

Vishay General Semiconductor

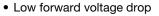
Fast Switching Plastic Rectifier



PRIMARY CHARACTERISTICS						
I _{F(AV)}	1.0 A					
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V					
I _{FSM} 30 A						
t _{rr}	200 ns					
I _R	5.0 μA					
V_{F}	1.2 V					
T_J max.	150 °C					
Package	DO-204AL (DO-41)					
Diode variation	Single die					

FEATURES





Low leakage current

• High forward surge capability

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

 Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>



COMPLIAN

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

Note

• These devices are not AEC-Q101 qualified.

MECHANICAL DATA

Case: DO-204AL, molded epoxy body 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 cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	1N4933	1N4934	1N4935	1N4936	1N4937	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50 100 200 400 600				600	V
Maximum RMS voltage	V _{RMS}	35 70 145 280 420				420	V
Maximum DC blocking voltage	V_{DC}	50 100 200 400 600			600	V	
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T _A = 75 °C	I _{F(AV)}	1.0					А
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30				Α	
Maximum reverse recovery current	I _{RM}	2.0				Α	
Operating junction and storage temperature range	T _J , T _{STG}	- 50 to + 150					°C

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	1N4933	1N4934	1N4935	1N4936	1N4937	UNIT
Maximum instantaneous forward voltage	1.0 A		V _F	1.2					V
Maximum DC reverse current		T _A = 25 °C	I _R	5.0 100					μА
at rated DC blocking voltage		T _A = 100 °C	чК						
Maximum reverse recovery time	$I_F = 1.0 \text{ A}, V_R = 30 \text{ V},$ $dI/dt = 50 \text{ A}/\mu\text{s}, I_{rr} = 10 \% I_{RM}$		t _{rr}	200				ns	
Typical junction capacitance	4.0 V, 1 MHz		CJ	12				pF	



www.vishay.com

Vishay General Semiconductor

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	1N4933	1N4934	1N4935	1N4936	1N4937	UNIT
Typical thermal resistance	R _{0JA} (1)	55					°C/W
Typical tricimal resistance	R _{0JL} (1)	25				O/ VV	

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
1N4933-E3/54	0.33	54	5500	13" diameter paper tape and reel				
1N4933-E3/73	0.33	73	3000	Ammo pack packaging				

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

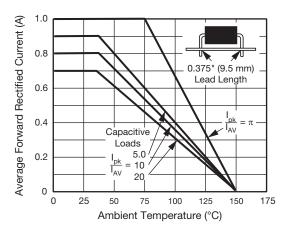


Fig. 1 - Forward Current Derating Curves

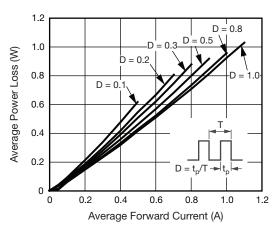


Fig. 2 - Forward Power Loss Characteristics

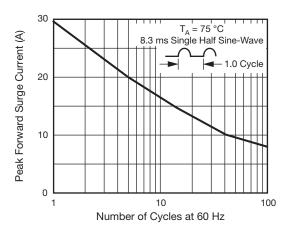


Fig. 3 - Maximum Non-repetitive Peak Forward Surge Current

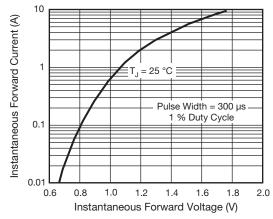


Fig. 4 - Typical Instantaneous Forward Characteristics



www.vishay.com

Vishay General Semiconductor

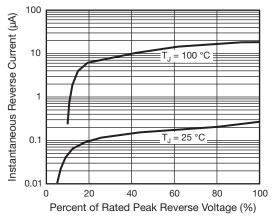


Fig. 5 - Typical Reverse Characteristics

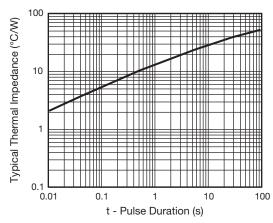


Fig. 7 - Typical Transient Thermal Impedance

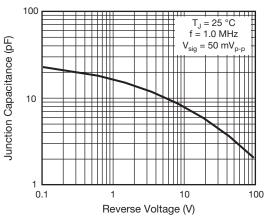
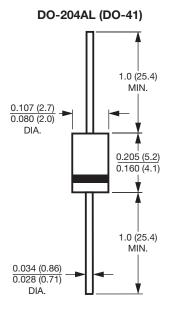


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Note

• Lead diameter is $\frac{0.026 (0.66)}{0.023 (0.58)}$ for suffix "E" part numbers



Legal Disclaimer Notice

Vishay

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.