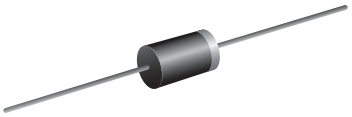
Glass Passivated Junction Fast Switching Plastic Rectifier

SUPERECTIFIER®



DO-41 (DO-204AL)

FEATURES

- Superectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current, typical I_R less than 0.2 µA
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

High voltage rectification of G2 grid CRT and TV, snubber circuit of camera flash.

MECHANICAL DATA

Case: DO-41 (DO-204AL), molded epoxy over glass 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.5 A
V_{RRM}	1200 V to 2000 V
I_{FSM}	20 A
V_F	1.8 V
t_{rr}	300 ns
I_R	5.0 µA
T_J max.	175 °C
Package	DO-41 (DO-204AL)
Circuit configuration	Single

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

PARAMETER	SYMBOL	RGP02-12E	RGP02-14E	RGP02-15E	RGP02-16E	RGP02-17E	RGP02-18E	RGP02-20E	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1200	1400	1500	1600	1700	1800	2000	V
Maximum RMS voltage	V_{RMS}	840	980	1050	1120	1190	1260	1400	V
Maximum DC blocking voltage	V_{DC}	1200	1400	1500	1600	1700	1800	2000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T_A = 55 °C	$I_{F(AV)}$	0.5							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated	I_{FSM}	20							A
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175							°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	RGP02-12E	RGP02-14E	RGP02-15E	RGP02-16E	RGP02-17E	RGP02-18E	RGP02-20E	UNIT
Maximum instantaneous forward voltage	0.1 A		V_F	1.8							V
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	5.0							μA
		T_A = 125 °C		50							
Maximum reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	300							ns

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	RGP02-12E	RGP02-14E	RGP02-15E	RGP02-16E	RGP02-17E	RGP02-18E	RGP02-20E	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	65							°C/W
	$R_{\theta JL}$ (1)	30							

Note

(1) Thermal resistance from junction to ambient and from junction to lead 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
RGP02-12E-E3/54	0.24	54	5500	13" diameter paper tape and reel
RGP02-12E-E3/73	0.24	73	3000	Ammo pack packaging

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

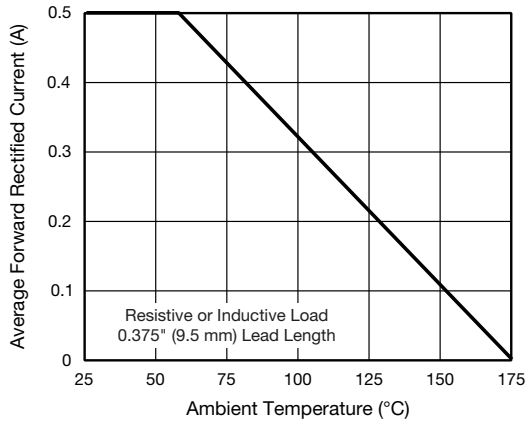


Fig. 1 - Forward Current Derating Curve

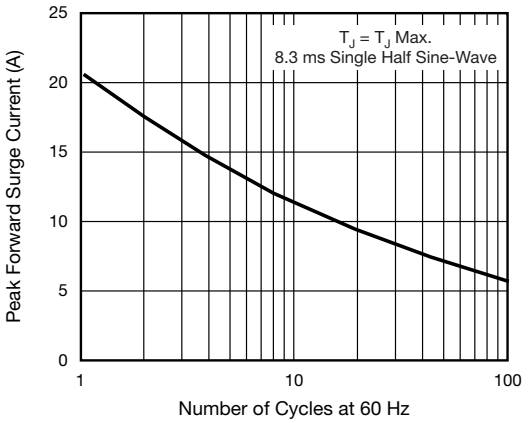


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

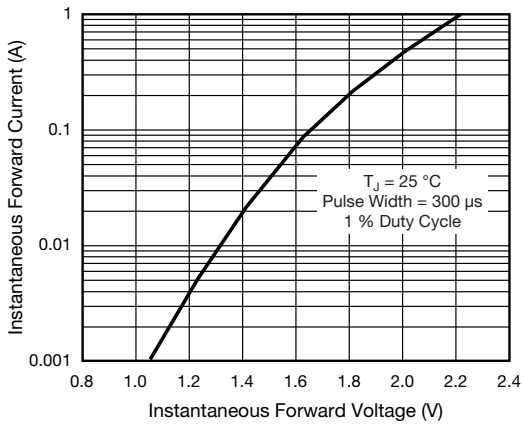


Fig. 3 - Typical Instantaneous Forward Characteristics

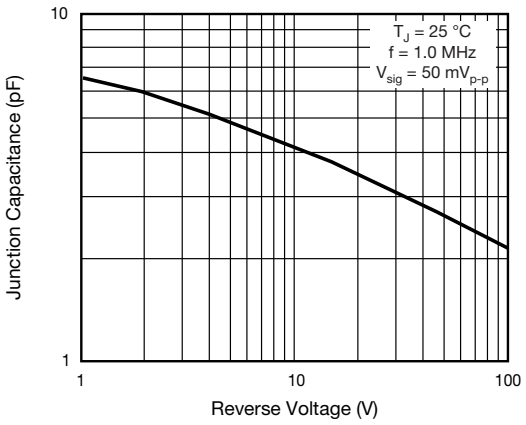


Fig. 5 - Typical Junction Capacitance

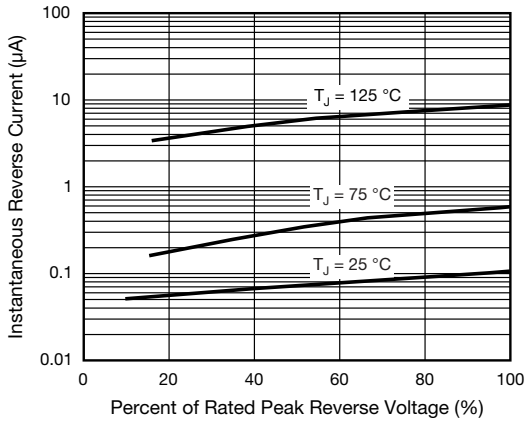
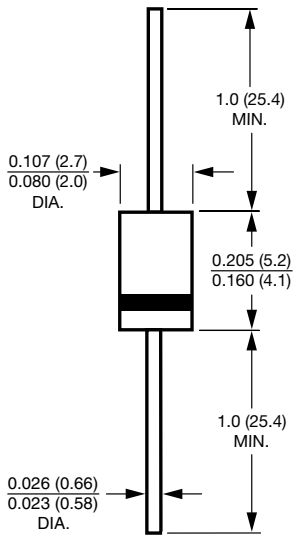


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)



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.