

Schottky Barrier Plastic Rectifier


DO-41 (DO-204AL)

FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


**RoHS
COMPLIANT**

PRIMARY CHARACTERISTICS	
I _{F(AV)}	1.0 A
V _{RRM}	20 V, 30 V, 40 V
I _{FSM}	25 A
V _F	0.45 V, 0.55 V, 0.60 V
T _J max.	125 °C
Package	DO-41 (DO-204AL)
Circuit configuration	Single

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-41 (DO-204AL)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes the cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	1N5817	1N5818	1N5819	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	20	30	40	V
Maximum RMS voltage	V _{RMS}	14	21	28	V
Maximum DC blocking voltage	V _{DC}	20	30	40	V
Maximum non-repetitive peak reverse voltage	V _{RSM}	24	36	48	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length at T _L = 90 °C	I _{F(AV)}	1.0			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	25			A
Voltage rate of change (rated V _R)	dV/dt	10 000			V/μs
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +125			°C

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	1N5817	1N5818	1N5819	UNIT
Maximum instantaneous forward voltage	1.0	V _F ⁽¹⁾	0.450	0.550	0.600	V
Maximum instantaneous forward voltage	3.1	V _F ⁽¹⁾	0.750	0.875	0.900	V
Maximum average reverse current at rated DC blocking voltage	T _A = 25 °C	I _R ⁽¹⁾	1.0			mA
			10			
Typical junction capacitance	4.0 V, 1.0 MHz	C _J	125	110	110	pF

Note

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	1N5817	1N5818	1N5819	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$		50		
	$R_{\theta JL}^{(1)}$		15		°C/W

Note

(1) Thermal resistance from junction to lead vertical PCB mounted, 0.375" (9.5 mm) lead length with 1.5" x 1.5" (38 mm x 38 mm) copper pads

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
1N5819-E3/54	0.332	54	5500	13" diameter paper tape and reel
1N5819-E3/73	0.332	73	3000	Ammo pack packaging

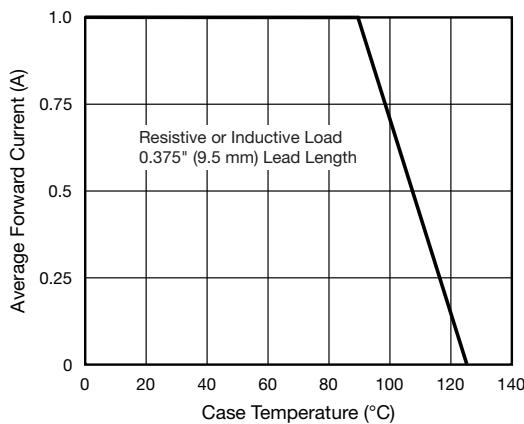
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

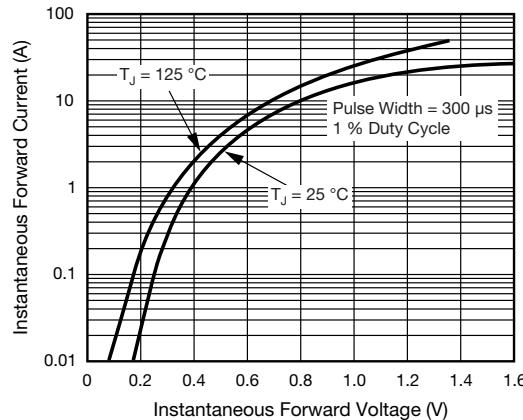


Fig. 3 - Typical Instantaneous Forward Characteristics

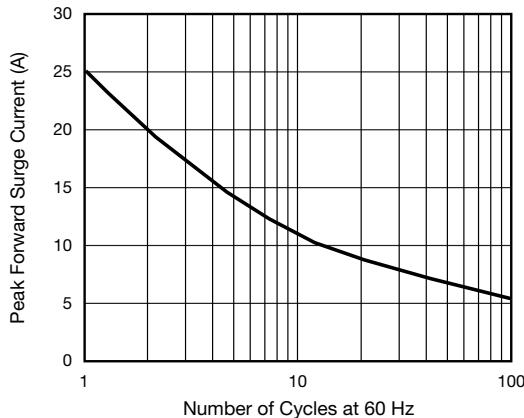


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

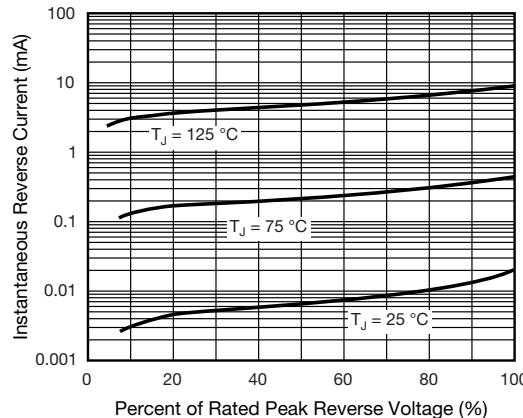


Fig. 4 - Typical Reverse Characteristics

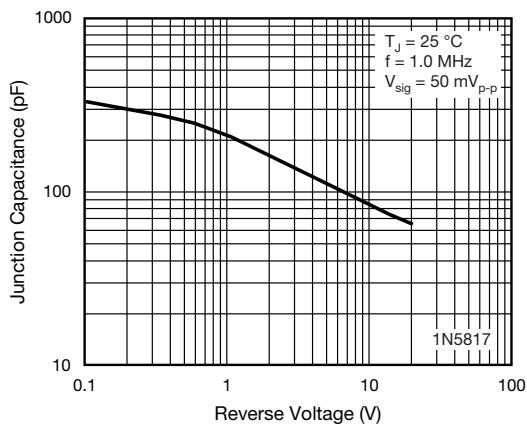


Fig. 5 - Typical Junction Capacitance

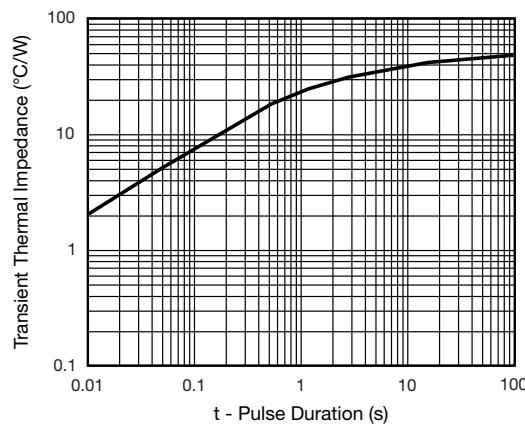


Fig. 7 - Typical Transient Thermal Impedance

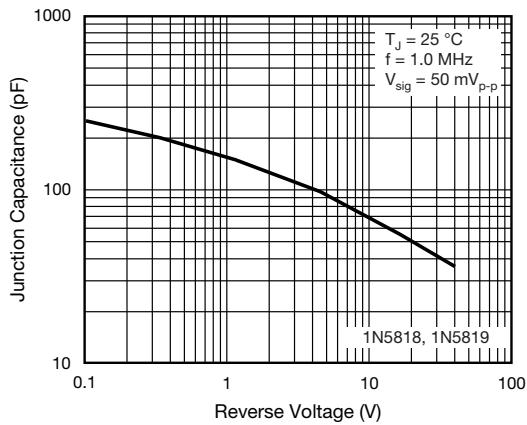
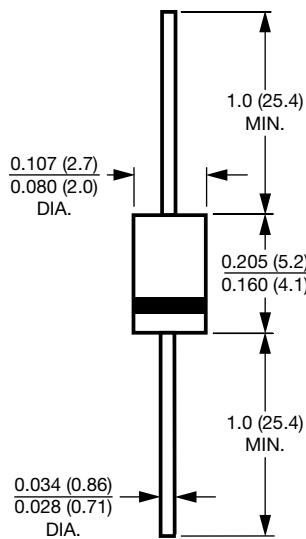


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)





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