

Glass Passivated Junction Plastic Rectifier



DO-201AD

Patented*

* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current, I_R less than $0.1 \mu A$
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip $260^\circ C$, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS COMPLIANT

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-201AD, 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
V_{RRM}	200 V to 1300 V
I_{FSM}	100 A
I_R	$5.0 \mu A$
V_F	1.1 V
T_J max.	$175^\circ C$

MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise noted)							
PARAMETER	SYMBOL	BY251GP	BY252GP	BY253GP	BY254GP	BY255GP	UNIT
Maximum non repetitive peak reverse voltage	V_{RSM}	220	440	660	880	1430	V
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	800	1300	V
Maximum RMS voltage	V_{RMS}	140	280	420	560	910	V
Maximum DC blocking voltage	V_{DC}	200	400	600	800	1300	V
Maximum average forward rectified current 10 mm lead length at $T_A = 55^\circ C$	$I_{F(AV)}$	3.0					A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	100					A
Maximum full load reverse current, full cycle average 10 mm lead length at $T_A = 55^\circ C$	$I_{R(AV)}$	100					μA
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175					$^\circ C$

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	BY251GP	BY252GP	BY253GP	BY254GP	BY255GP	UNIT
Maximum instantaneous forward voltage	3.0 A		V _F	1.1					V
Maximum reverse current at rated DC blocking voltage		T _A = 25 °C	I _R	5.0					μA
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 V, I _{rr} = 0.25 A		t _{rr}	3.0					μs
Typical junction capacitance	4.0 V, 1 MHz		C _J	40					pF

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	BY251GP	BY252GP	BY253GP	BY254GP	BY255GP	UNIT	
Typical thermal resistance ⁽¹⁾	R _{θJA} R _{θJL}	20 10						°C/W

Note:

(1) Thermal resistance from junction to ambient and from junction to lead 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
BY253GP-E3/54	1.28	54	1400	13" diameter paper tape and reel
BY253GP-E3/73	1.28	73	1000	Ammo pack packaging
BY253GPHE3/54 ⁽¹⁾	1.28	54	1400	13" diameter paper tape and reel
BY253GPHE3/73 ⁽¹⁾	1.28	73	1000	Ammo pack packaging

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

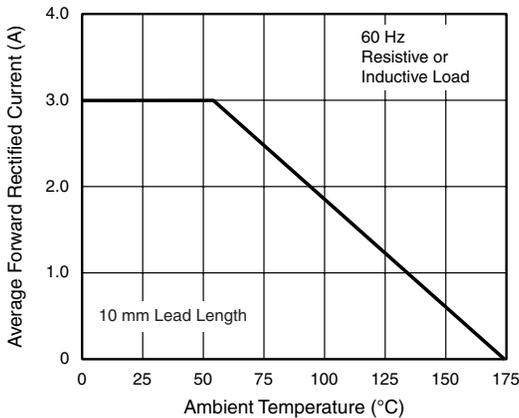


Figure 1. Forward Current Derating Curve

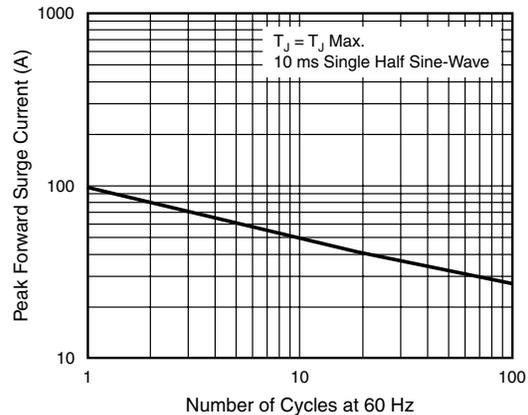


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

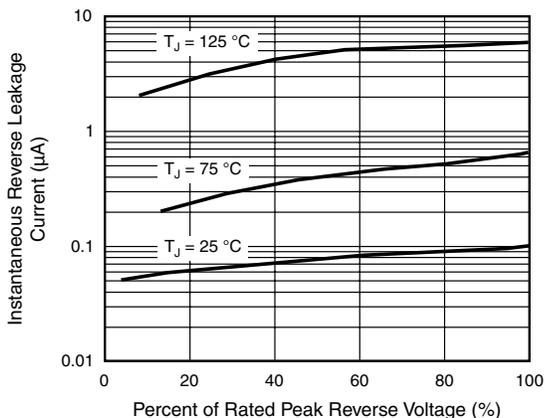


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

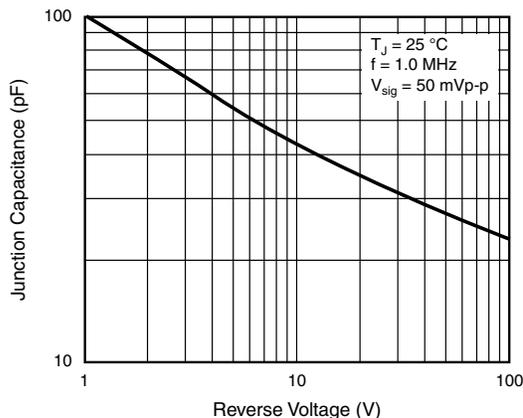


Figure 5. Typical Junction Capacitance

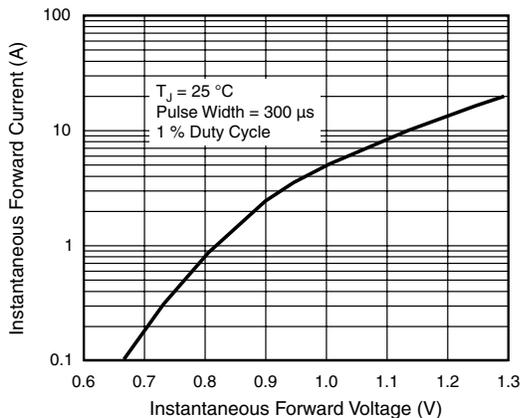
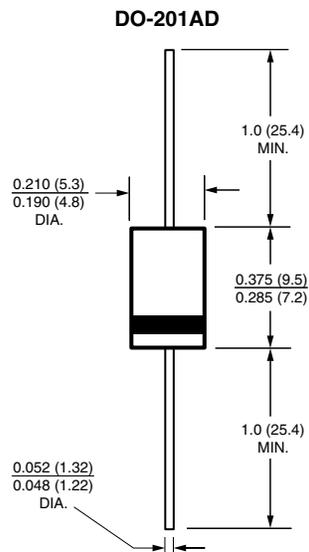


Figure 4. Typical Instantaneous Forward Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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