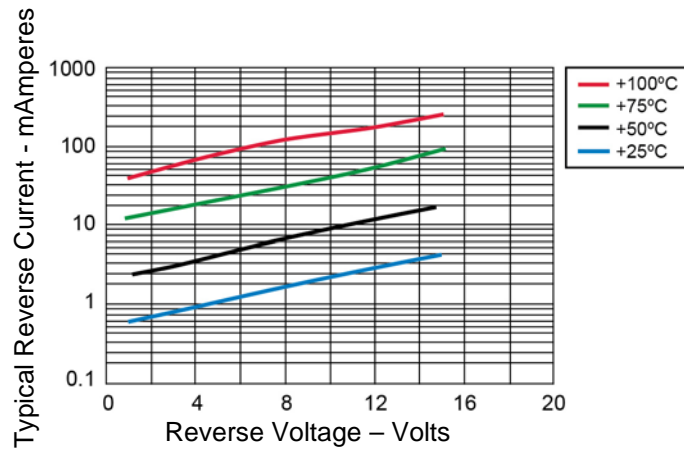
**PART NOMENCLATURE**

**ELECTRICAL CHARACTERISTICS**

RATING (Conditions)	SYMBOL	VALUE	UNIT
Maximum Instantaneous Forward Voltage (I <sub>F</sub> = 1.0 Amps, T <sub>J</sub> = +25°C)	V <sub>F</sub>	0.31	Volts
Maximum Instantaneous Reverse Current (V <sub>R</sub> = 15 Vdc, T <sub>J</sub> = +25°C)	I <sub>RM</sub>	10	mA
Typical Junction Capacitance (T <sub>J</sub> = 25°C, V <sub>R</sub> = 5V)	C <sub>J</sub>	150	pF

GRAPHS

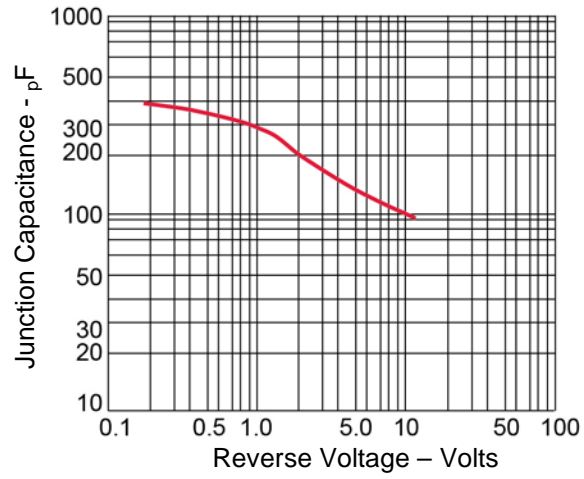


**FIGURE 1**  
Typical Forward Characteristics

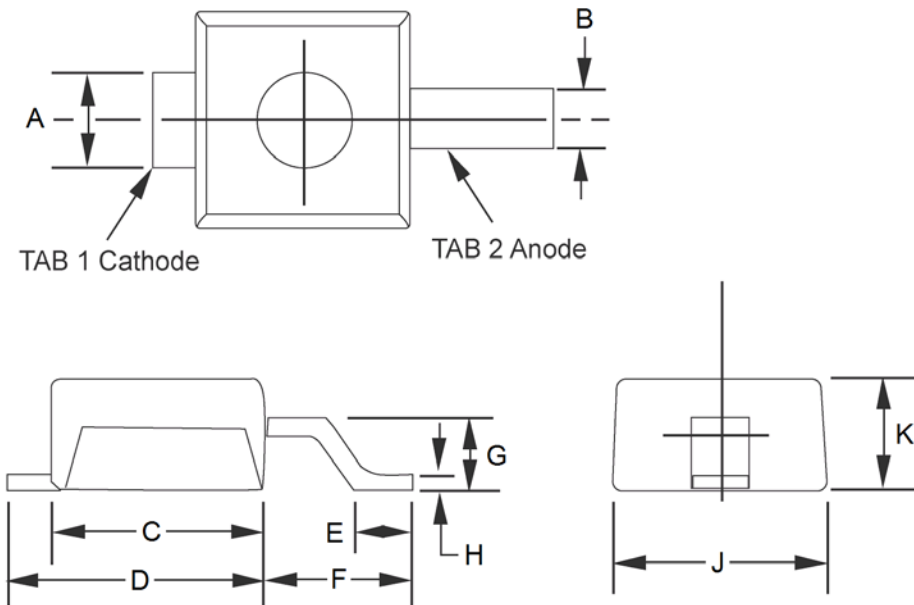


**FIGURE 2**  
Typical Forward Characteristics

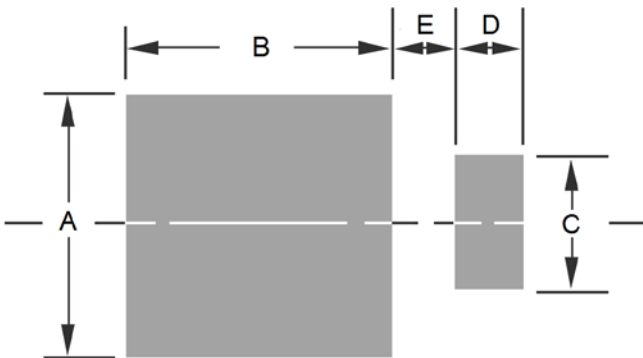
GRAPHS



**FIGURE 3**  
Typical Junction Capacitance

**PACKAGE DIMENSIONS**


Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
<b>A</b>	0.029	0.039	0.73	0.99
<b>B</b>	0.016	0.026	0.40	0.66
<b>C</b>	0.070	0.080	1.77	2.03
<b>D</b>	0.087	0.097	2.21	2.46
<b>E</b>	0.020	0.030	0.50	0.76
<b>F</b>	0.051	0.061	1.29	1.54
<b>G</b>	0.021	0.031	0.53	0.78
<b>H</b>	0.004	0.008	0.10	0.20
<b>J</b>	0.070	0.080	1.77	2.03
<b>K</b>	0.035	0.045	0.89	1.14

**PAD LAYOUT**


Ltr	Dimensions	
	Inch	Millimeters
<b>A</b>	0.100	2.54
<b>B</b>	0.105	2.67
<b>C</b>	0.050	1.27
<b>D</b>	0.030	0.76
<b>E</b>	0.025	0.64

**SCHEMATIC**
