



## SURFACE MOUNT GLASS PASSIVATED FAST RECOVERY SILICON RECTIFIER

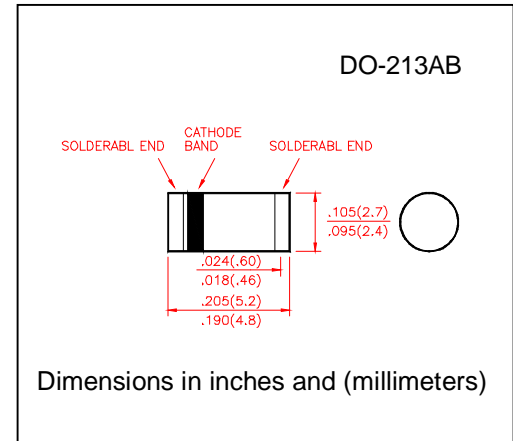
<b>USM101 THRU USM108</b>	<b>VOLTAGE RANGE</b>	50 to 1000 Volts
	<b>CURRENT</b>	1.0 Ampere

### FEATURES

- For surface mounted applications
- Glass passivated chip junction
- Low leakage current
- Fast switching
- Plastic package has underwrites laboratory flammability Classification 94V-0
- High temperature soldering guaranteed  
250°C/10 second at terminals

### MECHANICAL DATA

- Case: molded plastic
- Polarity: band indicate cathode
- Mounting position: Any
- Weight: 0.12 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 derate current by 20%

	SYMBOLS	USM 101	USM 102	USM 103	USM 104	USM 105	USM 106	USM 107	USM 108	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	300	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	210	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	300	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at $T_T=100^\circ\text{C}$	$I_{(AV)}$	1.0								Amps
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30								Amps
Maximum Instantaneous Forward Voltage at 1.0A	$V_F$	1.0		1.3		1.7				Volts
Maximum DC Reverse Current at rated DC Blocking Voltage at	$T_A = 25^\circ\text{C}$	5.0								$\mu\text{A}$
	$T_A = 125^\circ\text{C}$	100								
Typical Reverse Recovery Time (NOTE 1)	$T_{rr}$	50				100				ns
Typical Junction Capacitance (Note 2)	$C_J$	15								PF
Typical Thermal Resistance (Note 3)	$R_{\theta JT}$	40								$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150								$^\circ\text{C}$

#### Notes:

1. Reverse recovery test conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
3. Thermal resistance Junction to terminal 6.0mm<sup>2</sup> copper pads to each terminal.



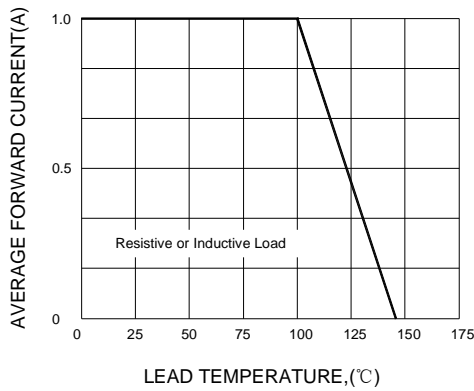
**SURFACE MOUNT GLASS PASSIVATED FAST RECOVERY SILICON RECTIFIER**

**USM101 THRU USM108**

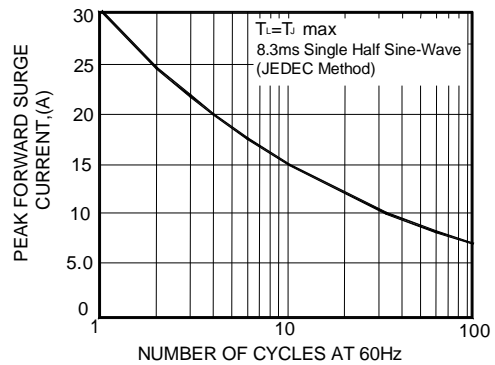
**VOLTAGE RANGE**      50 to 1000 Volts  
**CURRENT**              1.0 Ampere

**RATINGS AND CHARACTERISTIC CURVES USM101 THRU USM108**

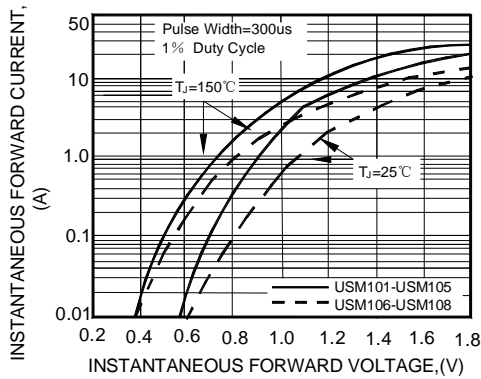
**FIG.1-FORWARD CURRENT DERATING CURVE**



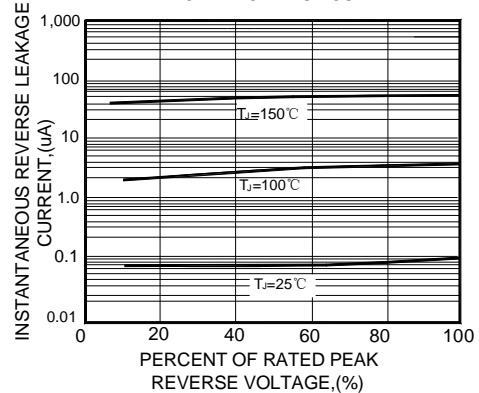
**FIG.2-MAXIMUM NON-PERITITIVE PEAK FORWARD SUPGE CURRENT**



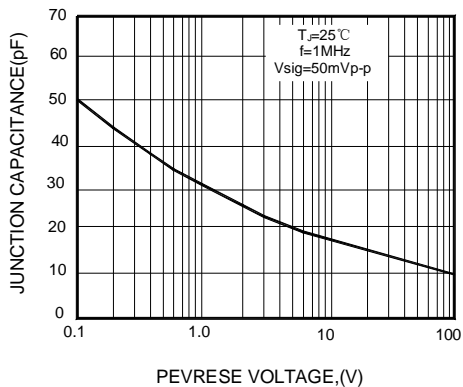
**FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG.4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS**



**FIG.5-TYPICAL JUNCTION CAPACITANCE**



**FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE**

