

## General Purpose Plastic Rectifier


**DO-204AL (DO-41)**

### FEATURES

- 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 general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

#### Note

- These devices are not AEC-Q101 qualified.

### MECHANICAL DATA

**Case:** DO-204AL, 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	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	50 A
$I_R$	1.0 $\mu$ A
$V_F$	1.0 V, 1.1 V
$T_J$ max.	150 °C

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)									
PARAMETER	SYMBOL	M100A	M100B	M100D	M100G	M100J	M100K	M100M	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 100$ °C	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	50							A
Maximum full load reverse current full cycle average 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{R(AV)}$	100							$\mu$ A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 50 to + 150							°C

ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	M100A	M100B	M100D	M100G	M100J	M100K	M100M	UNIT
Maximum instantaneous forward voltage	1.0 A	$V_F$	1.0					1.1		V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25$ °C	$I_R$	1.0							$\mu$ A
	$T_A = 100$ °C		50							
Typical reverse recovery time	$I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A	$t_{rr}$	2.0							$\mu$ s
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	15							pF

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

PARAMETER	SYMBOL	M100A	M100B	M100D	M100G	M100J	M100K	M100M	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$				50				$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$				25				

#### 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
M100J-E3/54	0.33	54	5500	13" diameter paper tape and reel
M100J-E3/73	0.33	73	3000	Ammo pack packaging

### RATINGS AND CHARACTERISTICS CURVES

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

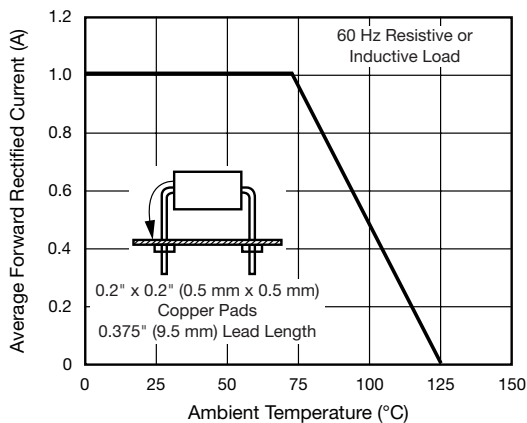


Fig. 1 - Forward Current Derating Curve

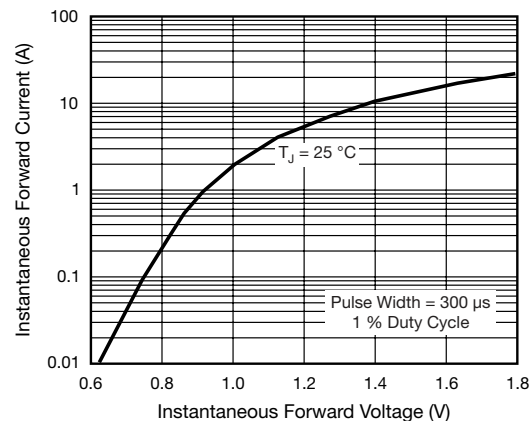


Fig. 3 - Typical Instantaneous Forward Characteristics

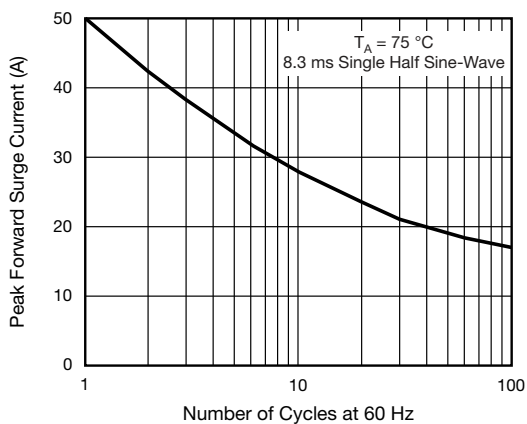


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

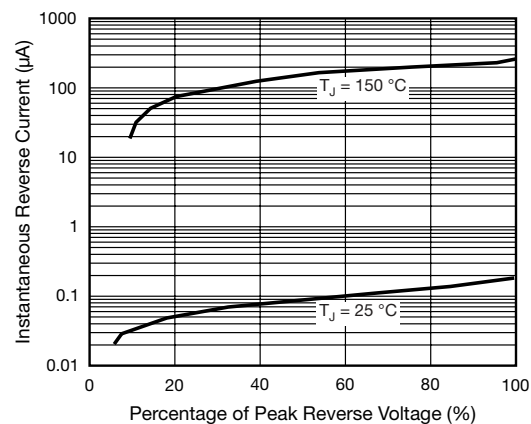


Fig. 4 - Typical Reverse Characteristics

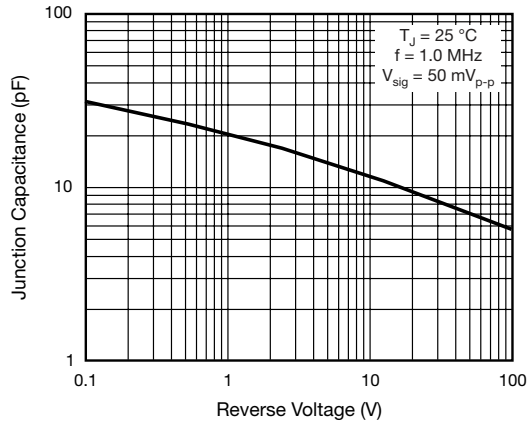


Fig. 5 - Typical Junction Capacitance

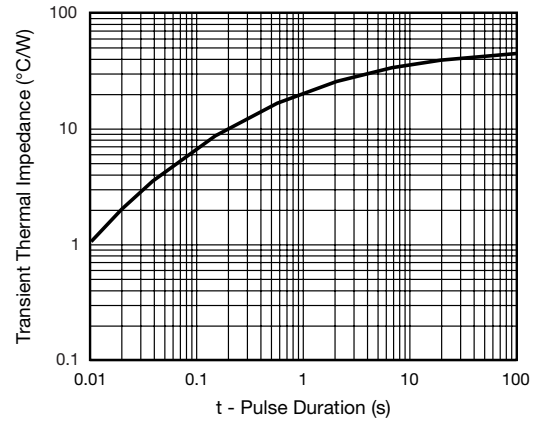
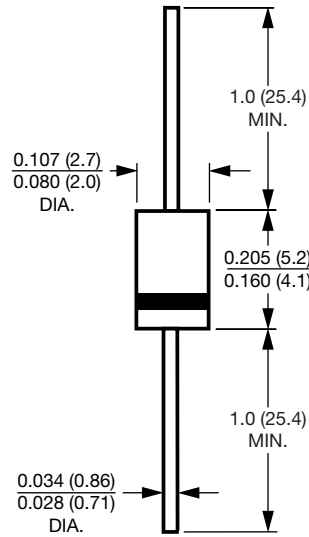


Fig. 6 - Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-204AL (DO-41)





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