

## 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 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to 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 AEC-Q101 qualified.

### MECHANICAL DATA

**Case:** DO-201AD, molded epoxy body  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix 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 range	$T_J, T_{STG}$	- 50 to + 150						°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	GI850	GI851	GI852	GI854	GI856	GI858	UNIT
Maximum instantaneous forward voltage	3.0 A	T <sub>A</sub> = 25 °C	V <sub>F</sub>	1.25						V
	9.4 A	T <sub>J</sub> = 175 °C		1.10						
Maximum DC reverse current at rated DC blocking voltage		T <sub>A</sub> = 25 °C	I <sub>R</sub>	10						μA
		T <sub>A</sub> = 100 °C		150	150	200	250	300	500	
Maximum reverse recovery current	I <sub>F</sub> = 1.0 A, V <sub>R</sub> = 30 V, di/dt = 50 A/μs, I <sub>rr</sub> = 10 % I <sub>RM</sub>		I <sub>RM(REC)</sub>	200						ns
Maximum reverse recovery time	I <sub>F</sub> = 1.0 A, V <sub>R</sub> = 30 V, di/dt = 50 A/μs, I <sub>rr</sub> = 10 % I <sub>RM</sub>		t <sub>rr</sub>	2.0						A
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	28						pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	GI850	GI851	GI852	GI854	GI856	GI858	UNIT	
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	22							°C/W
	R <sub>θJL</sub> <sup>(1)</sup>	8.0							

## 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)

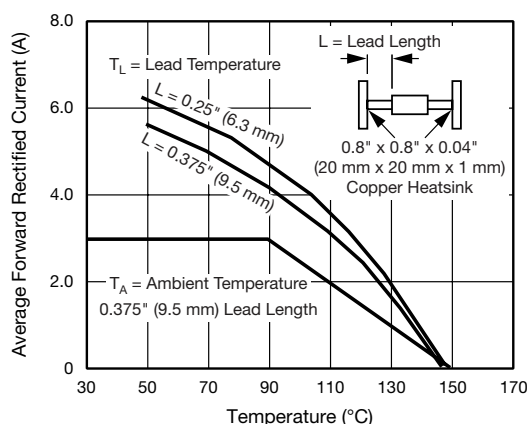


Fig. 1 - Forward Current Derating Curves

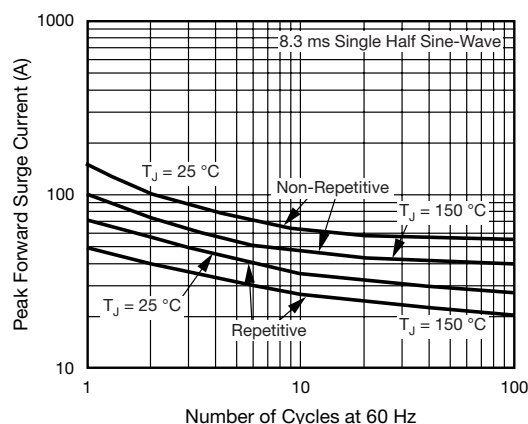


Fig. 2 - Maximum Peak Forward Surge Current

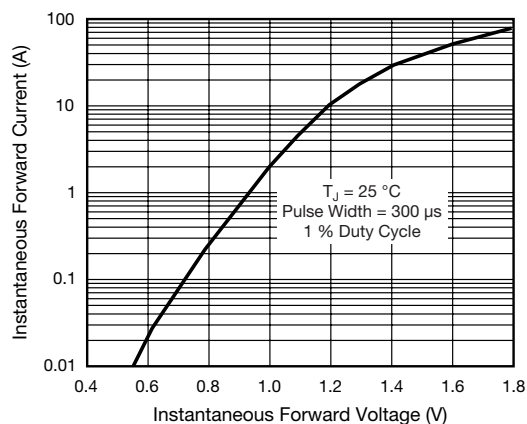


Fig. 3 - Typical Instantaneous Forward Characteristics

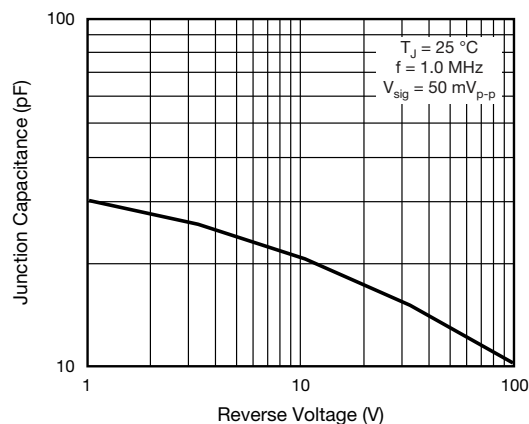


Fig. 5 - Typical Junction Capacitance

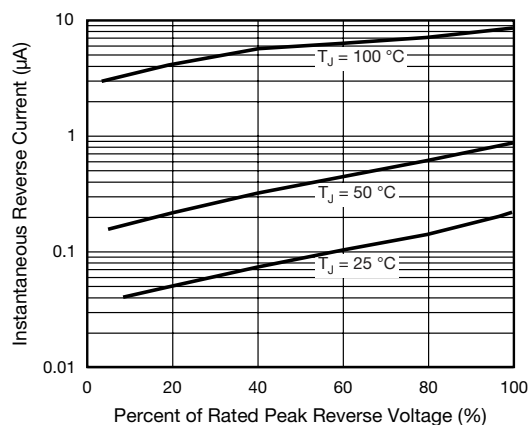
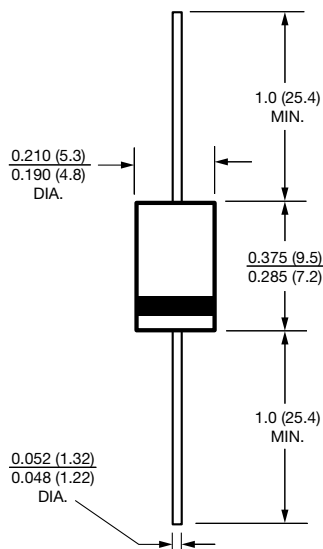


Fig. 4 - Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-201AD





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