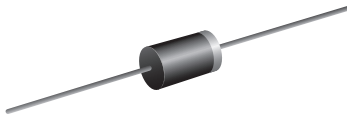




## Glass Passivated Junction Fast Switching Plastic Rectifier

SUPERECTIFIER®



DO-204AL (DO-41)

### FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current
- 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

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

### 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	
$I_{F(AV)}$	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 $\mu$ A
$V_F$	1.2 V
$T_J$ max.	175 °C
Package	DO-204AL (DO-41)
Diode variation	Single die

MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	1N4933GP	1N4934GP	1N4935GP	1N4936GP	1N4937GP	UNIT	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	V	
Maximum RMS voltage	$V_{RMS}$	35	70	145	280	420	V	
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	V	
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 75\text{ }^\circ\text{C}$	$I_{F(AV)}$	1.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30						A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175						°C



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	1N4933GP	1N4934GP	1N4935GP	1N4936GP	1N4937GP	UNIT	
Maximum instantaneous forward voltage	1.0 A	V <sub>F</sub>	1.2						V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	I <sub>R</sub>	5.0						μA
	T <sub>A</sub> = 125 °C		100						
Maximum reverse recovery time	I <sub>F</sub> = 1.0 A, V <sub>R</sub> = 30 V	t <sub>rr</sub>	200						ns
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>	15						pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	1N4933GP	1N4934GP	1N4935GP	1N4936GP	1N4937GP	UNIT	
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	55						°C/W

**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
1N4933GP-E3/54	0.336	54	5500	13" diameter paper tape and reel
1N4933GP-E3/73	0.336	73	3000	Ammo pack packaging
1N4933GPHE3/54 <sup>(1)</sup>	0.336	54	5500	13" diameter paper tape and reel
1N4933GPHE3/73 <sup>(1)</sup>	0.336	73	3000	Ammo pack packaging

**Note**

(1) AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

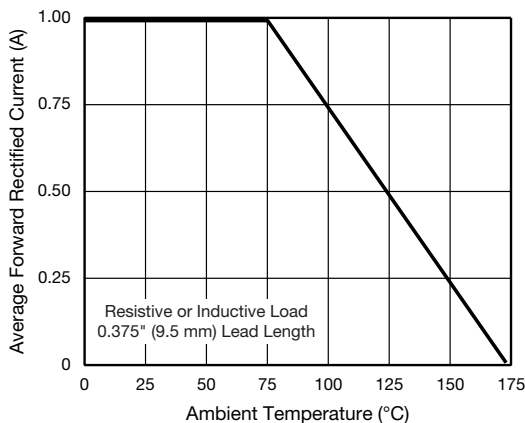


Fig. 1 - Forward Current Derating Curve

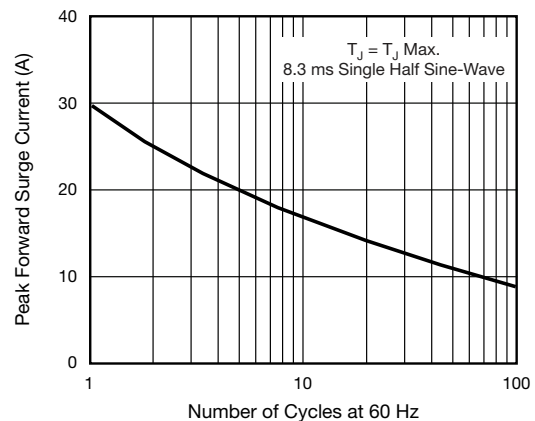


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

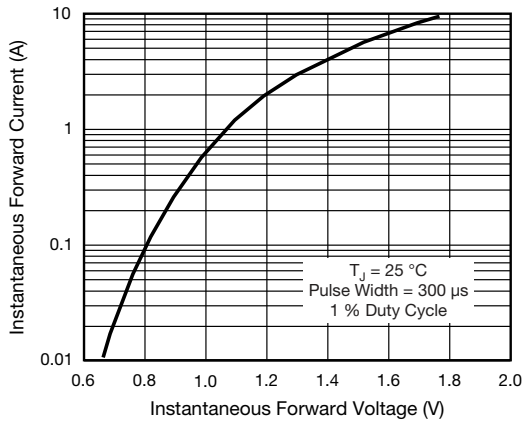


Fig. 3 - Typical Instantaneous Forward Characteristics

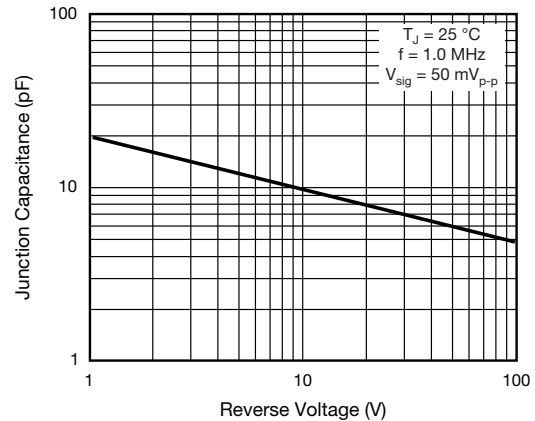


Fig. 5 - Typical Junction Capacitance

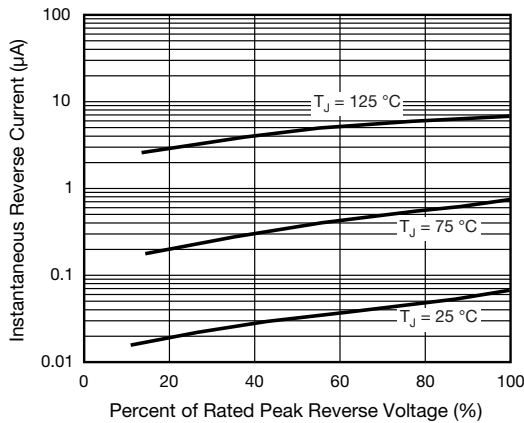


Fig. 4 - Typical Reverse Characteristics

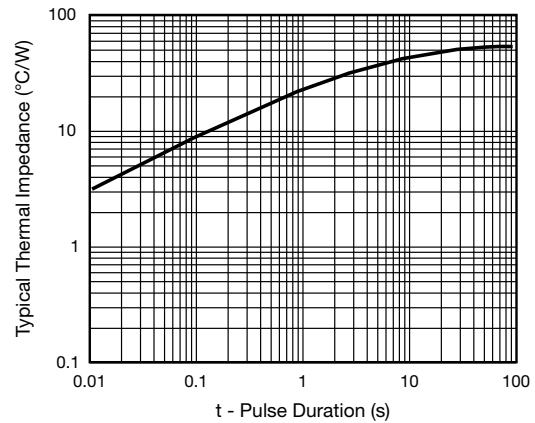
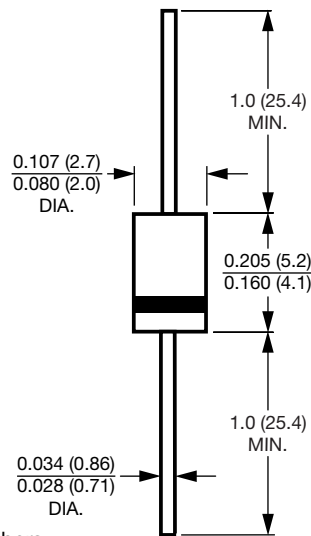


Fig. 6 - Typical Transient Thermal Impedance

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

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



**Note**

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



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