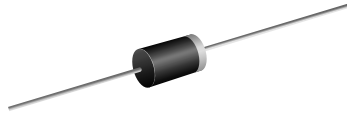


Schottky Barrier Rectifiers


DO-204AL (DO-41)

FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High frequency operation
- Solder dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-204AL (DO-41)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes the cathode end

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

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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 0.375" (9.5 mm) lead length at $T_L = 90\text{ °C}$	$I_{F(AV)}$	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	10000			V/ μ s
Storage temperature range	T_J, T_{STG}	- 65 to + 125			°C



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	1N5817	1N5818	1N5819	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at 1.0	V_F	0.450	0.550	0.600	V
Maximum instantaneous forward voltage ⁽¹⁾	at 3.1	V_F	0.750	0.875	0.900	V
Maximum average reverse current at rated DC blocking voltage ⁽¹⁾	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	I_R	1.0 10			mA
Typical junction capacitance	at 4.0 V, 1.0 MHz	C_J	125	110		pF

Note:

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	1N5817	1N5818	1N5819	UNIT	
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	50 15			$^\circ\text{C/W}$	

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 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

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

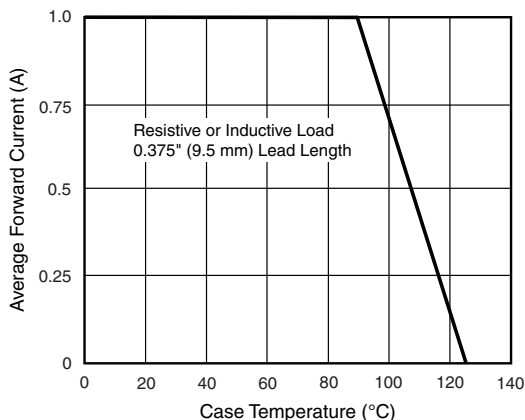


Figure 1. Forward Current Derating Curve

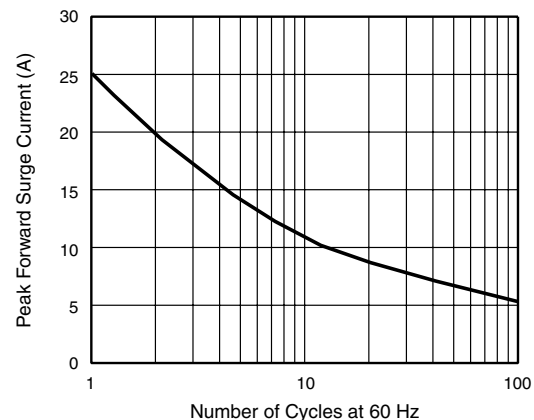


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

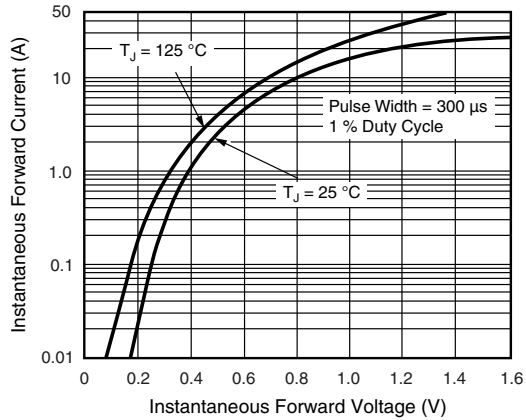


Figure 3. Typical Instantaneous Forward Characteristics

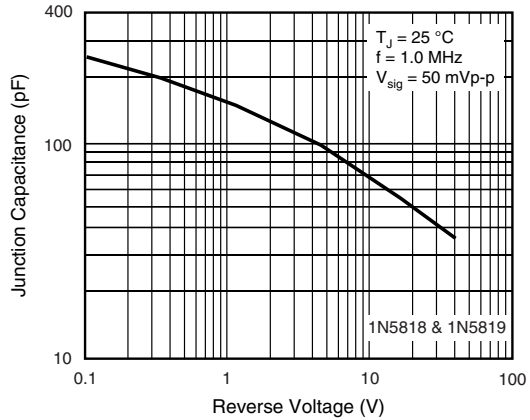


Figure 6. Typical Junction Capacitance

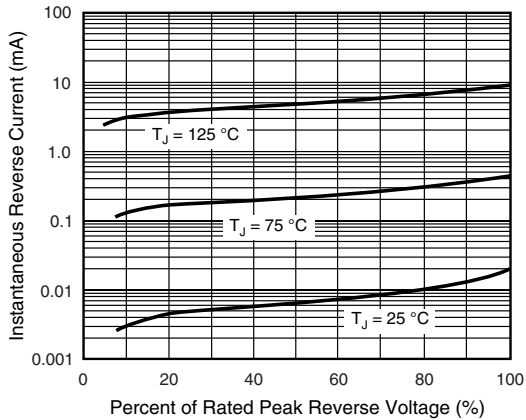


Figure 4. Typical Reverse Characteristics

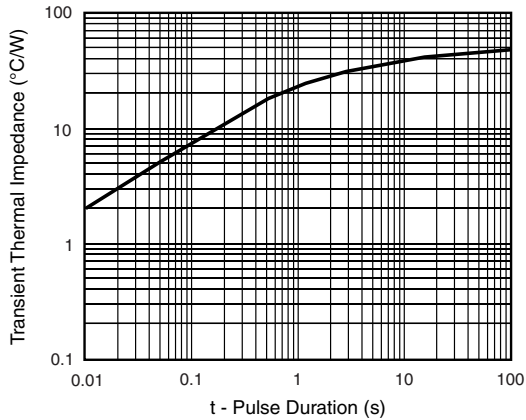


Figure 7. Typical Transient Thermal Impedance

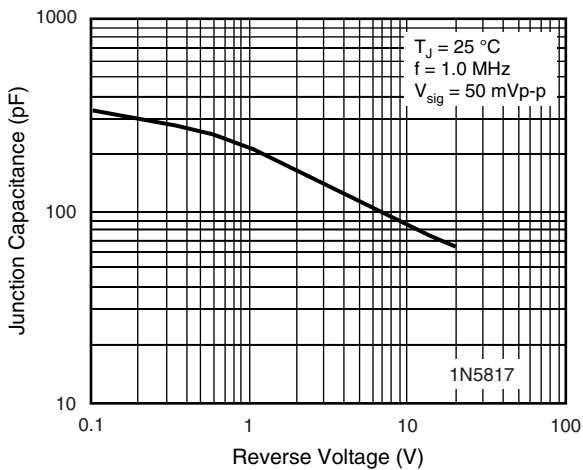
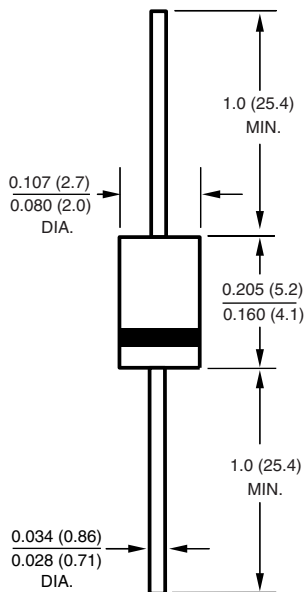


Figure 5. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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