

High Voltage Glass Passivated Junction Rectifier



FEATURES

- Superelectifier structure for High Reliability application
- Cavity-free glass-passivated junction
- Low leakage current
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-204AL, molded epoxy over glass body
Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	0.25 A
V_{RRM}	1000 V to 4000 V
I_{FSM}	15 A
I_R	5.0 μ A
V_F	3.0 V
T_J max.	175 °C

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 ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNIT
Maximum instantaneous forward voltage	at 1.0 A	V_F	3.0					V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 100\text{ }^{\circ}\text{C}$	I_R	5.0 50					μA
Typical reverse recovery time	at $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$	t_{rr}	2.0					μs
Typical junction capacitance	at 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 ⁽¹⁾	R _{θJA}	130					°C/W

Note:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP02-20E3/54	0.339	54	5500	13" Diameter Paper Tape & Reel
GP02-20E3/73	0.339	73	3000	Ammo Pack Packaging

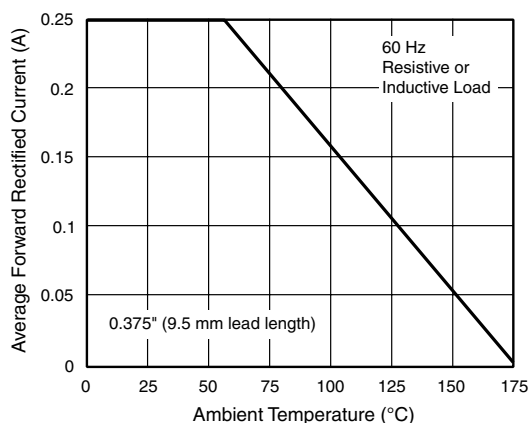
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

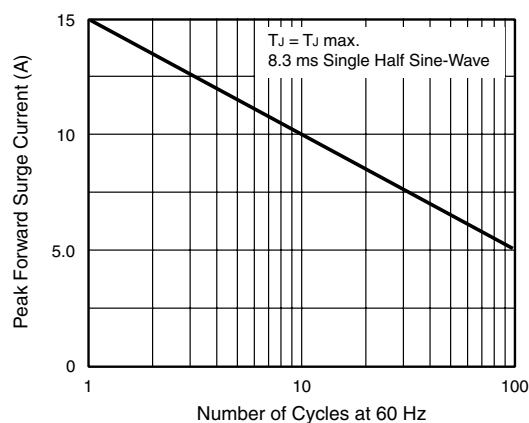


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

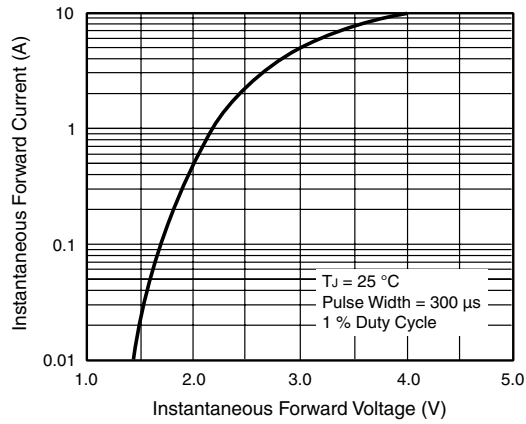


Figure 3. Typical Instantaneous Forward Characteristics

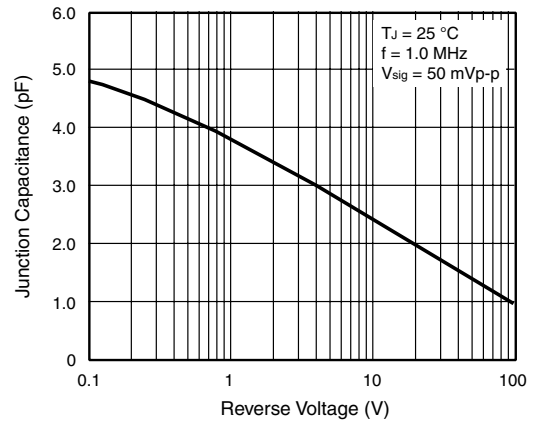


Figure 5. Typical Junction Capacitance

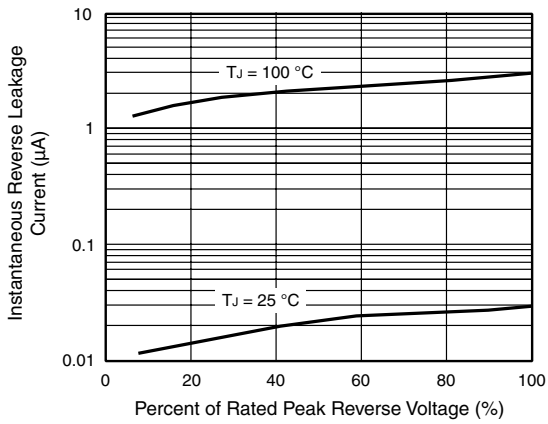
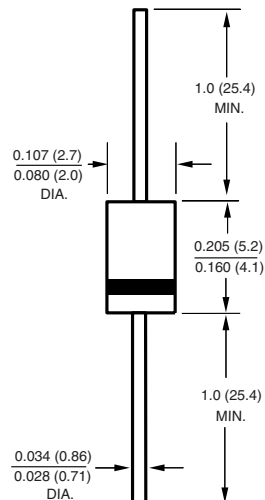


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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