

Glass Passivated Junction Fast Switching Plastic Rectifier

SUPERECTIFIER®

DO-204AL (DO-41)
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-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-204AL (DO-41)
Diode variation	Single die

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)									
PARAMETER	SYMBOL	RGPO2-12E	RGPO2-14E	RGPO2-15E	RGPO2-16E	RGPO2-17E	RGPO2-18E	RGPO2-20E	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 ($T_A = 25\text{ }^\circ\text{C}$ 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	$T_A = 25\text{ }^\circ\text{C}$	I_R	5.0							μA
	$T_A = 125\text{ }^\circ\text{C}$		50							
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$	t_{rr}	300							ns

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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							$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

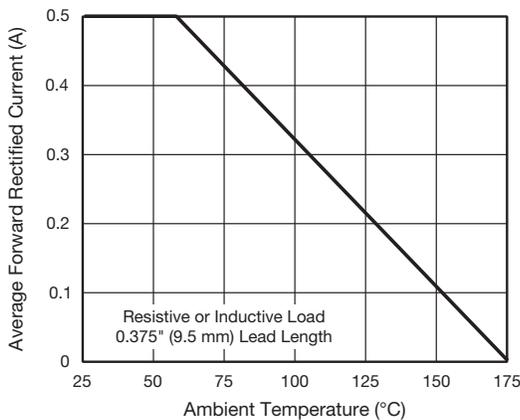


Fig. 1 - Forward Current Derating Curve

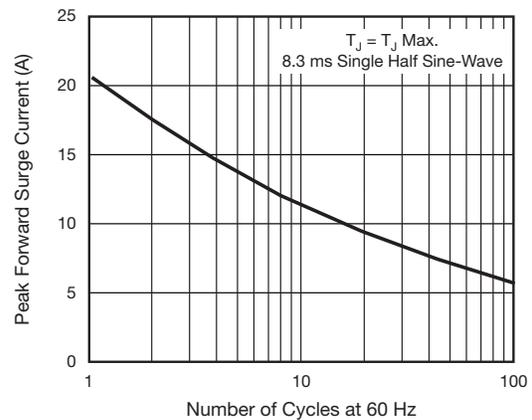


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

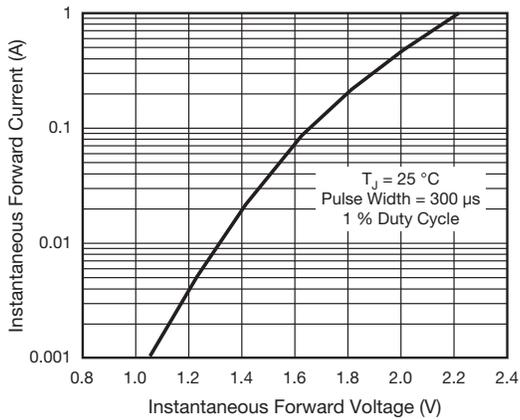


Fig. 3 - Typical Instantaneous Forward Characteristics

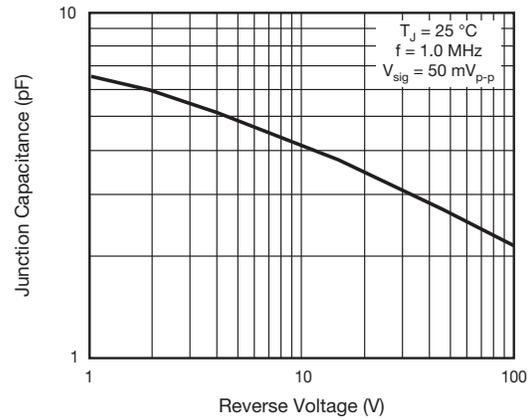


Fig. 5 - Typical Junction Capacitance

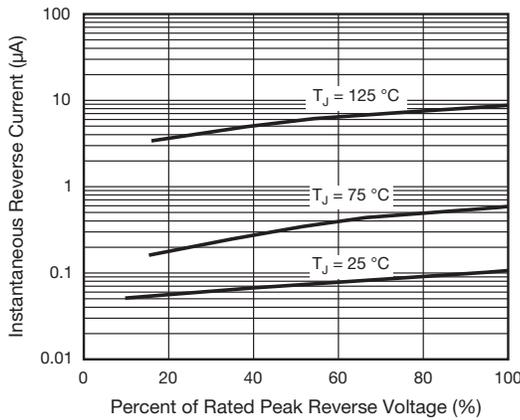
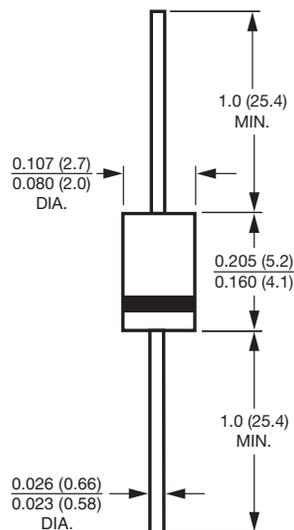


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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