



## 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
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

### 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, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	50 A
$I_R$	1.0 $\mu$ A
$V_F$ at $I_F = 1.0$ A	1.0 V, 1.1 V
$T_J$ max.	150 °C
Package	DO-204AL (DO-41)
Diode variations	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)									
PARAMETER	SYMBOL	M100A	M100B	M100D	M100G	M100J	M100K	M100M	UNIT
Max. repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Max. RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Max. DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Max. 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
Max. 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
Max. instantaneous forward voltage	1.0 A	$V_F$	1.0				1.1			V
Max. 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 <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	M100A	M100B	M100D	M100G	M100J	M100K	M100M	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	50							°C/W
	R <sub>θJL</sub> <sup>(1)</sup>	25							

**Note**

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB 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<sub>A</sub> = 25 °C unless otherwise noted)**

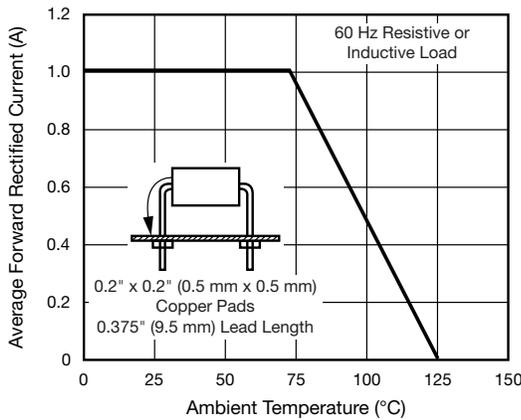


Fig. 1 - Forward Current Derating Curve

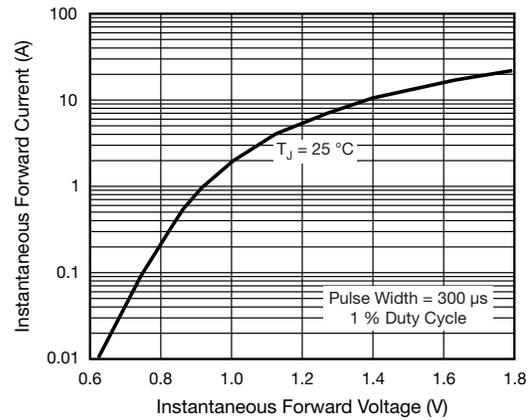


Fig. 3 - Typical Instantaneous Forward Characteristics

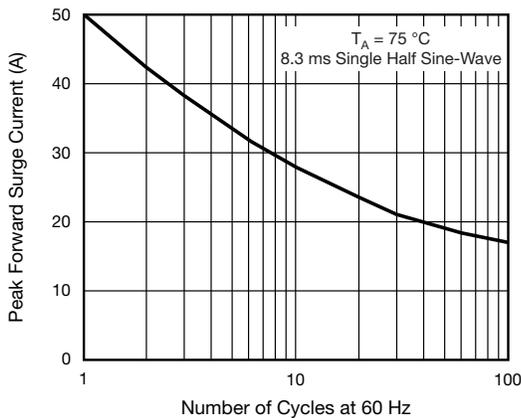


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

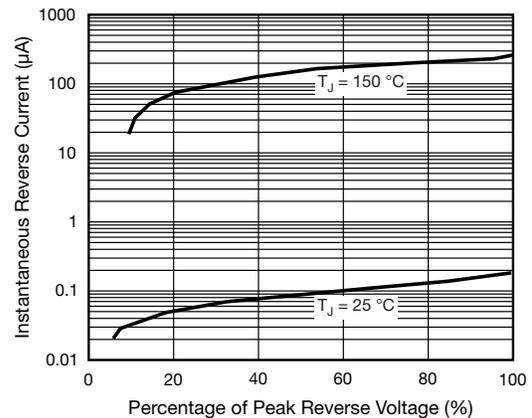


Fig. 4 - Typical Reverse Characteristics

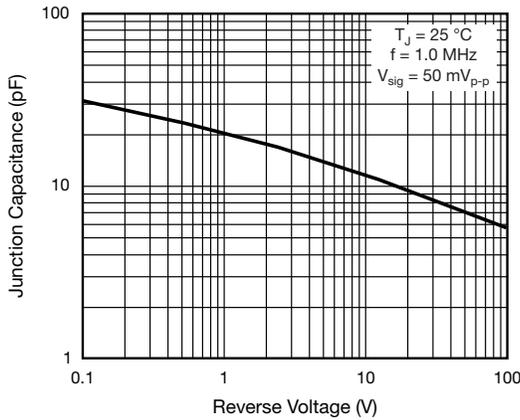


Fig. 5 - Typical Junction Capacitance

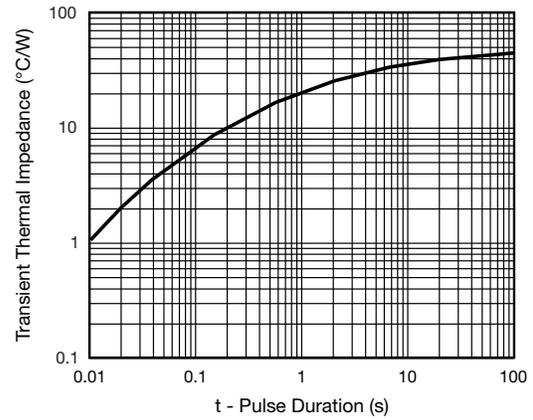
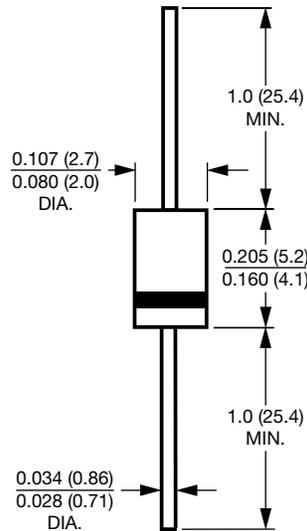


Fig. 6 - Typical Transient Thermal Impedance

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

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





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