



**DC COMPONENTS CO., LTD.**

RECTIFIER SPECIALISTS

ER1A  
THRU  
ER1J

**TECHNICAL SPECIFICATIONS OF SURFACE MOUNT SUPER FAST RECTIFIER**

VOLTAGE RANGE - 50 to 600 Volts

CURRENT - 1.0 Ampere

**FEATURES**

- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Glass passivated junction

**MECHANICAL DATA**

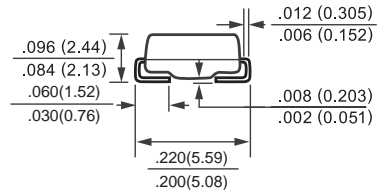
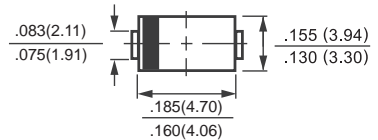
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- \* Polarity: As marked
- \* Mounting position: Any
- \* Weight: 0.093 gram

**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%.



SMB (DO-214AA)



Dimensions in inches and (millimeters)

|   | SYMBOL                            | ER1A                      | ER1B | ER1C | ER1D | ER1E | ER1G | ER1J | UNITS |       |
|---|-----------------------------------|---------------------------|------|------|------|------|------|------|-------|-------|
| Maximum Recurrent Peak Reverse Voltage  | V <sub>RRM</sub>                  | 50                        | 100  | 150  | 200  | 300  | 400  | 600  | Volts |       |
| Maximum RMS Voltage   | V <sub>RMS</sub>                  | 35                        | 70   | 105  | 140  | 210  | 280  | 420  | Volts |       |
| Maximum DC Blocking Voltage   | V <sub>DC</sub>                   | 50                        | 100  | 150  | 200  | 300  | 400  | 600  | Volts |       |
| Maximum Average Forward Rectified Current at T <sub>A</sub> = 55 °C                               | I <sub>O</sub>                    | 1.0                       |      |      |      |      |      |      | Amps  |       |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                  | 30                        |      |      |      |      |      |      | Amps  |       |
| Maximum Instantaneous Forward Voltage at 1.0A DC  | V <sub>F</sub>                    | 0.95                      |      |      | 1.25 |      | 1.7  |      | Volts |       |
| Maximum DC Reverse Current at Rated DC Blocking Voltage   | I <sub>R</sub>                    | @ T <sub>A</sub> = 25 °C  | 5.0  |      |      |      |      |      |       | μAmps |
|   |                                   | @ T <sub>A</sub> = 100 °C | 100  |      |      |      |      |      |       |       |
| Maximum Reverse Recovery Time (Note 3)  | t <sub>rr</sub>                   |                           |      |      | 35   |      |      |      |       | nSec  |
| Typical Thermal Resistance (Note 2)   | R <sub>θJL</sub>                  |                           |      |      | 10   |      |      |      |       | °C/W  |
| Typical Junction Capacitance (Note 1)   | C <sub>J</sub>                    |                           |      |      | 34   |      |      |      |       | pF    |
| Operating and Storage Temperature Range   | T <sub>J</sub> , T <sub>STG</sub> | -50 to + 150              |      |      |      |      |      |      | °C    |       |

- NOTES : 1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.  
2. Thermal Resistance (Junction to Ambient), 0.2x0.2in<sup>2</sup> (5X5mm<sup>2</sup>) copper pads to each terminal.  
3. Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.

# RATING AND CHARACTERISTIC CURVES ( ER1A THRU ER1J )

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

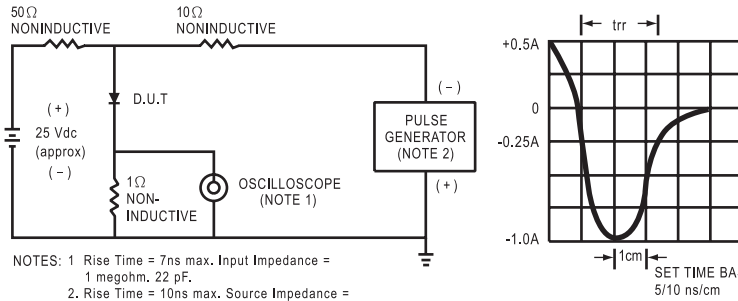


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

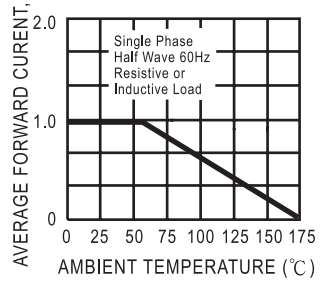


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

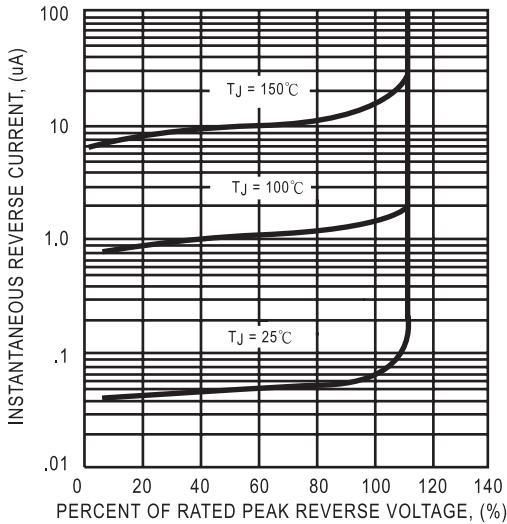


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

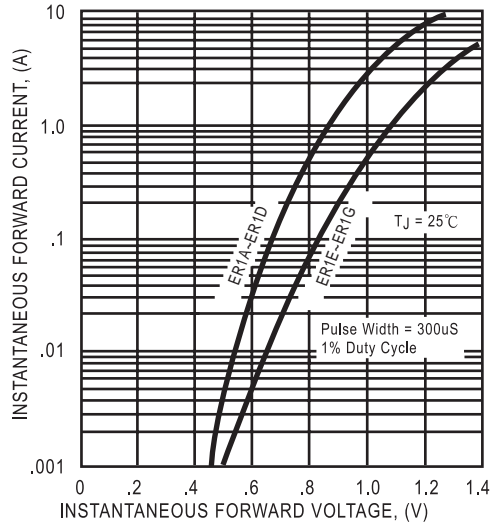


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

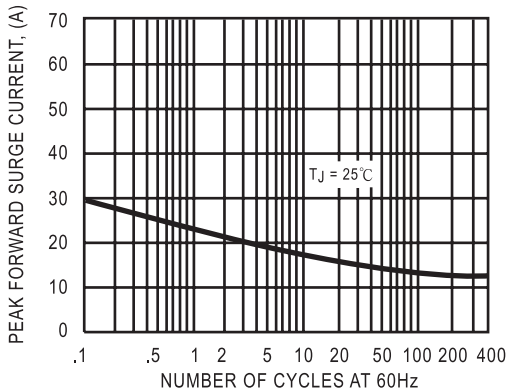


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

