

1N5391, 1N5392, 1N5393, 1N5394, 1N5395, 1N5396, 1N5397, 1N5398, 1N5399

www.vishay.com

Vishay General Semiconductor

General Purpose Plastic Rectifier



PRIMARY CHARACTERISTICS								
I _{F(AV)}	1.5 A							
V _{RRM}	50 V, 100 V, 200 V, 300 V, 400 V, 500 V, 600 V, 800 V, 1000 V							
I _{FSM}	50 A							
V _F	1.4 V							
I _R	5.0 μA							
T _J max.	150 °C							
Package	DO-41 (DO-204AL)							
Circuit configuration	Single							

FEATURES

- Low forward voltage drop
- 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 www.vishav.com/doc?99912

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

MECHANICAL DATA

Case: DO-41 (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	1N5391	1N5392	1N5393	1N5394	1N5395	1N5396	1N5397	1N5398	1N5399	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	300	400	500	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	210	280	350	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	300	400	500	600	800	1000	V
Maximum average forward rectified current 0.500" (12.7 mm) lead length at T _L = 70 °C	I _{F(AV)}		1.5							А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}		50							А	
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_L = 70$ °C	I _{R(AV)}	300							μA		
Operation junction and storage temperature range	T _J , T _{STG}				-	50 to +15	0				°C

1N5391, 1N5392, 1N5393, 1N5394, 1N5395, 1N5396, 1N5397, 1N5398, 1N5399

www.vishay.com

Vishay General Semiconductor

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)													
PARAMETER	TEST C	CONDITIONS	SYMBOL	1N5391	1N5392	1N5393	1N5394	1N5395	1N5396	1N5397	1N5398	1N5399	UNIT
Maximum instantaneous forward voltage	1.5 A	T _A = 70 °C	V _F	1.4					•	٧			
Maximum DC reverse		T _A = 25 °C		I _R 300									
current at rated DC blocking voltage		T _A = 150 °C								- μA			
Typical reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	A, I _R = 1.0 A, 25 A	t _{rr}	2.0						μs			
Typical junction capacitance	4.0 V, 1	l MHz	CJ	15					pF				

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	YMBOL 1N5391 1N5392 1N5393 1N5394 1N5395 1N5396 1N5397 1N5398 1N5399 UNI							UNIT	
Typical thermal resistance	R _{θJA} ⁽¹⁾		55							°C/W
Typical thermal resistance	R ₀ JL (1)		25						C/VV	

Note

⁽¹⁾ Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
1N5391-E3/54	0.336	54	5500	13" diameter paper tape and reel					
1N5391-E3/73	0.336	73	3000	Ammo pack packaging					

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

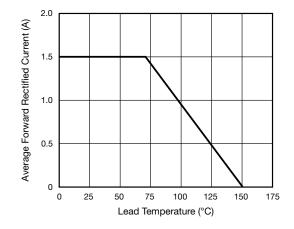


Fig. 1 - Forward Current Derating Curve

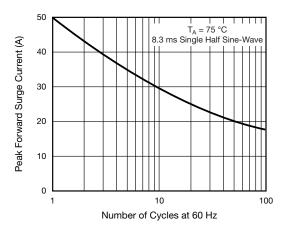


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

www.vishay.com

Vishay General Semiconductor

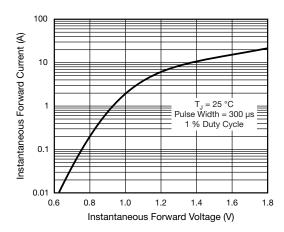


Fig. 3 - Typical Instantaneous Forward Characteristics

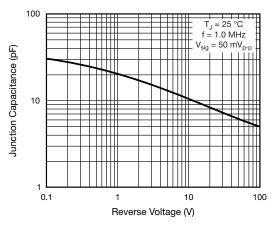


Fig. 5 - Typical Junction Capacitance

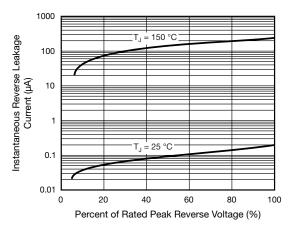


Fig. 4 - Typical Reverse Characteristics

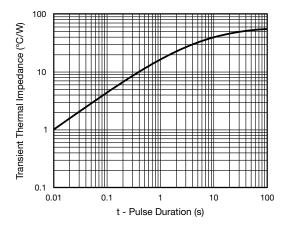
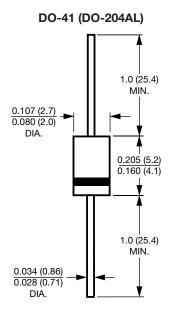


Fig. 6 - Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. 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.