

Vishay General Semiconductor

Schottky Barrier Rectifier



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				

FEATURES





· Extremely fast switching

Low forward voltage drop

• High frequency operation

• Solder dip 275 °C max. 10 s, per JESD 22-B106

 Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS

COMPLIAN

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-204AL (DO-41)

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 $T_L = 90 ^{\circ}\text{C}$	I _{F(AV)}	1.0			А	
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	25			А	
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				

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		T _A = 25 °C		1.0			m ^
at rated DC blocking voltage		T _A = 100 °C	IR \''	10			mA mA
Typical junction capacitance	4.0 V, 1.0 MHz		CJ	125	1	10	pF

Note

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
ARAMETER SYMBOL 1N5817 1N5818 1N581		1N5819	UNIT		
Typical thermal resistance	R _{0JA} (1)	50			°C/W
	R ₀ JL (1)	15			

Note

⁽¹⁾ Thermal resistance from junction to lead vertical P.C.B. 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 °C unless otherwise noted)

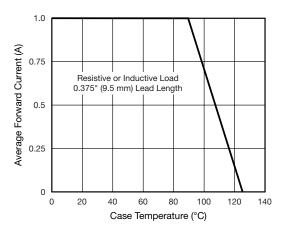


Fig. 1 - Forward Current Derating Curve

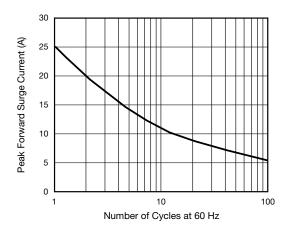


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

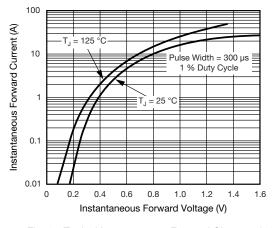


Fig. 3 - Typical Instantaneous Forward Characteristics

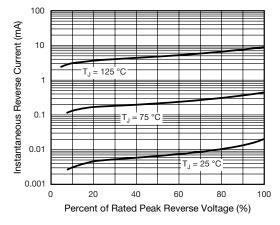


Fig. 4 - Typical Reverse Characteristics



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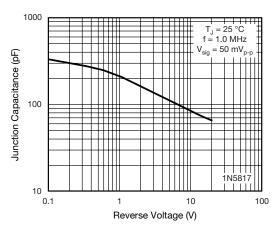


Fig. 5 - Typical Junction Capacitance

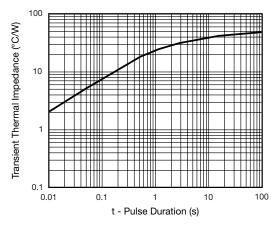


Fig. 7 - Typical Transient Thermal Impedance

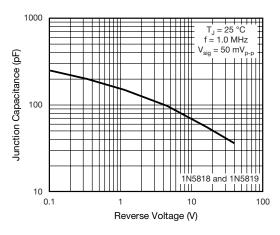


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

0.107 (2.7) 0.080 (2.0) DIA. 1.0 (25.4) MIN. 0.205 (5.2) 0.160 (4.1) 1.0 (25.4) MIN.

DO-204AL (DO-41)

0.034 (0.86) 0.028 (0.71) DIA.



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Revision: 02-Oct-12 Document Number: 91000