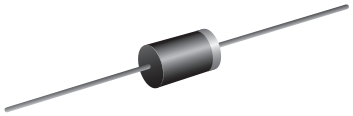
GP02-20, GP02-25, GP02-30, GP02-35, GP02-40

High Voltage Glass Passivated Junction Plastic Rectifier

SUPERECTIFIER®



DO-41 (DO-204AL)

FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low leakage current
- 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.25 A
V_{RRM}	2000 V, 2500 V, 3000 V, 3500 V, 4000 V
I_{FSM}	15 A
I_R	5.0 µA
V_F	3.0 V
T_J max.	175 °C
Package	DO-41 (DO-204AL)
Circuit configuration	Single

TYPICAL APPLICATIONS

For use in rectification of high voltage power supplies, inverters, converters, and freewheeling diodes application.

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

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

PARAMETER	SYMBOL	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	2000	2500	3000	3500	4000	V
Maximum RMS voltage	V_{RMS}	1400	1750	2100	2450	2800	V
Maximum DC blocking voltage	V_{DC}	2000	2500	3000	3500	4000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T_A = 55 °C	$I_{F(AV)}$	0.25					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	15					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	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNIT
Maximum instantaneous forward voltage	1.0 A		V_F	3.0					V
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	5.0					µA
		T_A = 100 °C		50					
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	2.0					µs
Typical junction capacitance	4.0 V, 1 MHz		C_J	3.0					pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	130					°C/W

Note

(1) Thermal resistance from junction to ambient 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
GP02-20-E3/54	0.339	54	5500	13" diameter paper tape and reel
GP02-20-E3/73	0.339	73	3000	Ammo pack packaging

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

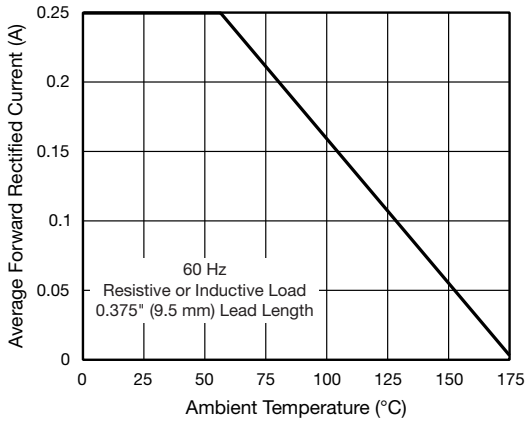


Fig. 1 - Forward Current Derating Curve

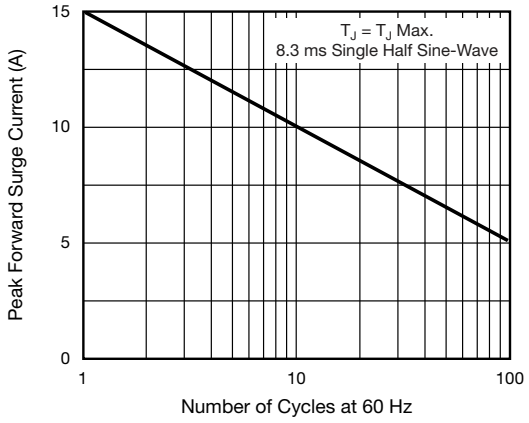


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

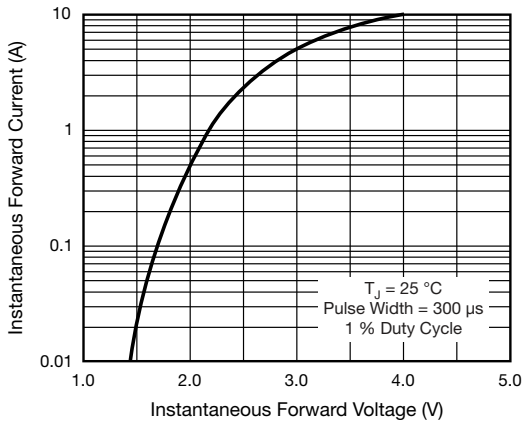


Fig. 3 - Typical Instantaneous Forward Characteristics

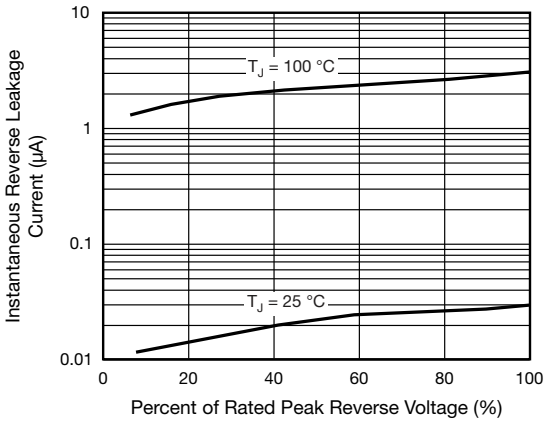


Fig. 4 - Typical Reverse Characteristics

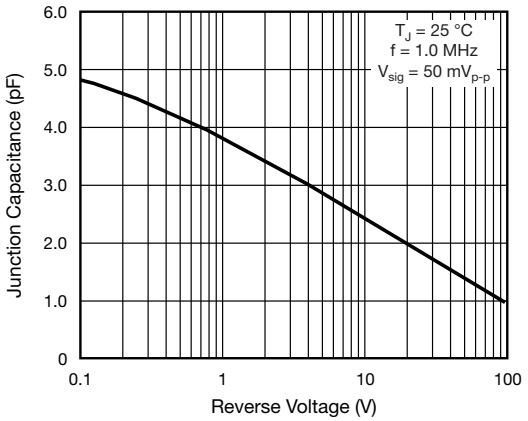
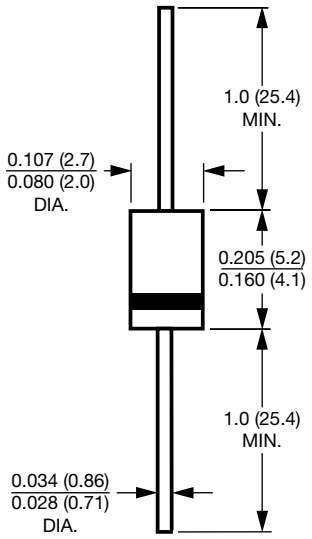


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)



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