

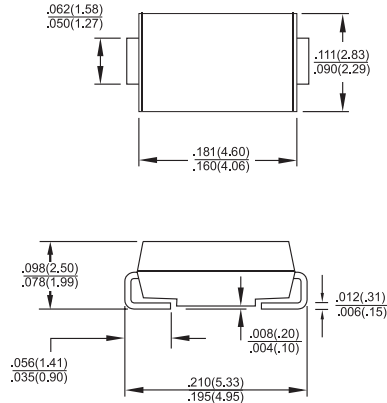
# M1 - M7

## 1.0 AMP. Surface Mount Rectifiers

### SMA/DO-214AC

## Features

- ✦ For surface mounted application
- ✦ Glass passivated junction chip.
- ✦ Low forward voltage drop
- ✦ High current capability
- ✦ Easy pick and place
- ✦ High surge current capability
- ✦ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ✦ High temperature soldering: 260°C / 10 seconds at terminals
- ✦ High reliability grade (AEC Q101 qualified)



## Mechanical Data

- ✦ Case: Molded plastic
- ✦ Terminals: Pure tin plated, lead free solderable per J-STD-002B and JESD22-B102D.
- ✦ Polarity: Indicated by cathode band
- ✦ Packaging: 12mm tape per EIA STD RS-481
- ✦ Weight: 0.064 gram

Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	M1	M2	M3	M4	M5	M6	M7	Units
Maximum Recurrent 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 @ $T_L = 110^\circ\text{C}$	$I_{(AV)}$	1.0							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	40						30	A
Maximum Instantaneous Forward Voltage @ 1.0A	$V_F$	1.1							V
Maximum DC Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$	$I_R$				5.0				uA
					50				uA
Typical Reverse Recovery Time (Note 1)	$T_{rr}$	1.5							uS
Typical Junction Capacitance (Note 2)	$C_j$	12							pF
Non-Repetitive Peak Reverse Avalanche Energy at 25°C, $I_{AS}=1A$ , $L=10mH$	$E_{AS}$	5							mJ
Typical Thermal Resistance (Note 3)	$R_{\theta JL}$					27			°C/W
	$R_{\theta JA}$					75			
Operating Temperature Range	$T_J$	-55 to +150							°C
Storage Temperature Range	$T_{STG}$	-55 to +150							°C

- Notes:
1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$
  2. Measured at 1 MHz and Applied  $V_R=4.0$  Volts
  3. Measured on P.C. Board with 0.2" x 0.2" (5.0mm x 5.0mm) Copper Pad Areas.

RATINGS AND CHARACTERISTIC CURVES (M1 THRU M7)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

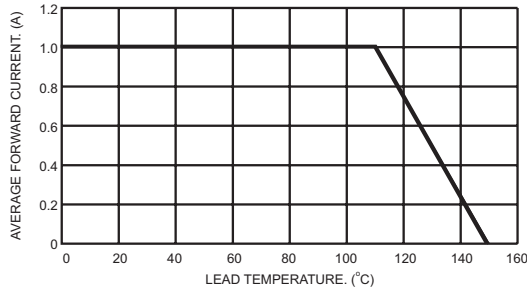


FIG.2- TYPICAL REVERSE CHARACTERISTICS

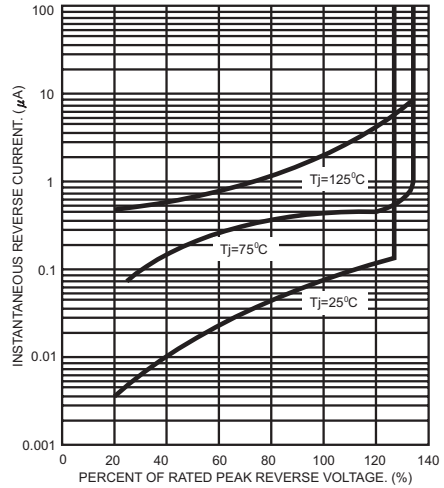


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

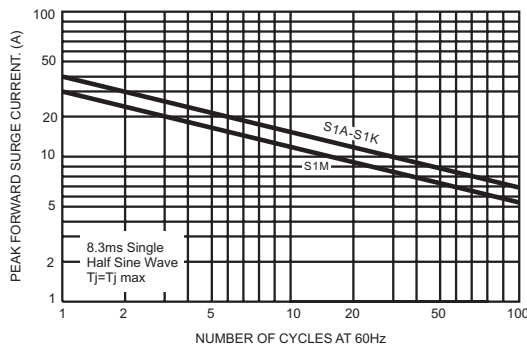


FIG.5- TYPICAL FORWARD CHARACTERISTICS

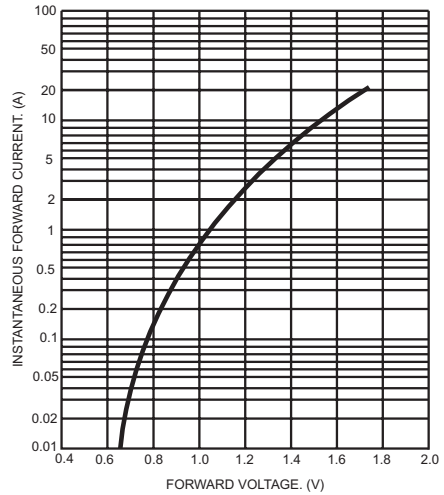


FIG.4- TYPICAL JUNCTION CAPACITANCE

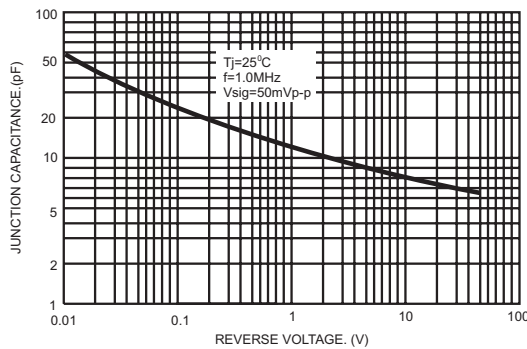


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

