

# OM SENI

## SURFACE MOUNT ULTRA FAST RECTIFIER

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Ultra fast switching for high efficiency
- ◆ 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

### US3AB THRU US3MB

Reverse Voltage - 50 to 1000 Volts Forward Current - 3.0 Ampere



DO-214AA (SMB)

### Mechanical Data

**Case :** JEDEC DO-214AA/SMB Molded plastic body  
**Terminals :** Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity :** Polarity symbol marking on body  
**Mounting Position :** Any  
**Weight :** 0.003 ounce, 0.095grams

### 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%.

Parameter	SYMBOLS	US3AB	US3BB	US3DB	US3GB	US3JB	US3KB	US3MB	UNITS
Marking Code									
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum average forward rectified current	I <sub>(AV)</sub>	3							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	90							A
Maximum instantaneous forward voltage at 3A	V <sub>F</sub>	1		1.3		1.68		V	
Maximum DC reverse current at rated DC blocking voltage T <sub>A</sub> =25°C T <sub>A</sub> =125°C	I <sub>R</sub>	5 100							μA
Maximum reverse recovery time (NOTE 1)	t <sub>rr</sub>	50				75			ns
Typical junction capacitance (NOTE 2)	C <sub>J</sub>	75				50			pF
Typical thermal resistance (NOTE 3)	R <sub>θJA</sub>	45							°C/W
	R <sub>θJC</sub>	15							
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150							°C

**Note:** 1. Reverse recovery condition I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A  
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. P.C.B. mounted with 2.0"x2.0" (5.0x5.0cm) copper pad areas

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## Ratings And Characteristic Curves

Fig.1 Maximum Average Forward Current Rating

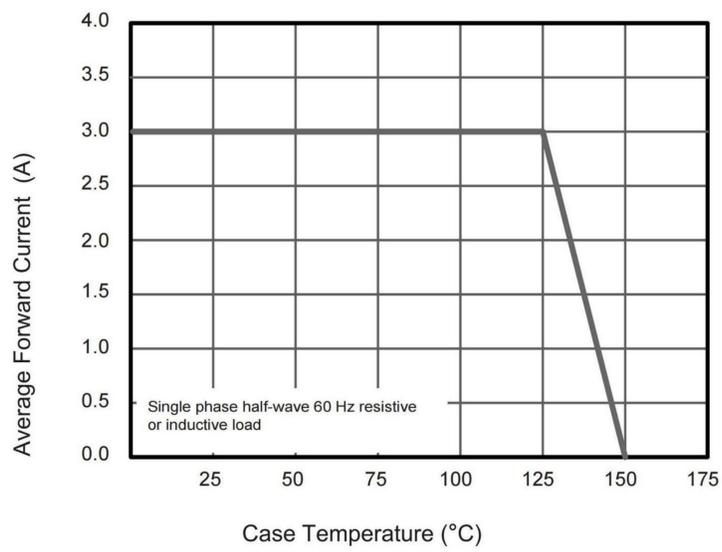


Fig.2 Typical Reverse Characteristics

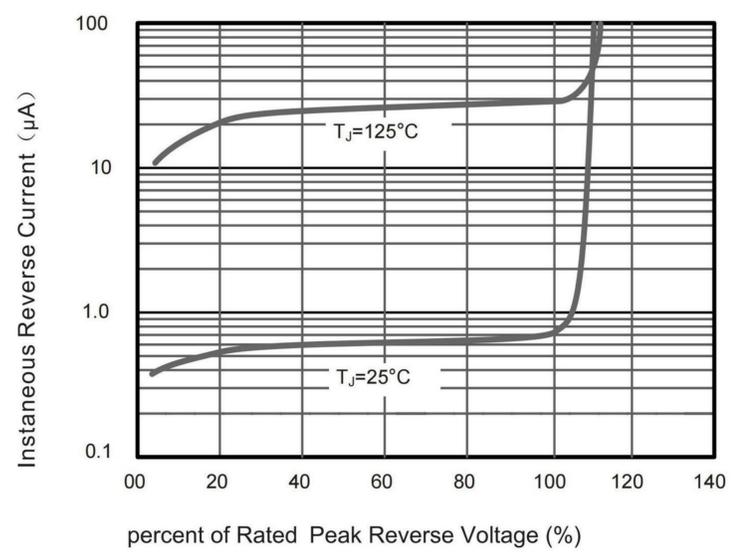


Fig.3 Typical Forward Characteristics

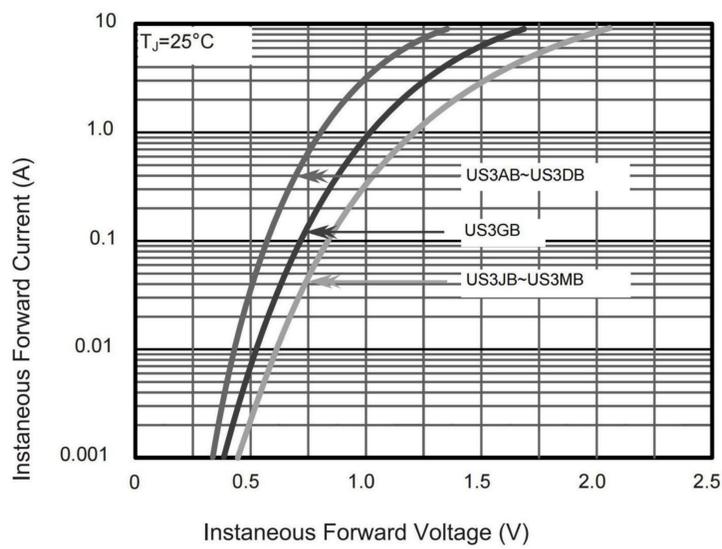
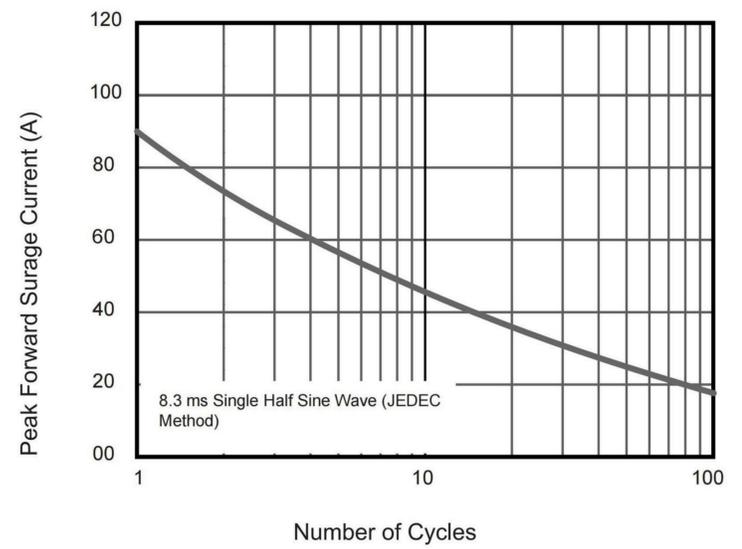


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



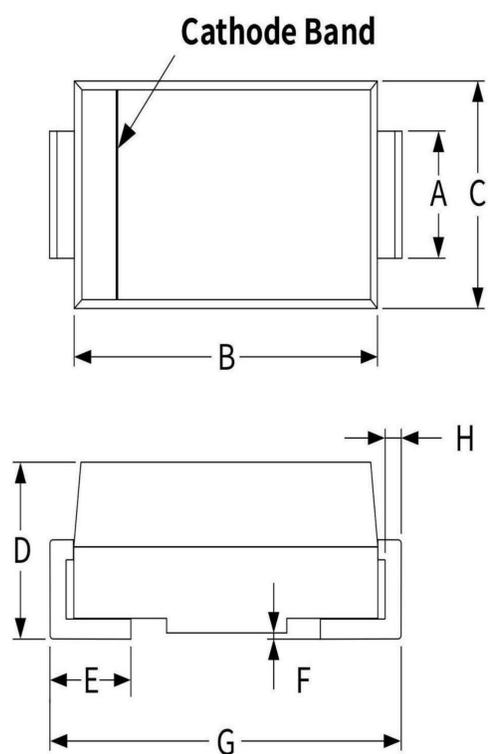
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## Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMB	R3	0.098	3000	6000	30000	13"

## Package Outline Dimensions (SMB/D0-214AA)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.85	2.21	0.073	0.087
B	4.25	4.85	0.167	0.191
C	3.30	3.94	0.130	0.155
D	2.15	2.65	0.085	0.104
E	0.75	1.52	0.030	0.060
F	-	0.203	-	0.008
G	5.08	5.59	0.200	0.220
H	0.15	0.31	0.006	0.012



## Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
M	2.26	-	0.089	-
J	2.10	-	0.085	-
K	-	2.74	-	0.107

