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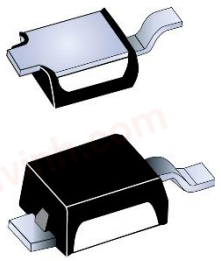
RoHS Compliant

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.



Powermite 1
(DO-216AA)
Package

FEATURES

- Low profile package (<1.1 mm).
- Small footprint: 10 mm^2 (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	ºC
Junction Temperature	T_J	-55 to +100	ºC
Thermal Resistance Junction-to-Lead	$R_{\Theta JL}$	15	ºC/W
Peak Repetitive Reverse Voltage and also Working Peak Reverse Voltage	V_{RRM} V_{RWM} V_R	15	V
Repetitive Peak Surge Current (1)	I_{FSM}	50	A
Maximum Average DC Output Current @ Rated V_R and T_L = 65 ºC	I_O	1.0	A
Voltage Rate of Change @ Rated V_R and T_J = 25 ºC	dv/dt	1000	V/µs
Max Peak Reverse Current (V_{RRM} = 15V, TJ = 25 ºC)	I_{RM}	10	mA
Solder Temperature @ 10 s	T_{SP}	260	ºC

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

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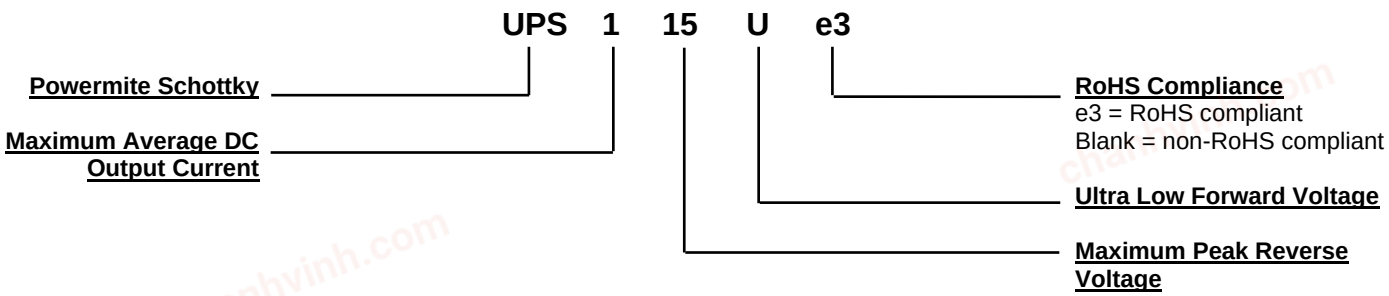
MECHANICAL and PACKAGING

- 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 “S15”.
- 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_F = 1.0 Amps, T_J = +25ºC)	V_F	0.31	Volts
Maximum Instantaneous Reverse Current	(V_R = 15 Vdc, T_J = +25ºC)	I_{RM}	10	mA
Typical Junction Capacitance (T_J = 25ºC, V_R = 5V)		C_J	150	pF

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GRAPHS

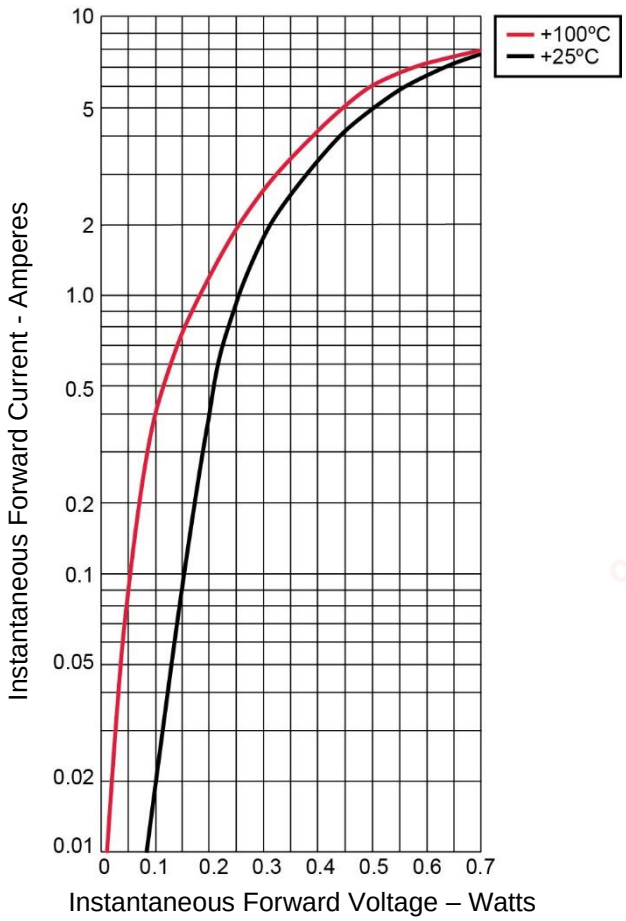

FIGURE 1
Typical Forward Characteristics

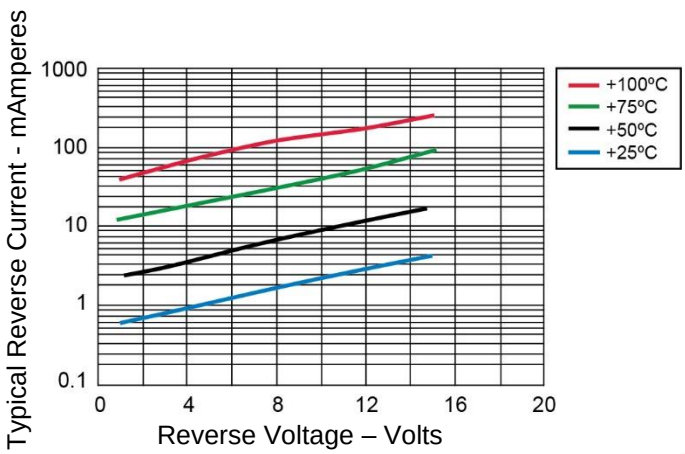

FIGURE 2
Typical Forward Characteristics

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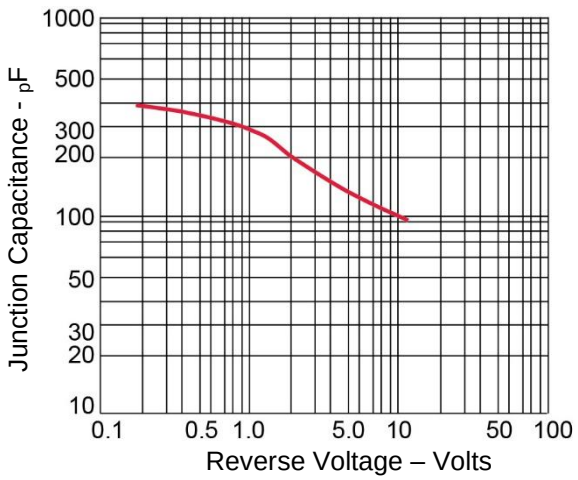

FIGURE 3
Typical Junction Capacitance

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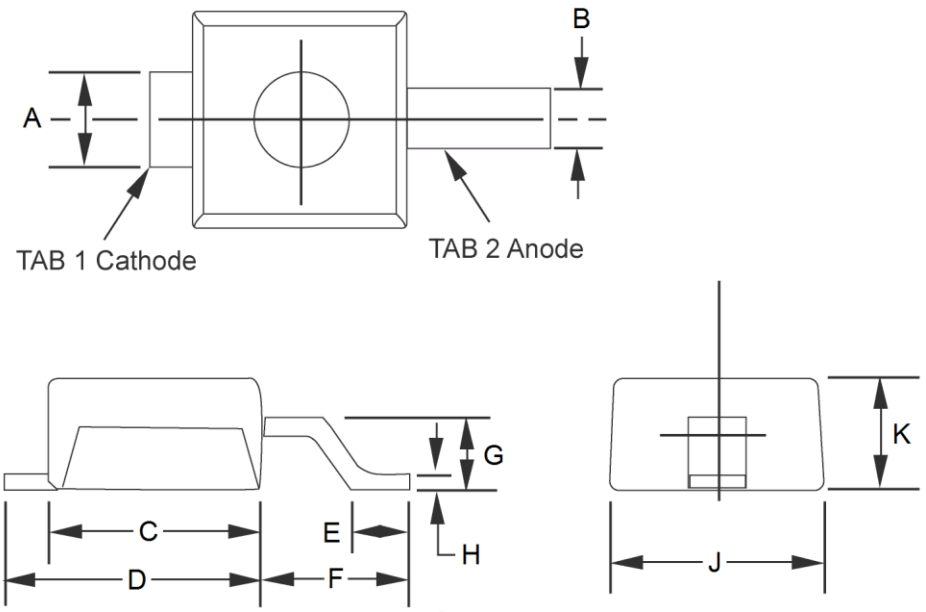
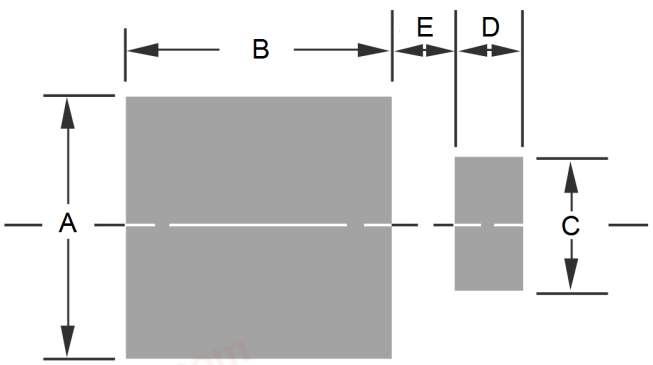
PACKAGE DIMENSIONS



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

PAD LAYOUT



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

SCHEMATIC



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