

# Schottky Barrier Rectifier

## 1N5817 thru 1N5819

Reverse Voltage: 20 to 40V

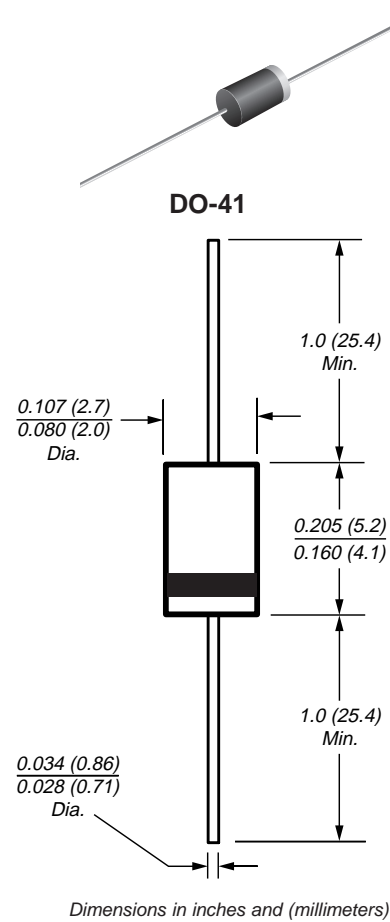
Forward Current: 1.0A

### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low power loss, high efficiency
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- Guardring for overvoltage protection

### Mechanical Data

- Case: JEDEC DO-41 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- High temperature soldering guaranteed: 250°C/10 seconds 0.375" (9.5mm) lead length, 5lbs. (2.3kg) tension
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.34 g



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	1N5817	1N5818	1N5819	Unit
* Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	20	30	40	V
Maximum RMS voltage	V <sub>RMS</sub>	14	21	28	V
* Maximum DC blocking voltage	V <sub>DC</sub>	20	30	40	V
* Maximum non-repetitive peak reverse voltage	V <sub>RSM</sub>	24	36	48	V
* Maximum average forward rectified current 0.375" (9.5mm) lead length at T <sub>L</sub> =90°C	I <sub>F(AV)</sub>	1.0			A
* Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T <sub>L</sub> =70°C	I <sub>FSM</sub>	25			A
Typical thermal resistance – junction-to-ambient (glass) (Note 2)	R <sub>θJA</sub>	130			°C/W
– junction-to-ambient (plastic)	R <sub>θJA</sub>	50			
– junction-to-lead (plastic)	R <sub>θJL</sub>	15			
*Storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +125			°C

### Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	1N5817	1N5818	1N5819	Unit
* Maximum instantaneous forward voltage at 1.0 (Note 1)	V <sub>F</sub>	0.450	0.550	0.600	V
* Maximum instantaneous forward voltage at 3.1 (Note 1)	V <sub>F</sub>	0.750	0.875	0.900	V
* Maximum average reverse current T <sub>A</sub> = 25°C at rated DC blocking voltage (Note 1) T <sub>A</sub> = 100°C	I <sub>R</sub>	1.0 10			mA
Typical junction capacitance at 4.0V, 1.0MHz	C <sub>J</sub>	110			pF

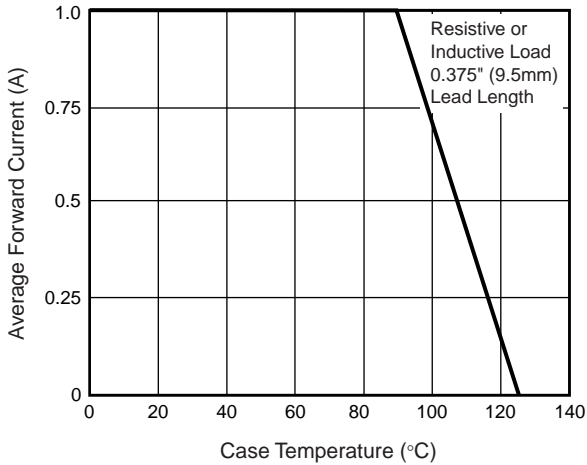
\*JEDEC registered values

Notes: (1) Pulse test: 300µs pulse width, 1% duty cycle

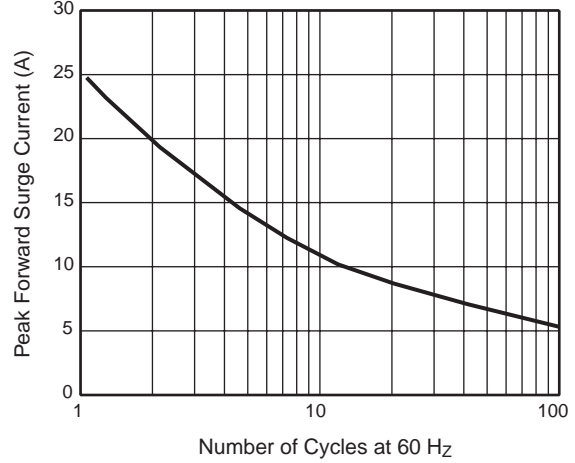
(2) Thermal resistance from junction to lead vertical P.C.B. mounted, 0.375" (9.5mm) lead length with 1.5 x 1.5" (38 x 38mm) copper pads

## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

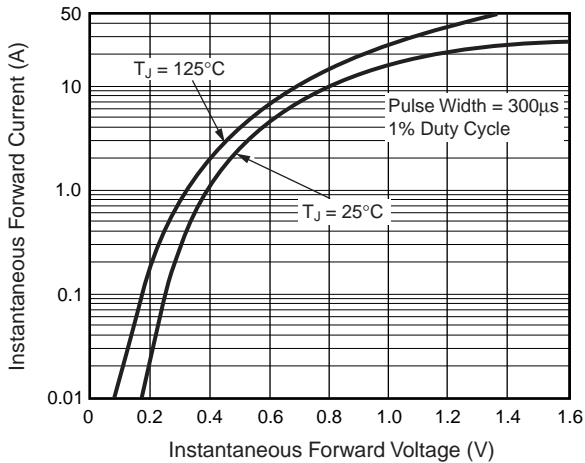
**Fig. 1 - Forward Current Derating Curve**



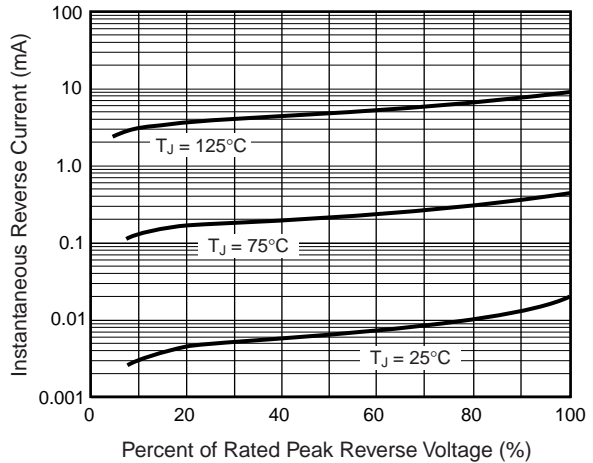
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



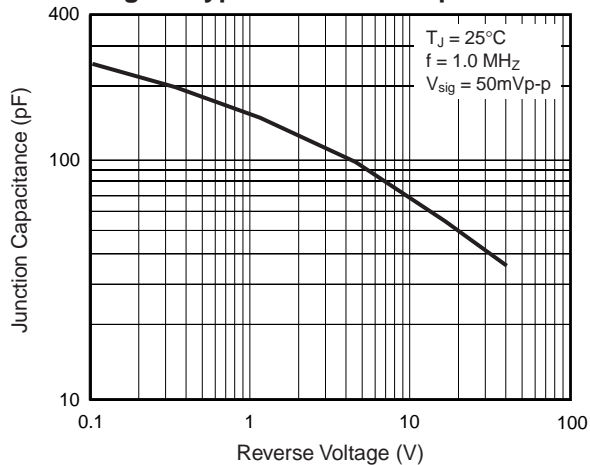
**Fig. 3 - Typical Instantaneous Forward Characteristics**



**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



**Fig. 6 - Typical Transient Thermal Impedance**

