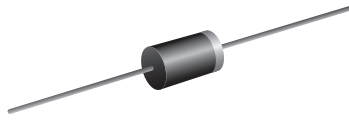


# Glass Passivated Junction Fast Switching Plastic Rectifier

**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  $\mu\text{A}$
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS  
COMPLIANT**
**TYPICAL APPLICATIONS**

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

**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  
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 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
$t_r$	300 ns
$I_R$	5.0 $\mu\text{A}$
$T_J$ max.	175 °C
Package	DO-204AL (DO-41)
Diode variation	Single die

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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 $T_A = 55\text{ °C}$	$I_{F(AV)}$	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							$\mu\text{A}$
	$T_A = 125\text{ }^\circ\text{C}$		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
RGP02-12EHE3/54 (1)	0.24	54	5500	13" diameter paper tape and reel
RGP02-12EHE3/73 (1)	0.24	73	3000	Ammo pack packaging

**Note**

(1) AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

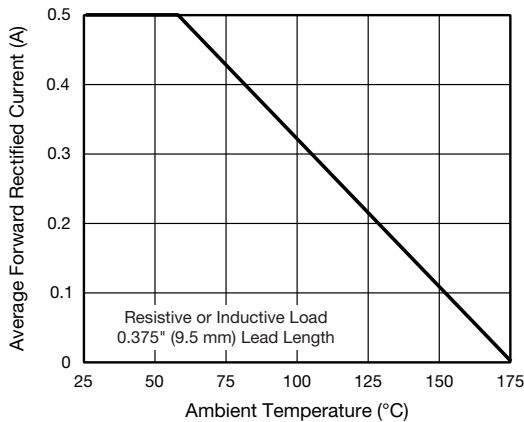


Fig. 1 - Forward Current Derating Curve

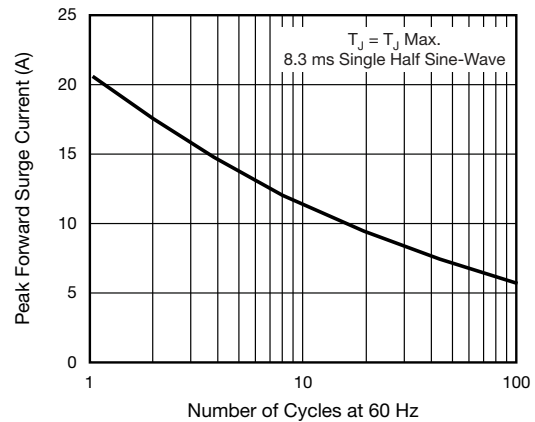


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

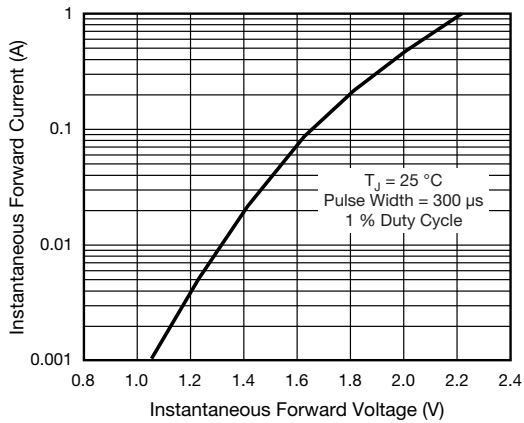


Fig. 3 - Typical Instantaneous Forward Characteristics

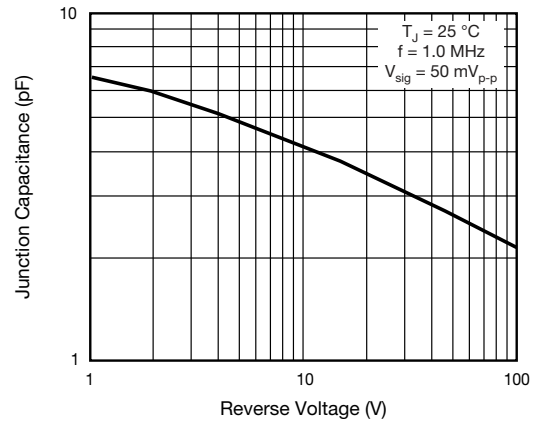


Fig. 5 - Typical Junction Capacitance

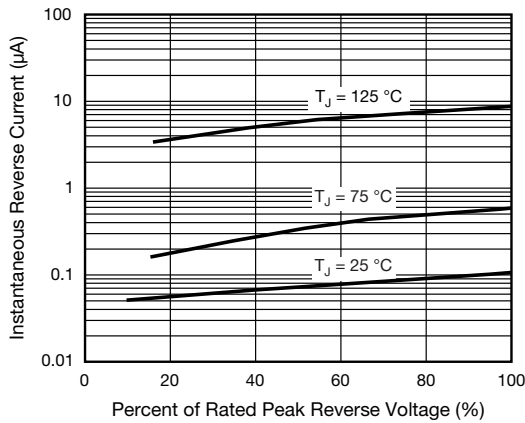
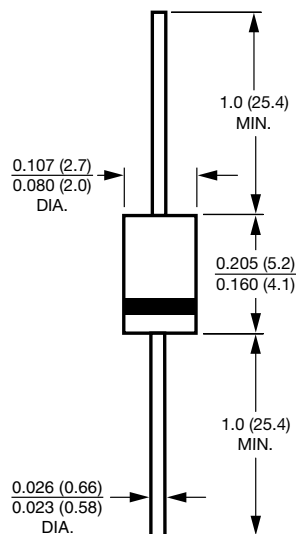


Fig. 4 - Typical Reverse Characteristics

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

**DO-204AL (DO-41)**





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