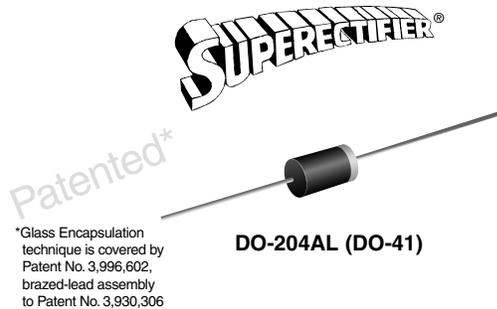


## High Voltage Glass Passivated Junction Rectifier



### FEATURES

- Superrectifier 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 free-wheeling 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.25 A
$V_{RRM}$	1000 V to 4000 V
$I_{FSM}$	15 A
$I_R$	5.0 $\mu$ 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



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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			$\mu\text{A}$
Typical reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$			2.0			$\mu\text{s}$
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$			3.0			pF

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

**Note:**

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

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP02-20E3/54	0.339	54	5500	13" diameter paper tape and reel
GP02-20E3/73	0.339	73	3000	Ammo pack packaging
GP02-20HE3/54 <sup>(1)</sup>	0.339	54	5500	13" diameter paper tape and reel
GP02-20HE3/73 <sup>(1)</sup>	0.339	73	3000	Ammo pack packaging

**Note:**

(1) Automotive grade AEC Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

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

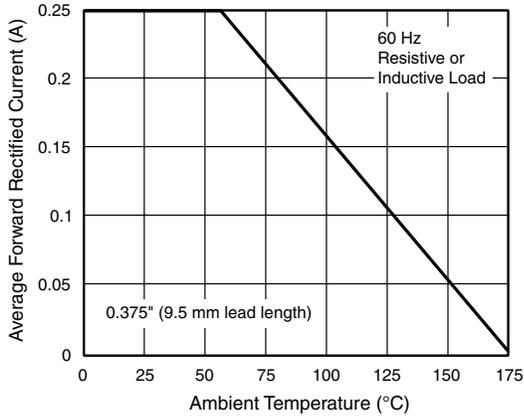


Figure 1. Forward Current Derating Curve

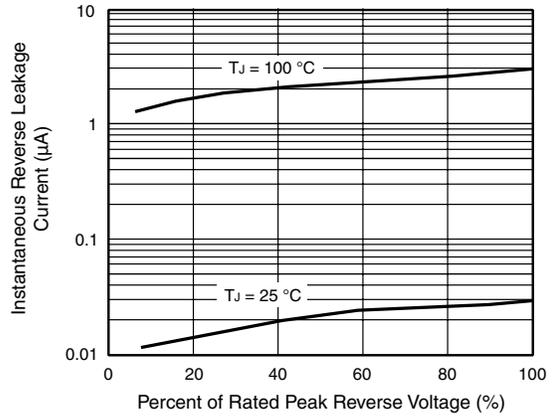


Figure 4. Typical Reverse Characteristics

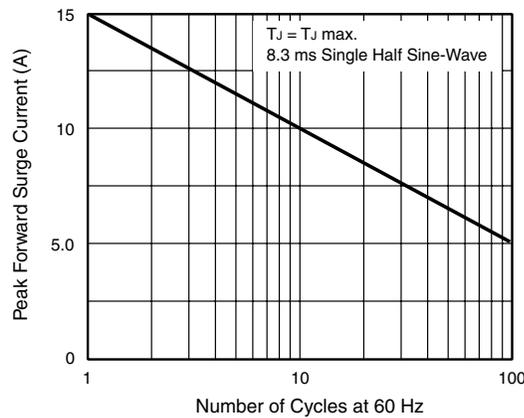


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

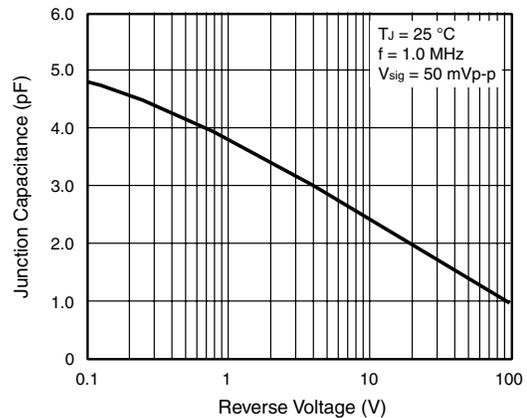


Figure 5. Typical Junction Capacitance

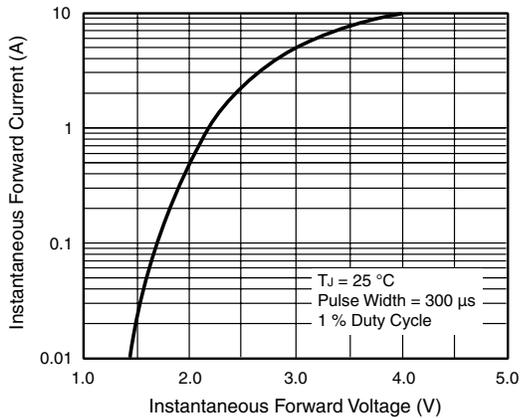
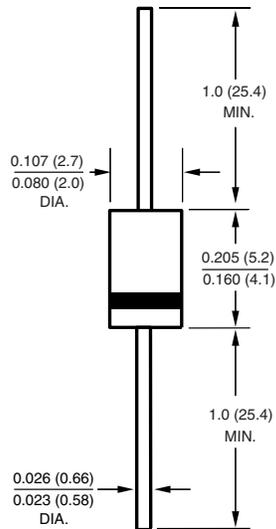


Figure 3. Typical Instantaneous Forward Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AL (DO-41)





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