

## Fast Switching Plastic Rectifier


**DO-201AD**

### FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### 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.)

### MECHANICAL DATA

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

**Polarity:** Color band denotes cathode end

### PRIMARY 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

### 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	$T_J, T_{STG}$	- 50 to + 150						°C

ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	GI850	GI851	GI852	GI854	GI856	GI858	UNIT
Maximum instantaneous forward voltage	3.0 A 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	$I_F = 1.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_{rr} = 10\% I_{RM}$		$t_{rr}$	200						ns
Maximum reverse recovery time	$I_F = 1.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_{rr} = 10\% I_{RM}$		$I_{RM(REC)}$	2.0						A
Typical junction capacitance	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						$^\circ\text{C}/\text{W}$	

**Note:**

(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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GI856-E3/54	1.1	54	1400	13" diameter paper tape and reel
GI856-E3/73	1.1	73	1000	Ammo pack packaging

### RATINGS AND CHARACTERISTICS CURVES

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

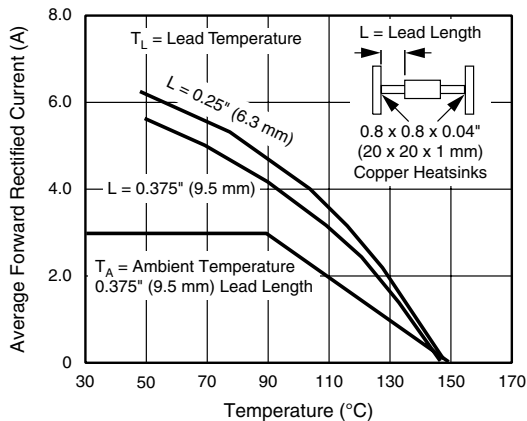


Figure 1. Forward Current Derating Curves

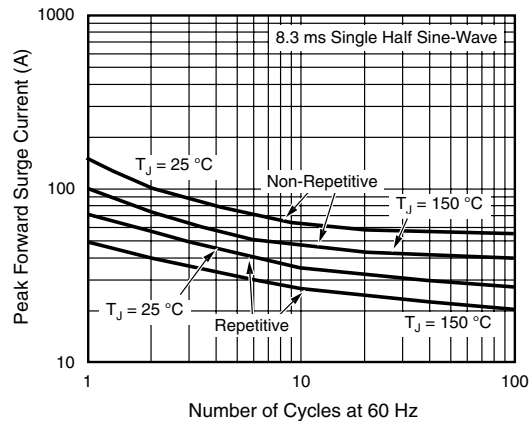


Figure 2. Maximum Peak Forward Surge Current

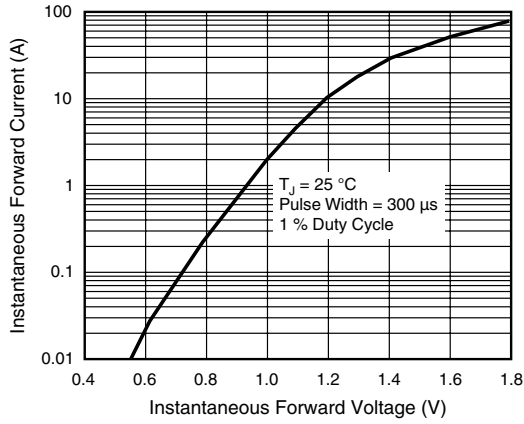


Figure 3. Typical Instantaneous Forward Characteristics

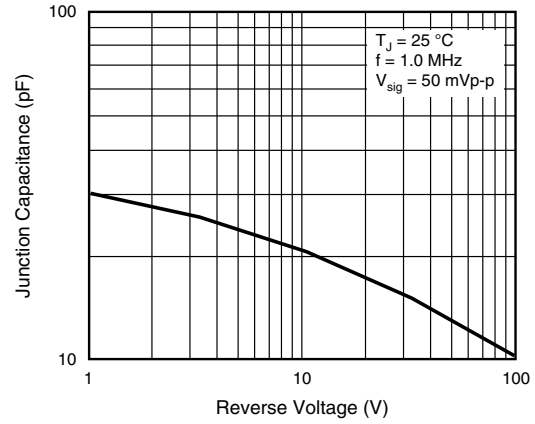


Figure 5. Typical Junction Capacitance

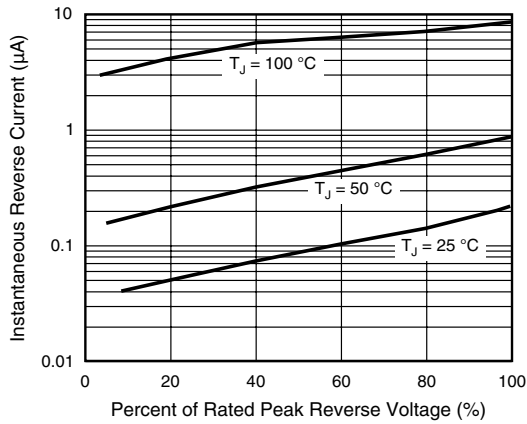
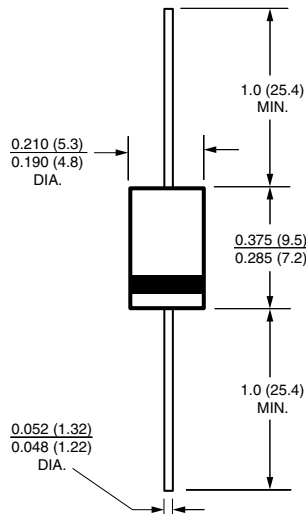


Figure 4. Typical Reverse Characteristics

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-201AD**





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