

## General Purpose Plastic Rectifier


**DO-201AD**

### FEATURES

- Low forward voltage drop
- Low leakage current,  $I_R$  less than 0.1  $\mu\text{A}$
- 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 general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

#### 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
$V_{RRM}$	200 V to 1300 V
$I_{FSM}$	150 A
$I_R$	5.0 $\mu\text{A}$
$V_F$	1.1 V
$T_J$ max.	150 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	BY251P	BY252P	BY253P	BY254P	BY255P	UNIT
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	$I_{F(AV)}$	3.0					A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	$I_{FSM}$	150					A
Maximum full load reverse current, full cycle average 10 mm lead length	$I_{R(AV)}$	100					$\mu\text{A}$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150					°C

ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	BY251P	BY252P	BY253P	BY254P	BY255P	UNIT
Maximum instantaneous forward voltage	3.0 A	$V_F$	1.1				V	
Maximum reverse current at rated DC blocking voltage	$T_A = 25\text{ °C}$	$I_R$	5.0				$\mu\text{A}$	
Maximum reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ V}, I_{rr} = 0.25\text{ A}$	$t_{rr}$	3.0				$\mu\text{s}$	
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	40				pF	

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

PARAMETER	SYMBOL	BY251P	BY252P	BY253P	BY254P	BY255P	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	20					$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	10					

#### 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
BY253P-E3/54	1.1	54	1400	13" diameter paper tape and reel
BY253P-E3/73	1.1	73	1000	Ammo pack packaging

### RATINGS AND CHARACTERISTICS CURVES

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

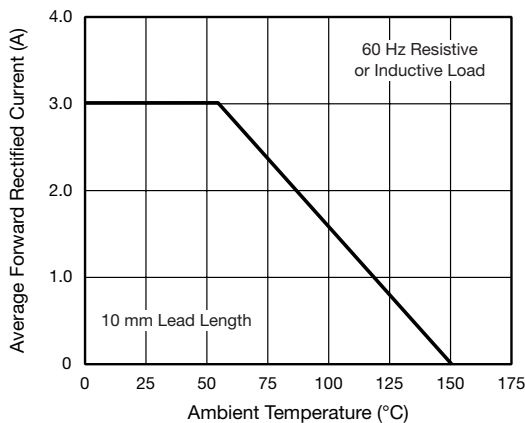


Fig. 1 - Forward Current Derating Curve

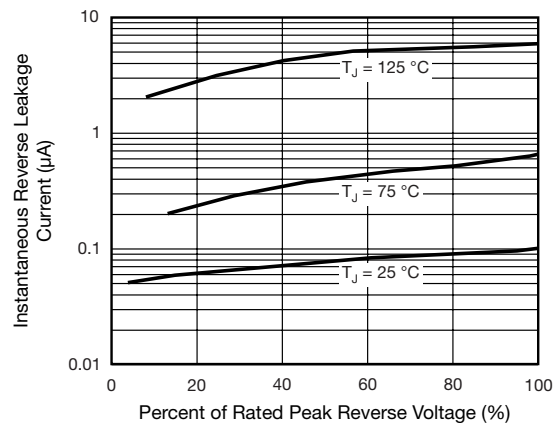


Fig. 3 - Maximum Non-repetitive Peak Forward Surge Current

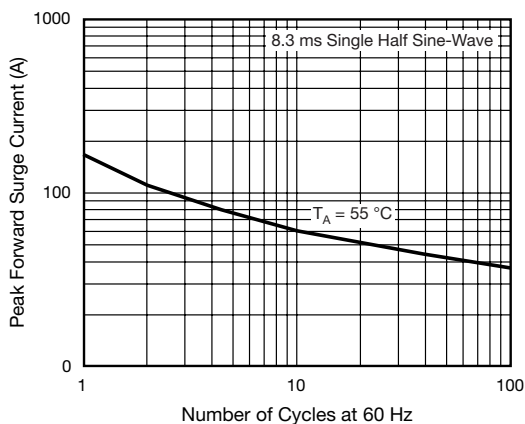


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

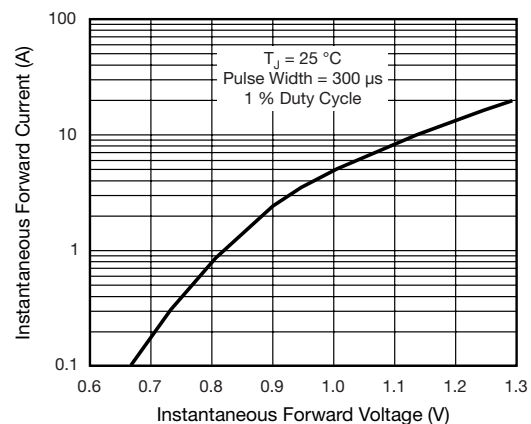


Fig. 4 - Typical Instantaneous Forward Characteristics

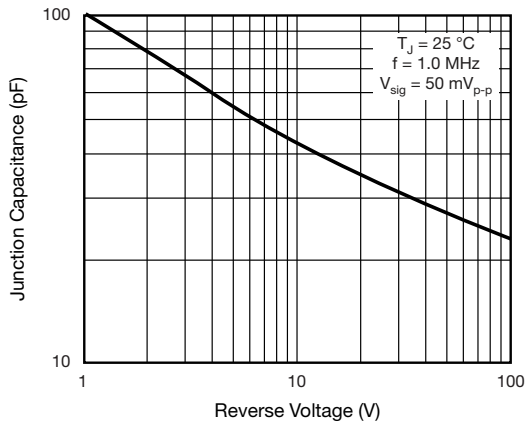
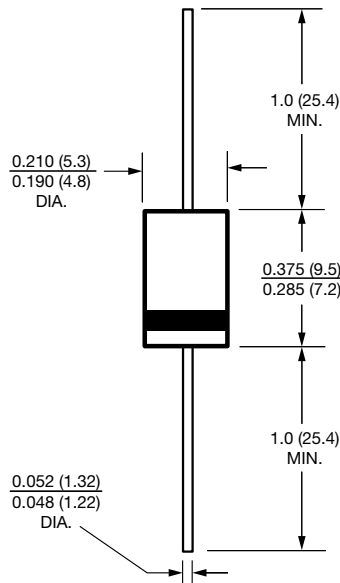


Fig. 5 - Typical Junction Capacitance

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

**DO-201AD**





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