

Glass Passivated Junction Fast Switching Plastic Rectifier



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


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 μ A
V_F	1.2 V
T_J max.	175 °C
Package	DO-204AL (DO-41)
Diode variation	Single die

MAXIMUM RATINGS ($T_A = 25$ °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 $T_A = 75$ °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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	1N4933GP	1N4934GP	1N4935GP	1N4936GP	1N4937GP	UNIT
Maximum instantaneous forward voltage	1.0 A		V_F	1.2					
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25^\circ\text{C}$	I_R	5.0					
		$T_A = 125^\circ\text{C}$		100					
Maximum reverse recovery time	$I_F = 1.0 \text{ A}$, $V_R = 30 \text{ V}$		t_{rr}	200					
Typical junction capacitance	4.0 V, 1 MHz		C_J	15					

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	1N4933GP	1N4934GP	1N4935GP	1N4936GP	1N4937GP	UNIT	
Typical thermal resistance	$R_{\theta JA}^{(1)}$	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 ⁽¹⁾	0.336	54	5500	13" diameter paper tape and reel
1N4933GPHE3/73 ⁽¹⁾	0.336	73	3000	Ammo pack packaging

Note

(1) AEC-Q101 qualified

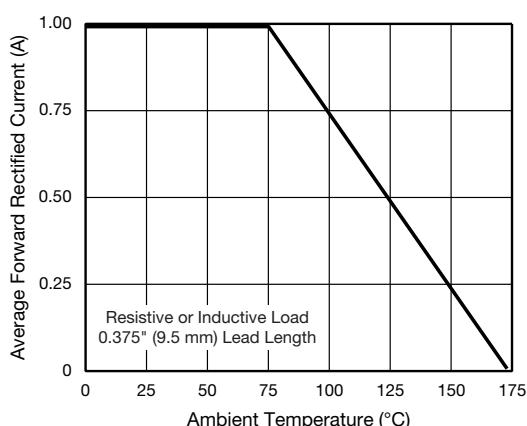
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

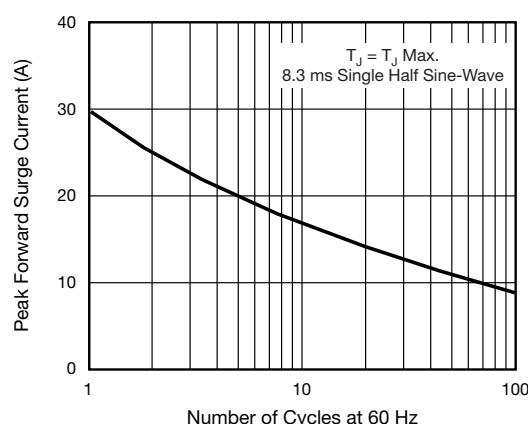


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

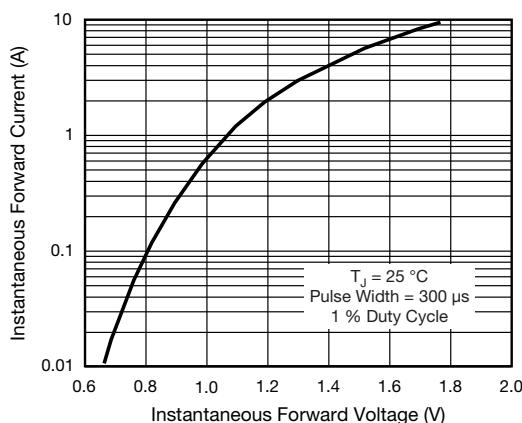


Fig. 3 - Typical Instantaneous Forward Characteristics

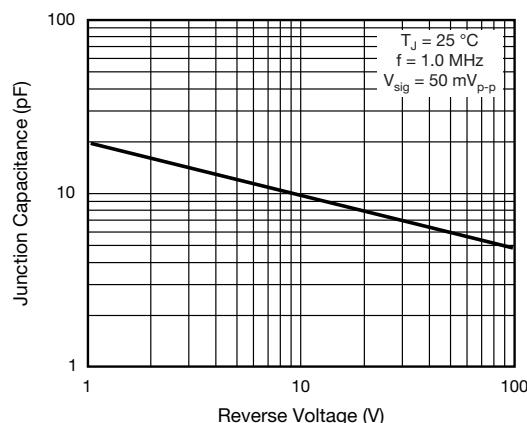


Fig. 5 - Typical Junction Capacitance

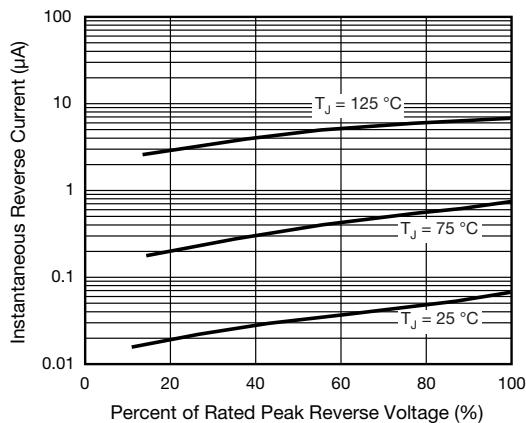


Fig. 4 - Typical Reverse Characteristics

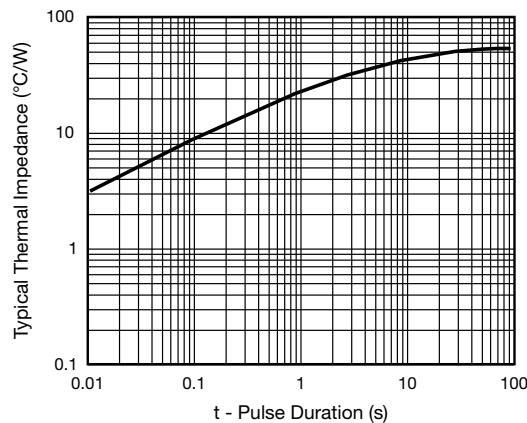
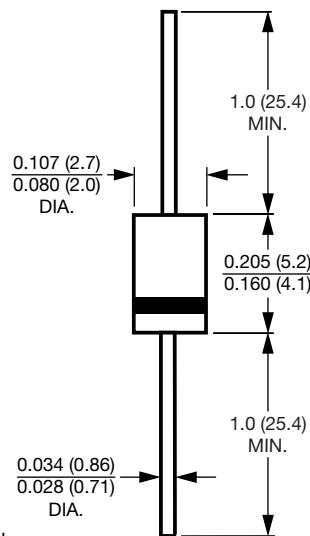


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)



Note

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

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