

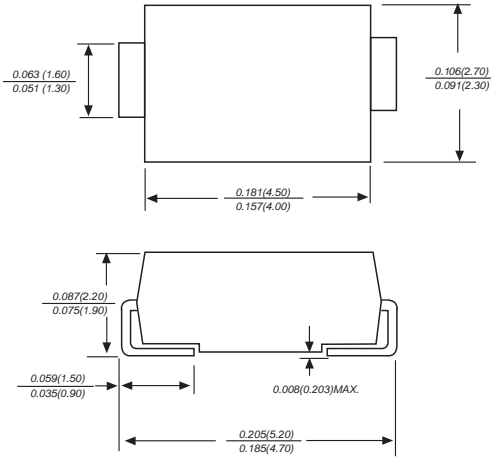


# M1 THRU M7

## SURFACE MOUNT GENERAL RECTIFIER

Reverse Voltage - 50 to 1000 Volts Forward Current - 1.0 Ampere

### DO-214AC/SMA2



### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals

### MECHANICAL DATA

**Case:** JEDEC DO-214AC molded plastic body  
**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.002 ounce, 0.07 grams

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
 Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| MDD Catalog Number  | SYMBOLS         | M1          | M2        | M3        | M4        | M5        | M6        | M7        | UNITS              |
|---|-----------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------|
| Marking code  |                 | MDD<br>M1   | MDD<br>M2 | MDD<br>M3 | MDD<br>M4 | MDD<br>M5 | MDD<br>M6 | MDD<br>M7 |                    |
| Maximum repetitive peak reverse voltage   | $V_{RRM}$       | 50          | 100       | 200       | 400       | 600       | 800       | 1000      | VOLTS              |
| Maximum RMS voltage   | $V_{RMS}$       | 35          | 70        | 140       | 280       | 420       | 560       | 700       | VOLTS              |
| Maximum DC blocking voltage   | $V_{DC}$        | 50          | 100       | 200       | 400       | 600       | 800       | 1000      | VOLTS              |
| Maximum average forward rectified current at $T_L=110^\circ\text{C}$                                      | $I_{(AV)}$      | 1.0         |           |           |           |           |           |           | Amp                |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method)       | $I_{FSM}$       | 30.0        |           |           |           |           |           |           | Amps               |
| Maximum instantaneous forward voltage at 1.0A   | $V_F$           | 1.1         |           |           |           |           |           |           | Volts              |
| Maximum DC reverse current $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage $T_A=100^\circ\text{C}$ | $I_R$           | 5.0<br>50.0 |           |           |           |           |           |           | $\mu\text{A}$      |
| Typical junction capacitance (NOTE 1)   | $C_J$           | 15.0        |           |           |           |           |           |           | pF                 |
| Typical thermal resistance (NOTE 2)   | $R_{\theta JA}$ | 75.0        |           |           |           |           |           |           | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range  | $T_J, T_{STG}$  | -50 to +150 |           |           |           |           |           |           | $^\circ\text{C}$   |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 2. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

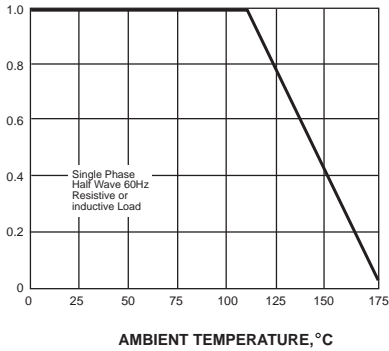


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# RATINGS AND CHARACTERISTIC CURVES M1 THRU M7

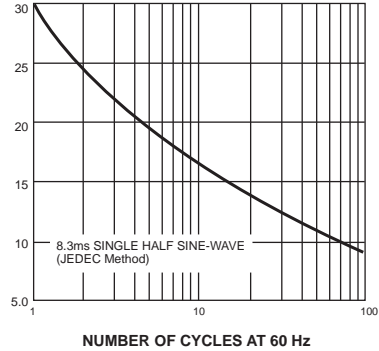
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



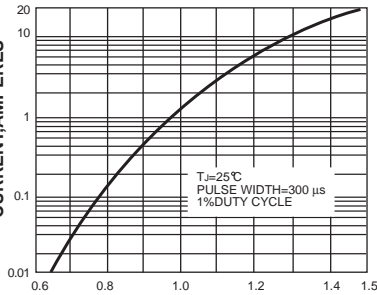
PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



INSTANTANEOUS FORWARD CURRENT, AMPERES

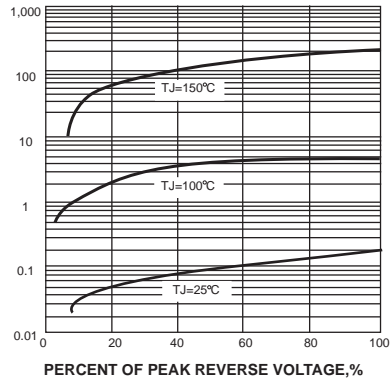
FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS FORWARD VOLTAGE,  
VOLTS

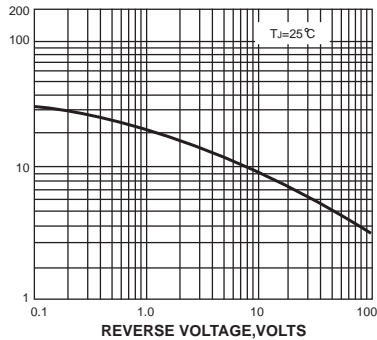
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



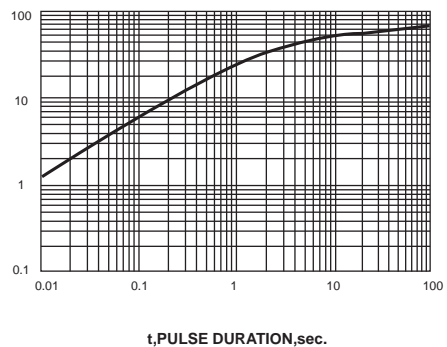
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The cruve graph is for reference only, can't be the basis for judgment(曲线图仅供参考!)



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