

## Schottky Barrier Rectifier



DO-201AD

### FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High forward surge capability
- 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-201AD

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

$I_{F(AV)}$	3.0 A
$V_{RRM}$	20 V, 30 V, 40 V
$I_{FSM}$	80 A
$V_F$	0.475 V, 0.500 V, 0.525 V
$T_J \text{ max.}$	125 °C

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	1N5820	1N5821	1N5822	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
Non-repetitive peak reverse voltage	$V_{RSM}$	24	36	48	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 95$ °C	$I_{F(AV)}$	3.0			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	80			A
Storage temperature range	$T_J, T_{STG}$	- 65 to + 125			°C

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	1N5820	1N5821	1N5822	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	at 3.0	$V_F$	0.475	0.500	0.525	V
Maximum instantaneous forward voltage <sup>(1)</sup>	at 9.4	$V_F$	0.850	0.900	0.950	V
Maximum average reverse current at rated DC blocking voltage <sup>(1)</sup>	$T_A = 25$ °C $T_A = 100$ °C	$I_R$	2.0 20			mA

**Note:**

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



THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	1N5820	1N5821	1N5822	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$		40		$^\circ\text{C/W}$
	$R_{\theta JL}$		10		

**Note:**

(1) Thermal resistance from junction to lead vertical P.C.B. mounted, 0.500" (12.7 mm) lead length with 2.5 x 2.5" (63.5 x 63.5 mm) copper pad

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
1N5820-E3/54	1.08	54	1400	13" diameter paper tape and reel
1N5820-E3/73	1.08	73	1000	Ammo pack packaging

## RATINGS AND CHARACTERISTICS CURVES

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

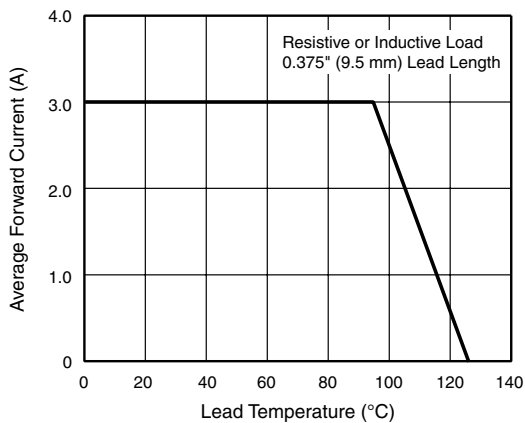


Figure 1. Forward Current Derating Curve

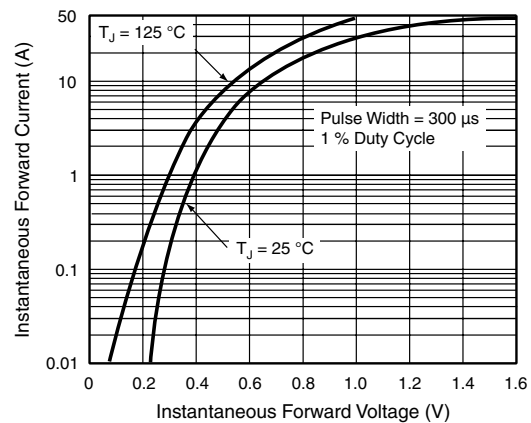


Figure 3. Typical Instantaneous Forward Characteristics

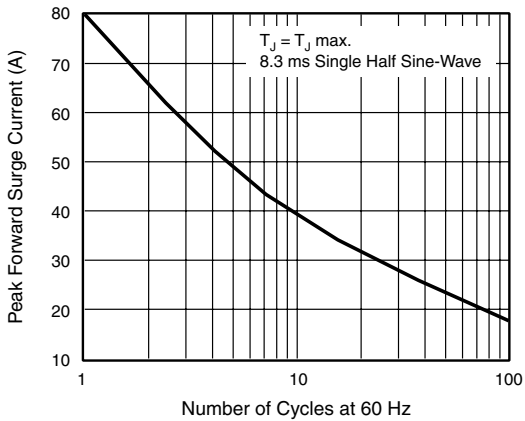


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

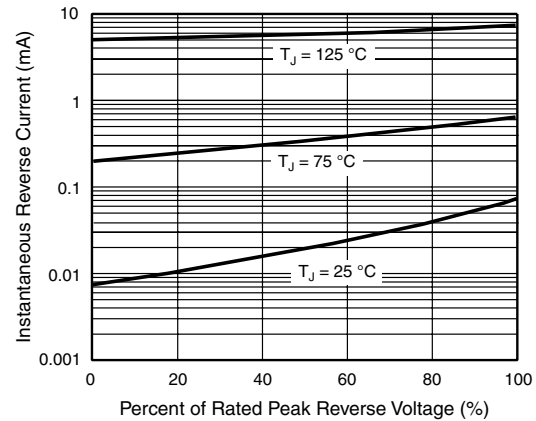


Figure 4. Typical Reverse Characteristics

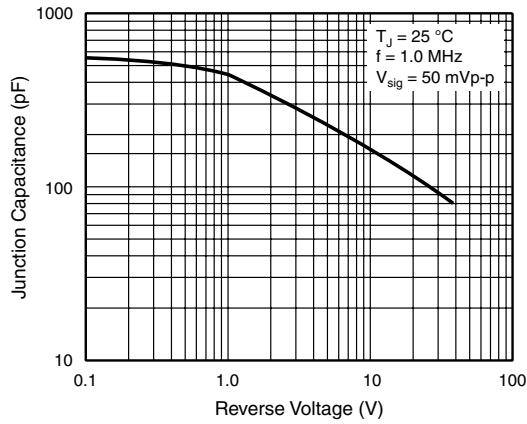


Figure 5. Typical Junction Capacitance

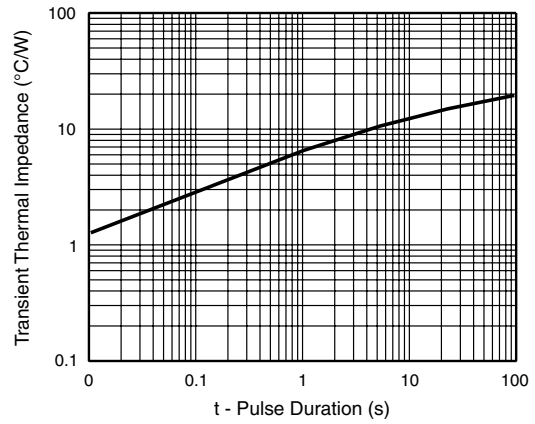
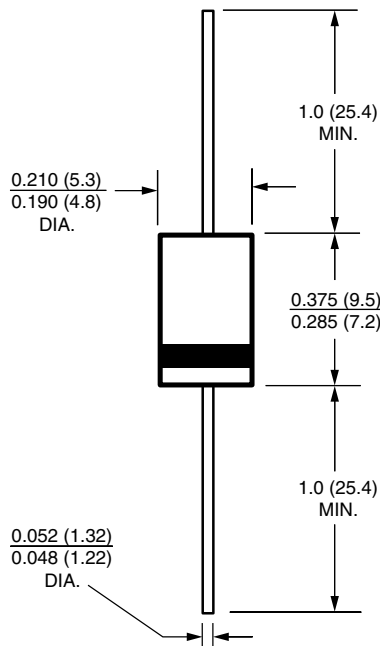


Figure 6. Typical Transient Thermal Impedance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-201AD**





## 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.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Vishay:

[1N5821/1](#) [1N5822/1](#) [1N5820/1](#) [1N5820-E3/54](#) [1N5821-E3/54](#) [1N5822-E3/54](#)