

## AUTOMOTIVE GENERAL PURPOSE RECTIFIER

### Features:

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Stable, High temperature, Glass passivated junction
- -V suffix for Automotive and other applications requiring unique site and control change requirements
- PPAP capable
- AEC-Q101 qualified
- High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU



**AEC-Q101 Qualified**

### Mechanical Data:

- Case: JEDEC SMA(DO-214AC) molded plastic body
- Terminals: Solder Plated, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.002ounce, 0.064 gram

### Applications:

For use in high voltage rectifier, polarity protection, clamp applications

## MAXIMUM RATINGS

(Ratings at 25°C ambient temperature unless otherwise specified )

Parameters	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	1000	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	30	A
Operating junction temperature range	$T_J$	-55 to +150	°C
Storage temperature range	$T_{stg}$	-55 to +150	°C

## RATINGS AND CHARACTERISTIC OF S1M-V

ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	I <sub>R</sub> =10μA	T <sub>J</sub> =25°C	V <sub>BR</sub> V <sub>R</sub>	1150	-	-	V
		T <sub>J</sub> =-55°C		1000	-	-	
Instaneous forward voltage	I <sub>F</sub> =1.0A	T <sub>J</sub> = -40°C	V <sub>F</sub> <sup>1)</sup>	-	-	1.20	V
		T <sub>J</sub> =25°C		-	0.95	1.00	
		T <sub>J</sub> = 125°C		-	0.85	-	
Reverse current	V <sub>R</sub> =1000V	T <sub>J</sub> =25°C	I <sub>R</sub> <sup>2)</sup>	-	-	1	μ A
		T <sub>J</sub> = 100°C		-	-	10	
		T <sub>J</sub> = 125°C		-	-	50	
Junction capacitance	4V, 1MHz		C <sub>J</sub>	-	6.0	-	pF
Reverse Recovery Time	I <sub>F</sub> =0.5 A, I <sub>R</sub> =1.0 A, I <sub>rr</sub> =0.25 A		t <sub>rr</sub>	-	1.8	-	μ S

Notes: 1.Pulse test: 300 μ s pulse width, 1% duty cycle

2.Pulse test: pulse width ≤ 40ms

## THERMAL CHARACTERISTICS

Parameter	Symbol	SMA	Unit
Typical thermal resistance <sup>3)</sup>	R <sub>JA</sub>	88.0	°C/W
	R <sub>θJL</sub>	28.0	

3. P.C.B. mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

## AVAILABLE PACK INFORMATION

Product code	Pack	Reel Size (mm)	Quantity (pcs/reel)	Box Size LxWxH (mm)	Quantity (reel/box)	Carton Size LxWxH (mm)	Quantity (box/carton)
S1M-V	T/R	Φ330	5000	330x35x333	2	364x364x360	8

**RATINGS AND CHARACTERISTIC OF S1M-V**

FIG.1-FORWARD CURRENT DERATING CURVE

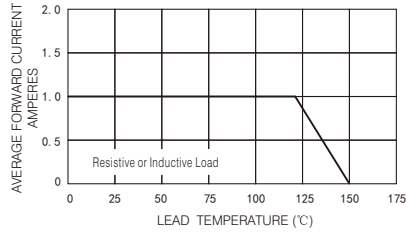


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

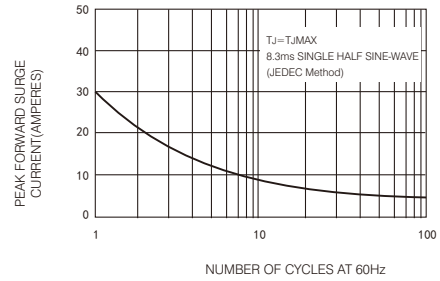


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

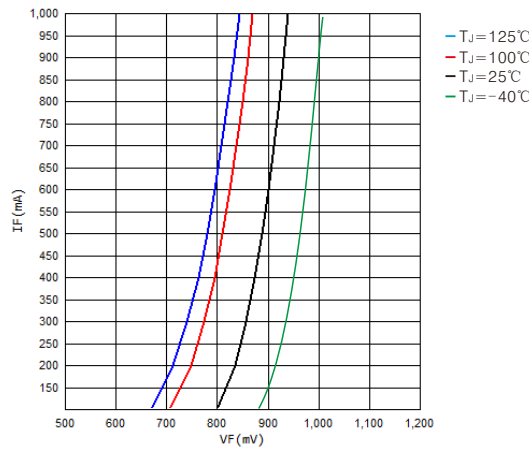


FIG.4-TYPICAL REVERSE CHARACTERISTICS

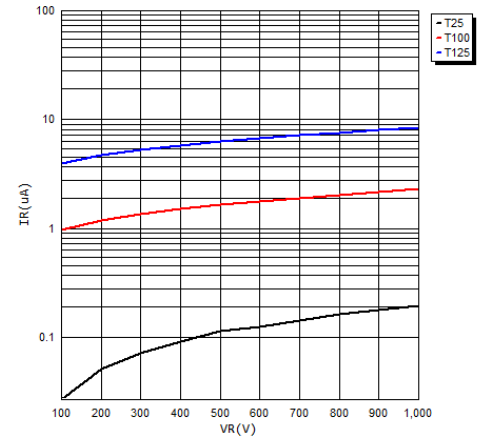
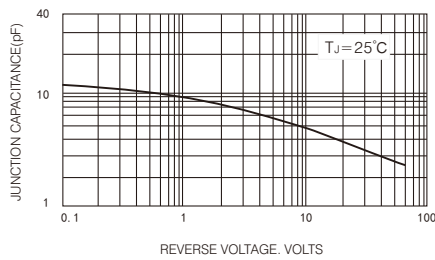
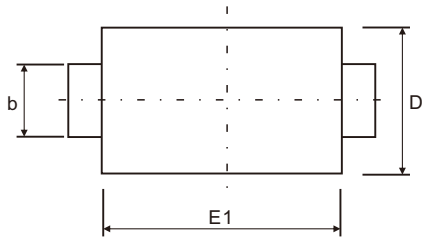


FIG.5-TYPICAL JUNCTION CAPACITANCE

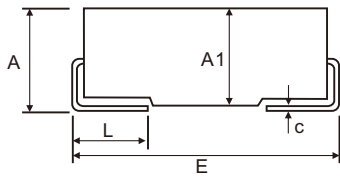


PACKAGE OUTLINE DIMENSIONS

SMA(DO-214AC)



Sym	Value(millimeters)		
	Min	Typ	Max
A	1.90	-	2.29
A1	1.83	-	2.16
b	1.25	-	1.65
c	0.15	-	0.31
D	2.40	-	2.80
E	4.70	-	5.28
E1	3.99	-	4.70
L	0.76	-	1.52



Suggested PAD Layout

