



## Schottky Barrier Rectifier 1.0 Amp, 20 and 40 Volt

### DESCRIPTION

Single schottky rectifier assembled in Powermite 1 package which features a full metallic bottom that eliminates the possibility of solder flux entrapment during assembly. The package also incorporates a unique locking tab which acts as an efficient heat path from the die to the mounting plane for external heat sinking with very low thermal resistance junction to case (bottom). This product is suitable for use in switching and regulating power supplies and also charge pump circuits.

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

### FEATURES

- Ultra low forward voltage drop.
- Efficient heat path with integral locking bottom metal tab.
- Supplied in 8mm tape and reel.
- RoHS compliant.

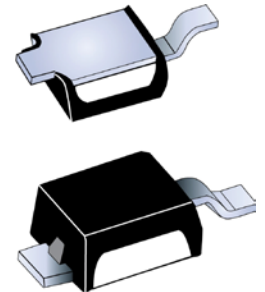
### APPLICATIONS / BENEFITS

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

### MAXIMUM RATINGS @ 25 °C unless otherwise stated

Parameters/Test Conditions	Symbol	Value		Unit
		UPS5817	UPS5819	
Peak Repetitive Reverse Voltage and also Working Peak Reverse Voltage	$V_{RRM}$	20	40	V
DC Blocking Voltage	$V_{RWM}$ $V_R$			
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	V
Junction and Storage Temperature	$T_J$ and $T_{STG}$	-55 to +150		°C
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	15		°C/W
Thermal Resistance Junction-to-Ambient <sup>(1)</sup>	$R_{\theta JA}$	240		°C/W
Average Rectified Output Current @ $T_C = 135$ °C	$I_O$	1.0		A
Repetitive Peak Forward Current	$I_{FRM}$	2.0		A
Surge Peak Forward Current	$I_{FSM}$	50		A
Voltage Rate of Change @ Rated $V_R$ and $T_J = 25$ °C	$dv/dt$	10,000		V/ $\mu$ s
Solder Temperature @ 10 s	$T_{SP}$	260		°C

**Notes:** 1. Mounted on FR-4 PC board using 1 oz copper with recommended minimum foot print.



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

#### **MSC – Lawrence**

6 Lake Street,  
Lawrence, MA 01841  
Tel: 1-800-446-1158 or  
(978) 620-2600  
Fax: (978) 689-0803

#### **MSC – Ireland**

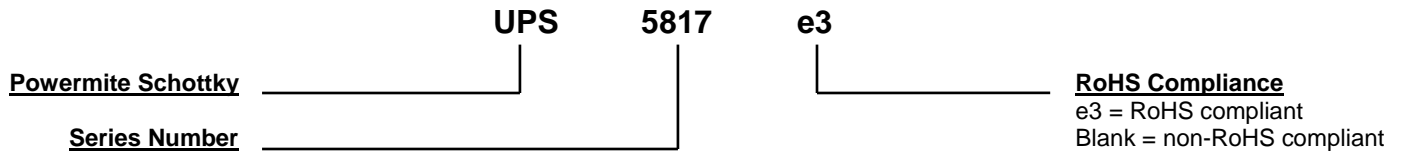
Gort Road Business Park,  
Ennis, Co. Clare, Ireland  
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#### **Website:**

[www.microsemi.com](http://www.microsemi.com)

**MECHANICAL and PACKAGING**

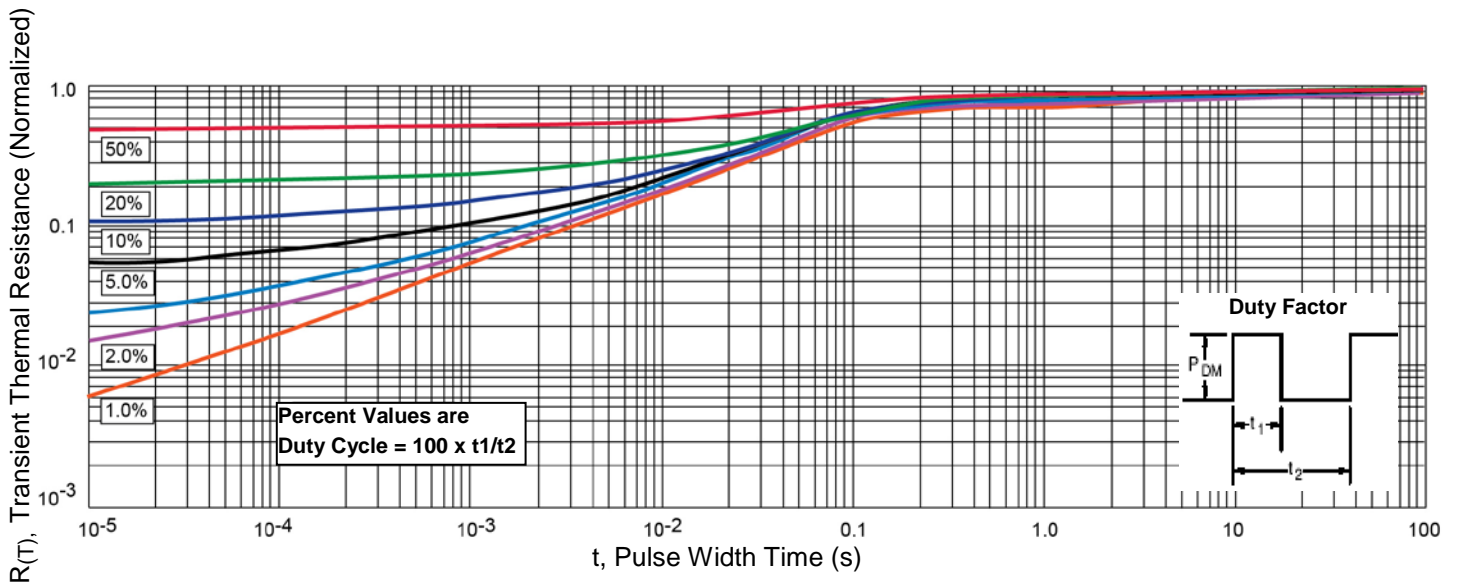
- CASE: Molded epoxy package meets UL94V-0.
- TERMINALS: Copper with annealed matte-tin plating for RoHS compliance. Solderable per MIL-STD-750 method 2026. (Consult factory for tin-lead plating).
- MARKING: Body marked with "S17" or "S19".
- POLARITY: Cathode designated by Tab 1 (bottom).
- TAPE & REEL 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**

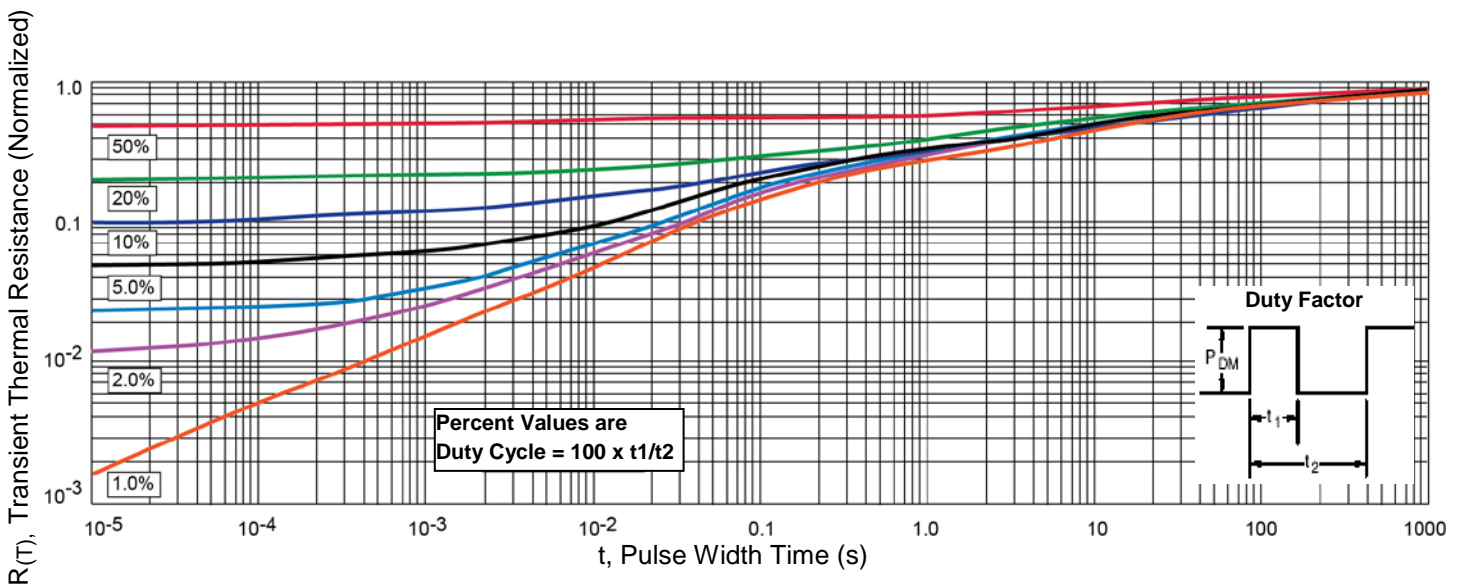
RATING (Conditions)	SYMBOL	VALUE		UNIT
		UPS5817	UPS5819	
Maximum Instantaneous Forward Voltage <sup>(2)</sup> (I <sub>F</sub> = 1.0 A, T <sub>J</sub> = +25 °C)	V <sub>F</sub>	0.45	0.55	Volts
Maximum Instantaneous Reverse Current <sup>(2)</sup> (V <sub>R</sub> = 20 V, T <sub>J</sub> = +25 °C)	I <sub>RM</sub>	1.0	1.0	mA
Typical Junction Capacitance (V <sub>R</sub> = 5V, f = 1 MHz)	C <sub>J</sub>	105	60	pF

**Notes:** 2. Measured with a test pulse of 380 μs to minimize self-heating effect.

GRAPHS

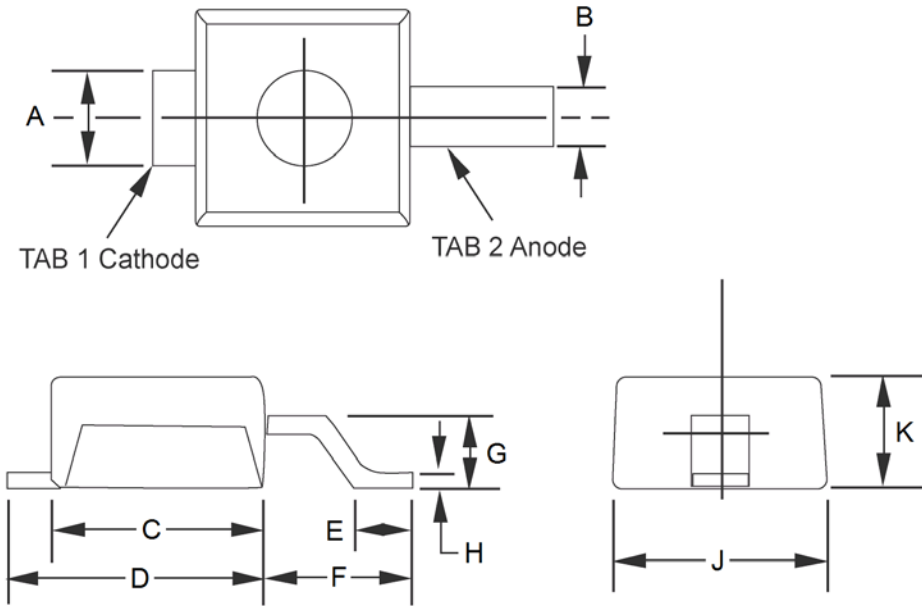


**FIGURE 1**  
Thermal Impedance Junction to Case



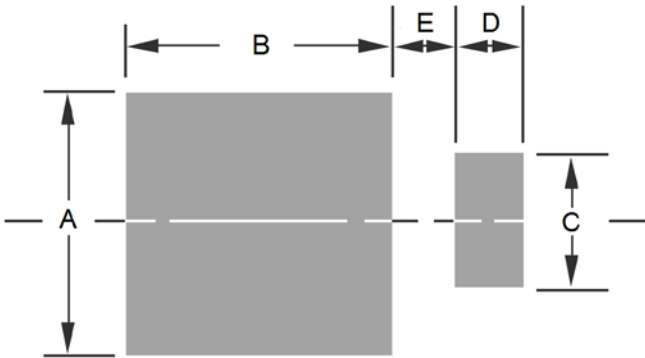
**FIGURE 2**  
Thermal Impedance Junction to Ambient

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

