



# ES1AWG~ES1JWG

## SURFACE MOUNT SUPERFAST RECTIFIER

**VOLTAGE** 50 to 600 Volt **CURRENT** 1 Ampere

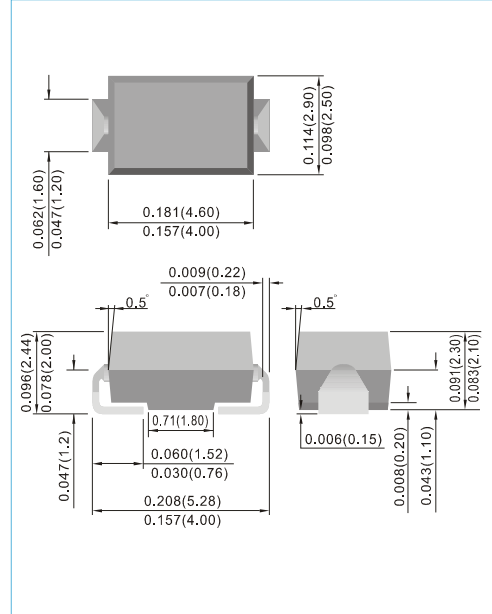
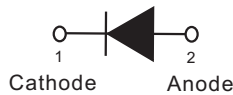
**SMA(W)** Unit : inch(mm)

### FEATURES

- For surface mounted applications in order to optimize board space
- Easy pick and place
- Superfast recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case: SMA(W) molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard packaging: 12mm tape (EIA-481)
- Weight: 0.0023 ounce, 0.0679 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%.

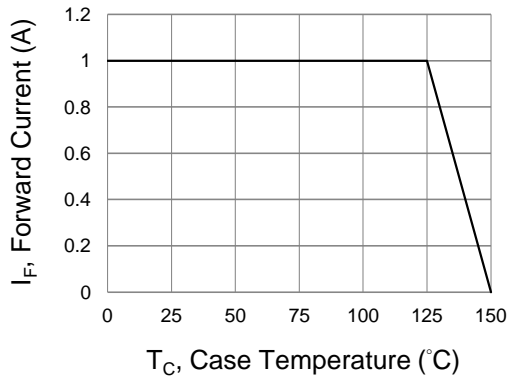
| PARAMETER   | SYMBOL                             | ES1AWG      | ES1BWG | ES1CWG | ES1DWG | ES1EWG    | ES1GWG | ES1JWG           | UNITS        |
|---|------------------------------------|-------------|--------|--------|--------|-----------|--------|------------------|--------------|
| Marking   |                                    | ES1A        | ES1B   | ES1C   | ES1D   | ES1E      | ES1G   | ES1J             |              |
| 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   | $I_{F(AV)}$                        | 1           |        |        |        |           |        |                  | A            |
| Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$                          | 30          |        |        |        |           |        |                  | A            |
| Maximum Forward Voltage at 1A   | $V_F$                              | 0.95        |        |        |        | 1.25      |        | 1.7              | V            |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                             | $I_R$                              | 1           |        |        |        |           |        |                  | $\mu$ A      |
| Typical Junction Capacitance  | $C_J$                              | 18          |        |        |        |           |        |                  | pF           |
| Typical Thermal Resistance (Note 1)<br>(Note 2)                                     | $R_{\theta JA}$<br>$R_{\theta JL}$ |             |        |        |        | 150<br>22 |        | $^{\circ}$ C / W |              |
| Maximum Reverse Recovery Time (Note 3)  | $t_{rr}$                           |             |        |        |        | 35        |        | ns               |              |
| Operating Junction and Storage Temperature Range                                    | $T_J, T_{STG}$                     | -55 to +150 |        |        |        |           |        |                  | $^{\circ}$ C |

### NOTES :

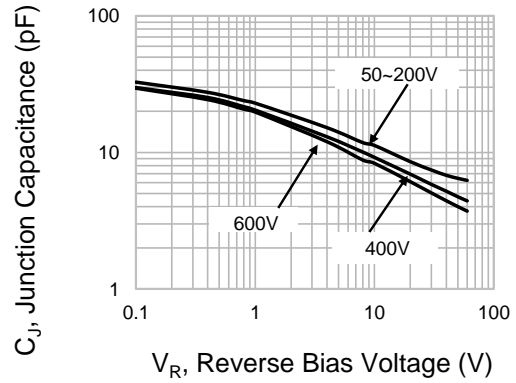
1. Mounted on a FR4 PCB, single-sided copper, mini pad.
2. Mounted on a FR4 PCB, single-sided copper, with 76.2 x 114.3mm copper pad area.
3. Reverse Recovery Tset Conditions:  $I_F=0.5A, I_R=-1A, I_{rr}=-0.25A$ .



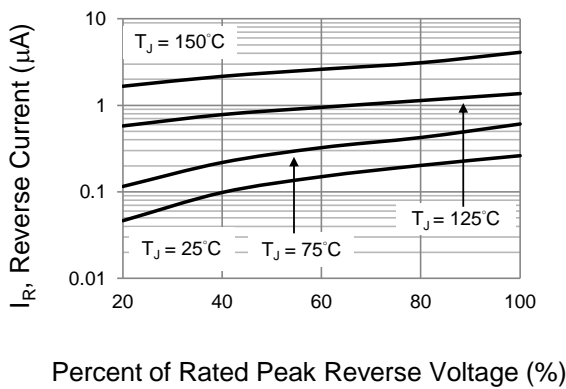
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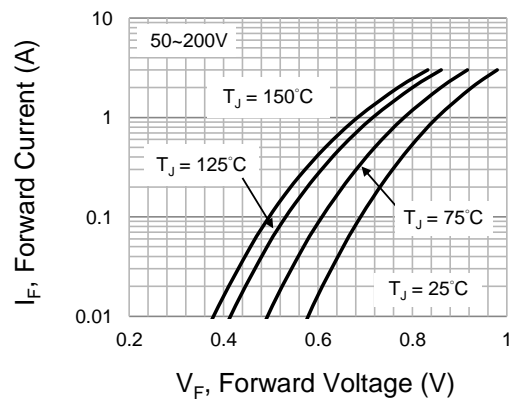
**Fig.1 Forward Current Derating Curve**



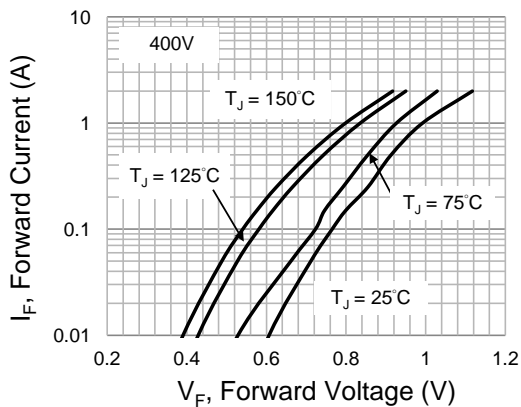
**Fig.2 Typical Junction Capacitance**



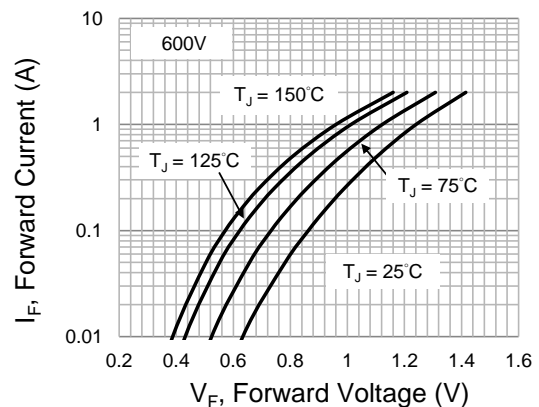
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Forward Characteristics**

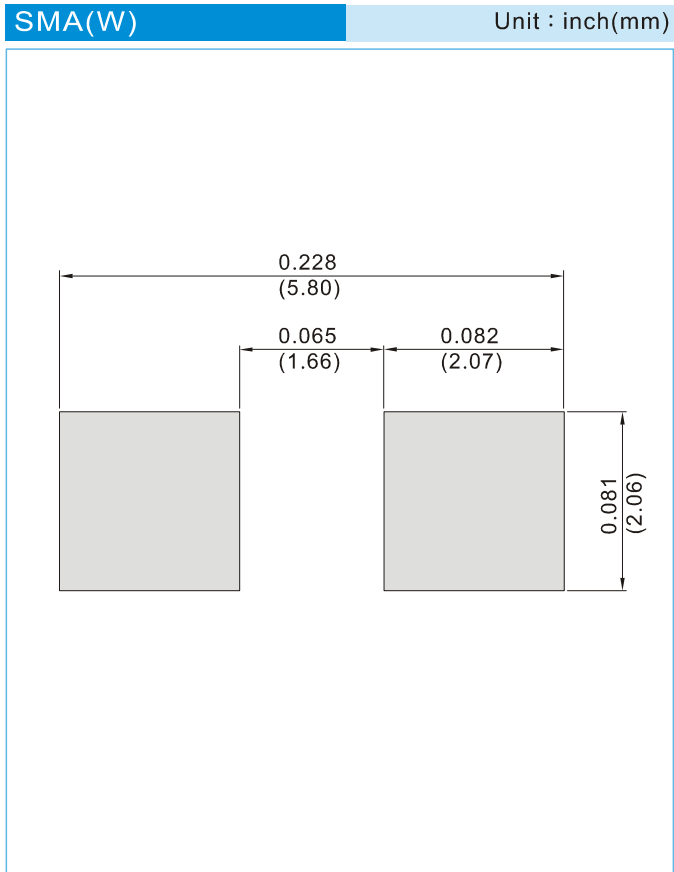


**Fig.6 Typical Forward Characteristics**



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information  
T/R - 7.5K per 13" plastic Reel  
T/R - 1.8K per 7" plastic Reel



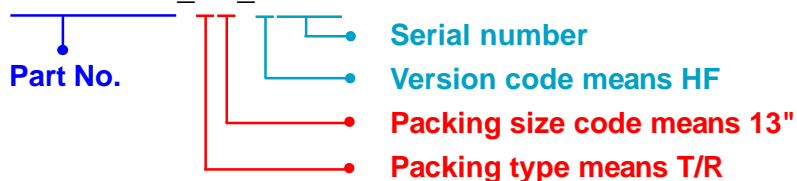
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## Part No\_packing code\_Version

ES1AWG\_R1\_00001  
ES1AWG\_R1\_10001  
ES1AWG\_R2\_00001  
ES1AWG\_R2\_10001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> -5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | <b>HF</b>                 | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | <b>RoHS</b>               | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                           |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                           |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                           |                      |                                       |



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