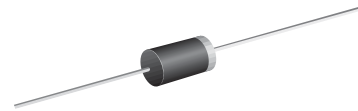




## Schottky Barrier Rectifiers

### Major Ratings and 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



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



### 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

### Typical Applications

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

### Maximum Ratings

$T_A = 25\text{ °C}$  unless otherwise specified

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/ $\mu$ s
Storage temperature range	$T_J, T_{STG}$	- 65 to + 125			°C

## Electrical Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Test condition	Symbol	1N5817	1N5818	1N5819	Unit
Maximum instantaneous forward voltage	at 1.0 <sup>(1)</sup>	$V_F$	0.450	0.550	0.600	V
Maximum instantaneous forward voltage	at 3.1 <sup>(1)</sup>	$V_F$	0.750	0.875	0.900	V
Maximum average reverse current at rated DC blocking voltage <sup>(1)</sup>	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$		1.0 10		mA
Typical junction capacitance	at 4.0 V, 1.0 MHz	$C_J$		110		pF

Notes:

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

## Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	1N5817	1N5818	1N5819	Unit
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$ $R_{\theta JL}$		50 15		$^\circ\text{C/W}$

Notes:

(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

## Ratings and Characteristics Curves

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

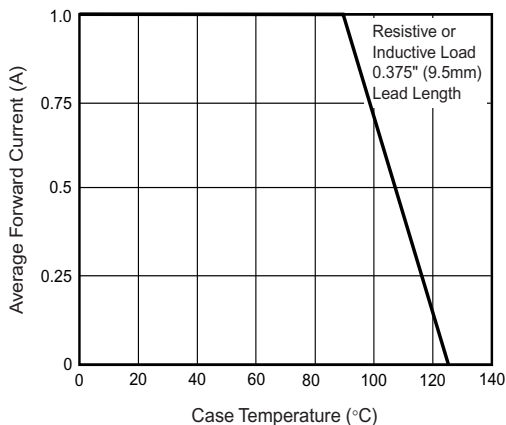


Figure 1. Forward Current Derating Curve

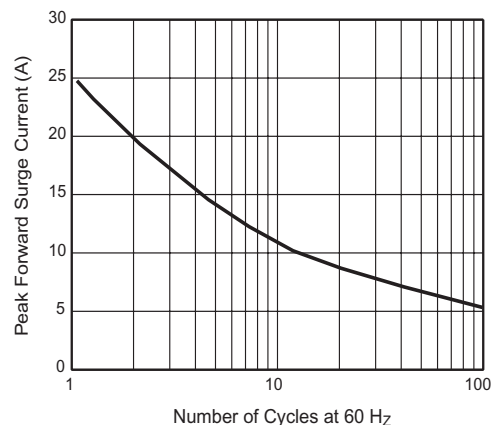


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

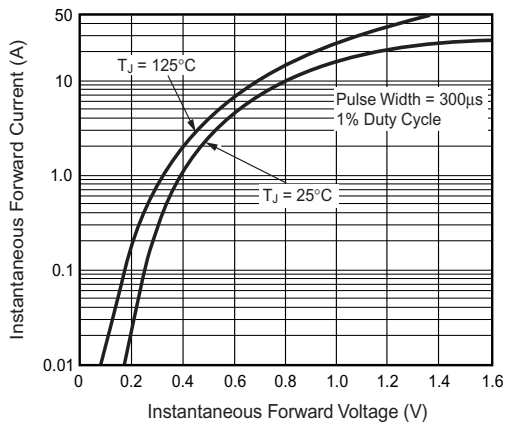


Figure 3. Typical Instantaneous Forward Characteristics

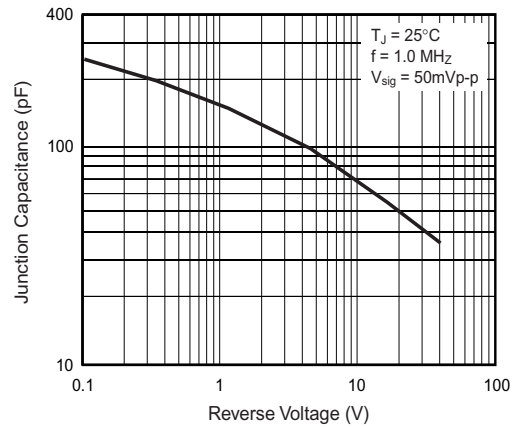


Figure 5. Typical Junction Capacitance

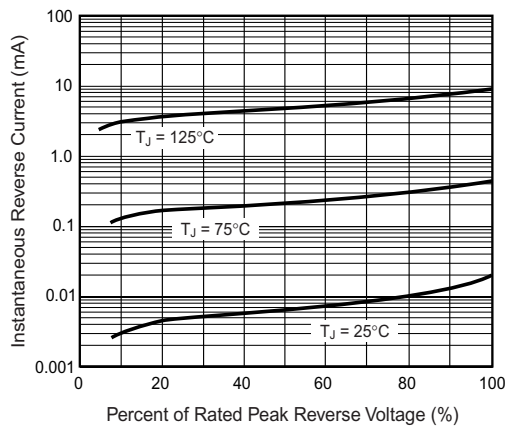


Figure 4. Typical Reverse Characteristics

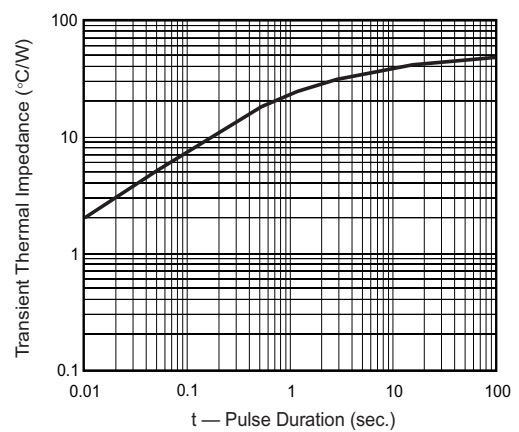
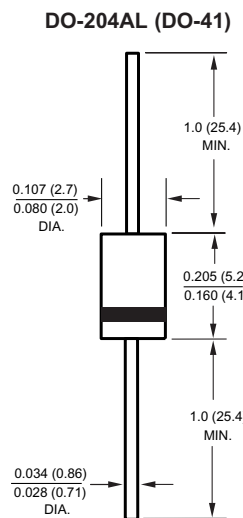


Figure 6. Typical Transient Thermal Impedance

## Package outline dimensions in inches (millimeters)





---

**Notice**

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.