

## Fast Switching Plastic Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	3.0 A
$V_{RRM}$	50 V to 800 V
$I_{FSM}$	100 A
$t_{rr}$	200 ns
$I_R$	10 $\mu$ A
$V_F$	1.25 V
$T_j$ max.	150 °C



DO-201AD

### Features

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** DO-201AD, molded epoxy body

Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D

**Polarity:** Color band denotes cathode end

### Typical Applications

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and Telecommunication.

(Note: These devices are not Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

### Maximum Ratings

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

Parameter	Symbol	GI850	GI851	GI852	GI854	GI856	GI858	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	V
Maximum non-repetitive peak reverse voltage	$V_{RSM}$	75	150	250	450	650	880	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 90$ °C	$I_{F(AV)}$	3.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	100						A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 50 to + 150						°C

### Electrical Characteristics

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

Parameter	Test condition	Symbol	GI850	GI851	GI852	GI854	GI856	GI858	Unit
Maximum instantaneous forward voltage	at 3.0 A at 9.4 A, $T_J = 175\text{ }^\circ\text{C}$	$V_F$	1.25 1.10						V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$	10						$\mu\text{A}$
			150	150	200	250	300	500	
Maximum reverse recovery time	at $I_F = 1.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_{rr} = 10\% I_{RM}$	$t_{rr}$	200						ns
Maximum reverse recovery time	at $I_F = 1.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_{rr} = 10\% I_{RM}$	$I_{RM(REC)}$	2.0						A
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$	28						pF

### Thermal Characteristics

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

Parameter	Symbol	GI850	GI851	GI852	GI854	GI856	GI858	Unit
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$ $R_{\theta JL}$	22 8.0						$^\circ\text{C}/\text{W}$

Notes:

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, with both leads equally heat sink

### Ratings and Characteristics Curves

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

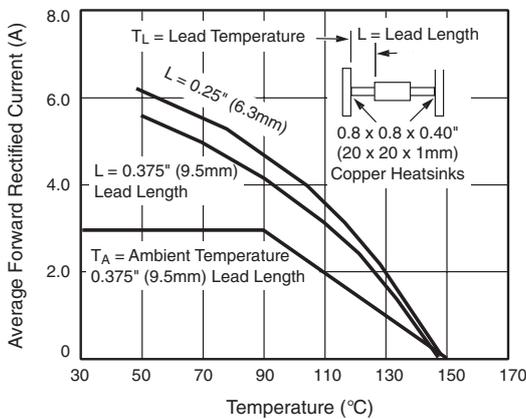


Figure 1. Forward Current Derating Curves

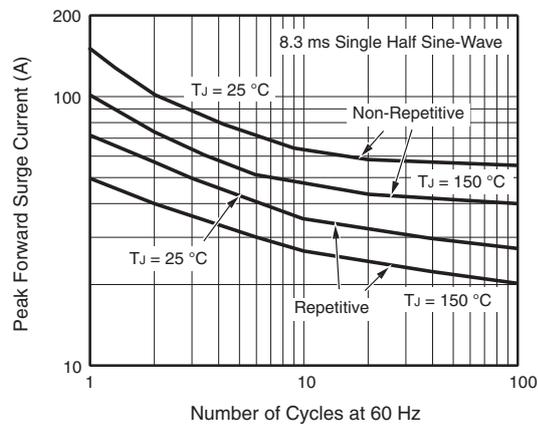


Figure 2. Maximum Peak Forward Surge Current

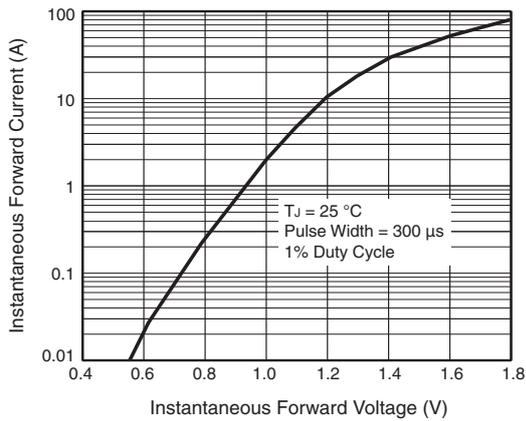


Figure 3. Typical Instantaneous Forward Characteristics

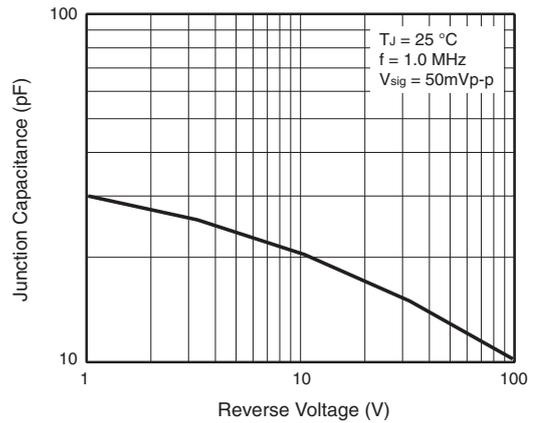


Figure 5. Typical Junction Capacitance

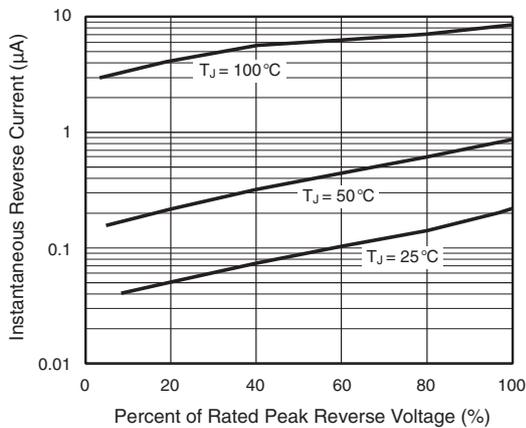
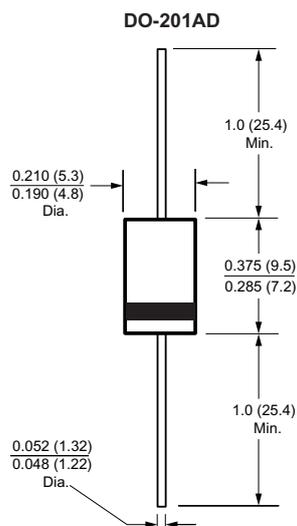


Figure 4. Typical Reverse Characteristics

### Package outline dimensions in inches (millimeters)





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