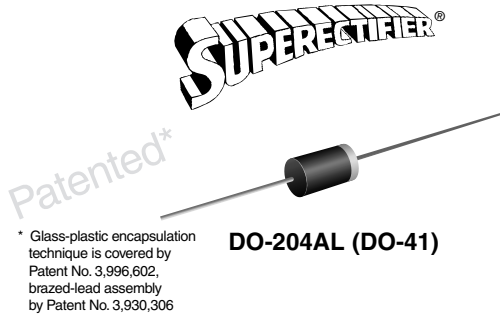


Glass Passivated Junction Rectifier



FEATURES

- Superrectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 1600 V
I_{FSM}	30 A, 25 A
I_R	5.0 μ A
V_F	1.1 V, 1.2 V, 1.3 V
T_J max.	175 °C

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for both consumer and automotive applications.

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-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

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

PARAMETER	SYMBOL	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT		
Maximum repetitive peak reverse voltage	V_{RRM}	50 to 1600 V (Fig. 5)													V		
Maximum average forward rectified current 0.375" (9.5 mm) lead length (Fig. 1)	$I_{F(AV)}$	1.0													A		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30					25										A
Maximum full load reverse current, full cycle average, 0.375" (9.5 mm) lead lengths at $T_A = 75$ °C	$I_{R(AV)}$	30													μ A		
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175					- 65 to + 150										°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)																	
PARAMETER	TEST CONDITIONS		SYMBOL	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT
Maximum instantaneous forward voltage	1.0 A		V _F	1.1			1.2			1.3						V	
Maximum DC reverse current at rated DC blocking voltage		T _A = 25 °C T _A = 125 °C	I _R							5.0 50						μA	
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}							3.0						μs	
Typical junction capacitance	4.0 V, 1 MHz		C _J	8.0			7.0			5.0						pF	

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)															
PARAMETER	SYMBOL	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT
Typical thermal resistance ⁽¹⁾	R _{θJA}							55						°C/W	

Note:

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP10J-E3/54	0.335	54	5500	13" diameter paper tape and reel
GP10J-E3/73	0.335	73	3000	Ammo pack packaging
GP10JHE3/54 ⁽¹⁾	0.335	54	5500	13" diameter paper tape and reel
GP10JHE3/73 ⁽¹⁾	0.335	73	3000	Ammo pack packaging

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

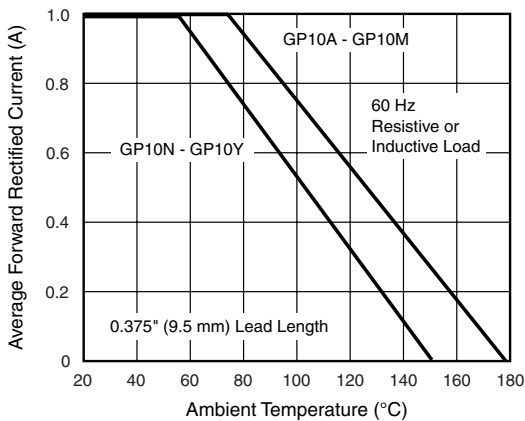


Figure 1. Forward Current Derating Curve

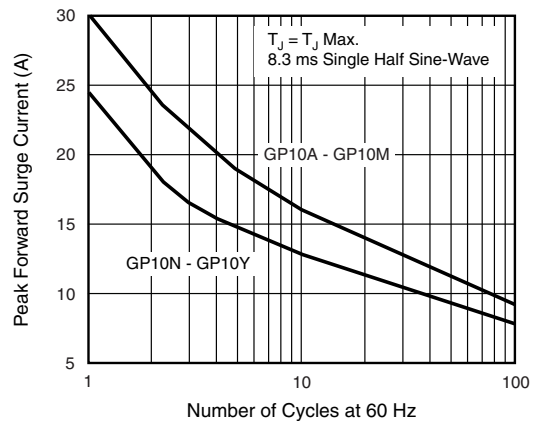


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

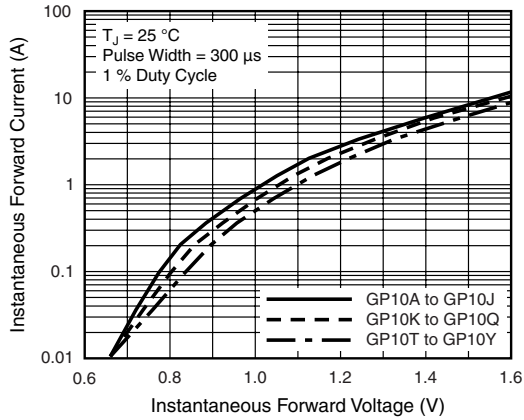


Figure 3. Typical Instantaneous Forward Characteristics

GP10A.....	50 V
GP10B.....	100 V
GP10D.....	200 V
GP10G.....	400 V
GP10J.....	600 V
GP10K.....	800 V
GP10M.....	1000 V
GP10N.....	1100 V
GP10Q.....	1200 V
GP10T.....	1300 V
GP10V.....	1400 V
GP10W.....	1500 V
GP10Y.....	1600 V

Figure 5. Maximum Repetitive Peak Reverse Voltage, V_{RRM}

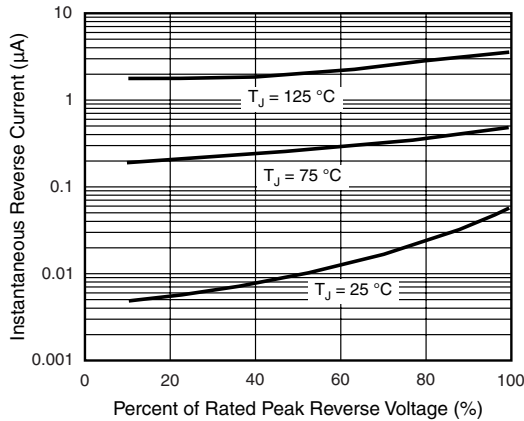


Figure 4. Typical Reverse Characteristics

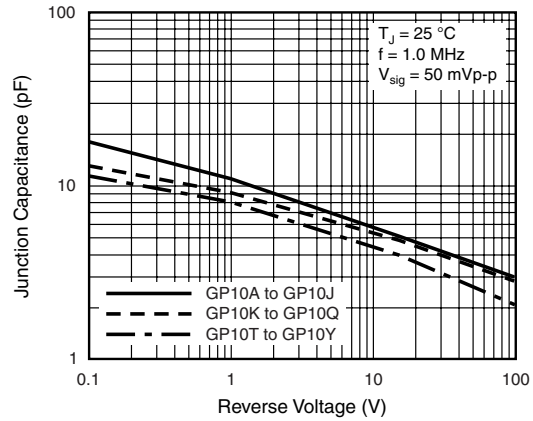
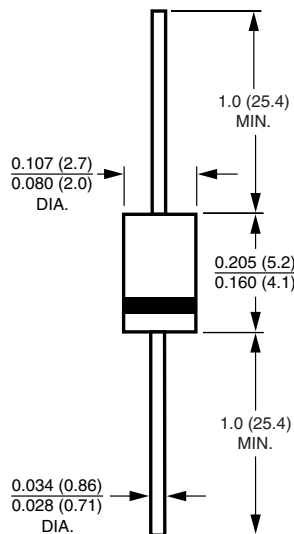


Figure 6. Typical Junction Capacitance

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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