



# DATA SHEET

## ER1A~ER1J

### SURFACE MOUNT SUPERFAST RECTIFIER

**VOLTAGE** 50 to 600 Volts **CURRENT** 1.0 Amperes

**SMB/DO-214AA**

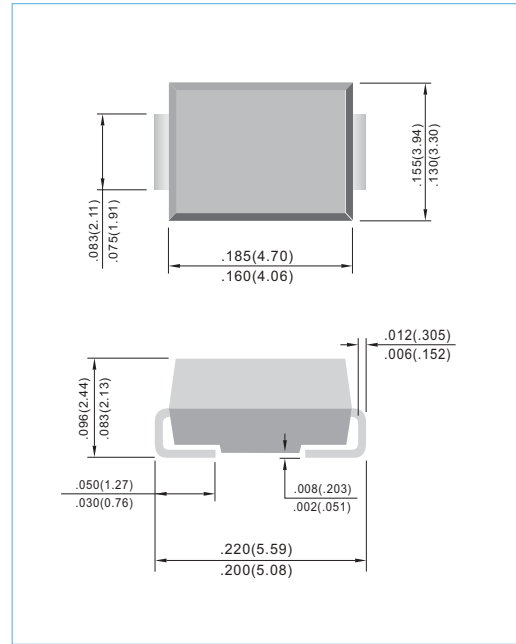
Unit: inch (mm)

#### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Superfast recovery times for high efficiency.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction
- Both normal and Pb free product are available :  
Normal : 80~95% Sn, 5~20% Pb  
Pb free: 98.5% Sn above

#### MECHANICAL DATA

Case: JEDEC DO-214AA molded plastic  
 Terminals: Solder plated, solderable per MIL-STD-750, Method 2026  
 Polarity: Indicated by cathode band  
 Standard packaging: 12mm tape (EIA-481)  
 Weight: 0.003 ounce, 0.093 gram



#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings 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%.

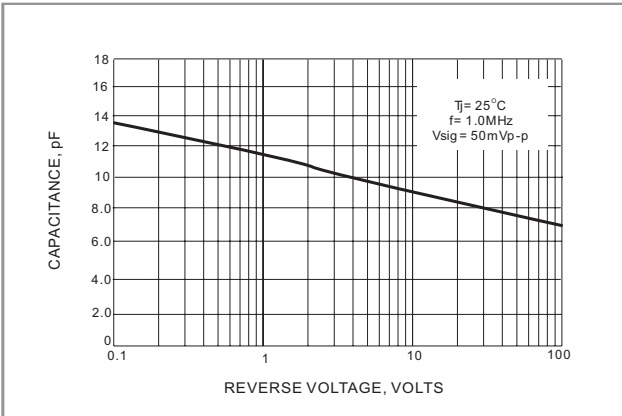
PARAMETER	SYMBOL	ER1A	ER1B	ER1C	ER1D	ER1E	ER1G	ER1J	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	V
Maximum Average Forward Current .375" (9.5mm) lead length at $T_L=100^\circ\text{C}$	$I_{AV}$	1.0							A
Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30							A
Maximum Forward Voltage at 1.0A	$V_F$	0.95				1.25		1.7	V
Maximum DC Reverse Current $T_a=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_a=100^\circ\text{C}$	$I_R$					5.0		150	$\mu\text{A}$
Maximum Reverse Recovery Time (NOTE 1)	$T_{RR}$					35			ns
Typical Junction capacitance (Note 2)	$C_J$					10.0			pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JL}$					34			$^\circ\text{C} / \text{W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-50 TO +150							$^\circ\text{C}$

**NOTES:**

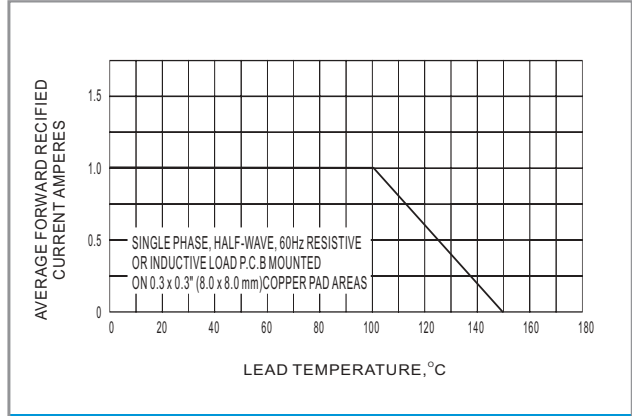
- 1.Reverse Recovery Tset Conditions: $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
- 2.Measured at 1.0MHz and applied reverse voltage of 4.0 volts.
- 3.8.0mm<sup>2</sup>(.013mm thick) land areas.



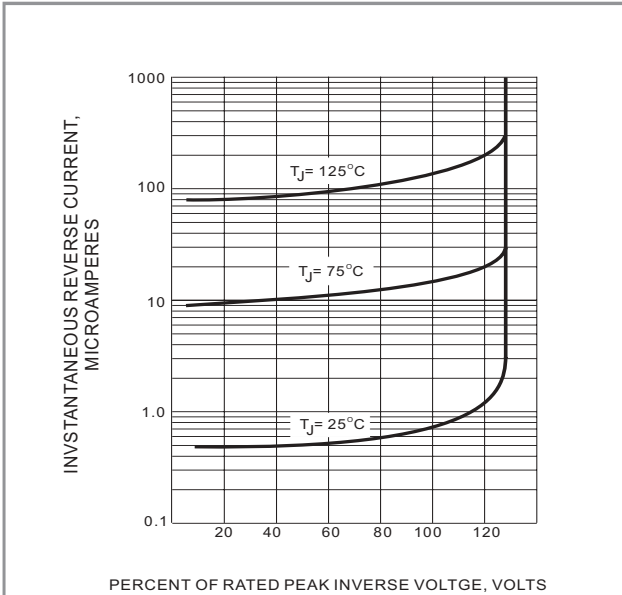
**RATING AND CHARACTERISTIC CURVES**



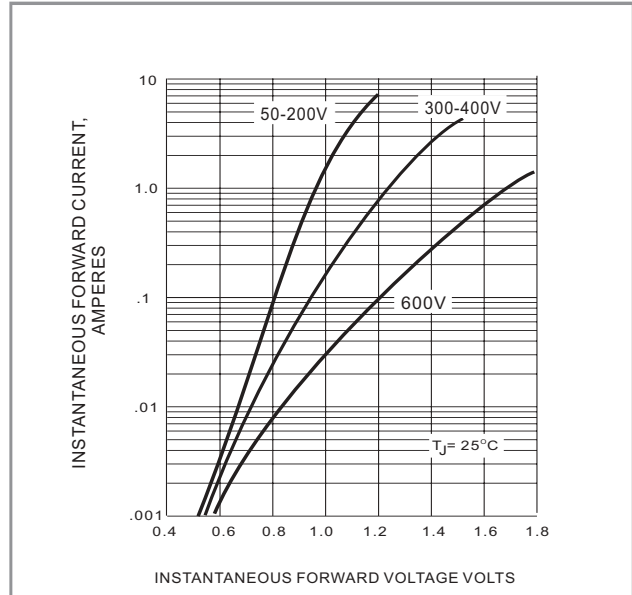
**FIG. 1 TYPICAL JUNCTION CAPACITANCE**



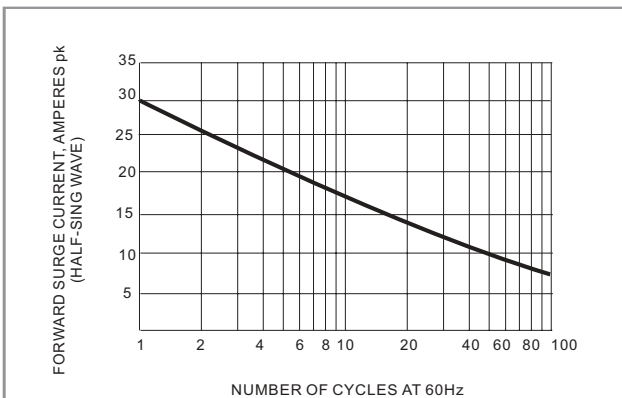
**FIG. 2 MAXIMUM AVERAGE FORWARD CURRENT DERATING**



**FIG. 3 TYPICAL REVERSE CHARACTERISTICS**



**FIG. 4 TYPICAL FORWARD CHARACTERISTICS**



**FIG. 5 MAXIMUM NON-REPETITIVE SURGE CURRENT**