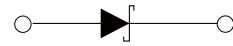


## FEATURES

- | Low Power Loss High Efficiency
- | Ideal For Automated Placement
- | Guard Ring For Over-voltage Protection
- | High Surge Current Capability
- | Meet AEC-Q101 Requirements



DO-214AC(SMA)



Schematic Symbol

## MECHANICAL DATA

- | Case: DO-214AC (SMA)
- | Polarity: Color Band Denotes Cathode End
- | Mounting Position: Any

## APPROVALS

|      |                                    |
|------|------------------------------------|
| RoHS | Compliance with 2011/65/EU         |
| HF   | Compliance with IEC61249-2-21:2003 |

## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

| Parameter                                                                          | Symbol          | SS310ALF    | Unit                        |
|------------------------------------------------------------------------------------|-----------------|-------------|-----------------------------|
| Marking                                                                            |                 | SS310L      |                             |
| Maximum repetitive peak reverse voltage                                            | $V_{RRM}$       | 100         | V                           |
| Maximum RMS voltage                                                                | $V_{RMS}$       | 70          | V                           |
| Maximum DC blocking voltage                                                        | $V_{DC}$        | 100         | V                           |
| Maximum average forward rectified current at $T_L=100^{\circ}\text{C}$             | $I_{(AV)}$      | 3.0         | A                           |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$       | 100         | A                           |
| Typical thermal resistance                                                         | $R_{\theta JA}$ | 65          | $^{\circ}\text{C}/\text{W}$ |
|                                                                                    | $R_{\theta JL}$ | 25          | $^{\circ}\text{C}/\text{W}$ |
| Operating junction temperature range                                               | $T_J$           | -55 to +150 | $^{\circ}\text{C}$          |
| Storage temperature range                                                          | $T_{STG}$       | -55 to +150 | $^{\circ}\text{C}$          |

### Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

## ELECTRICAL CHARACTERISTICS ( $T_A=25\text{ }^{\circ}\text{C}$ )

| Parameter                                     | Symbol | TYP. | MAX  | Unit          |
|-----------------------------------------------|--------|------|------|---------------|
| Maximum instantaneous forward voltage at 3.0A | $V_F$  | 0.56 | 0.65 | V             |
| Maximum DC reverse current                    | $I_R$  | 20   | 100  | $\mu\text{A}$ |
| Maximum DC reverse current                    |        | 5    | 50   | mA            |

## CHARACTERISTIC CURVES

Fig. 1- Derating Curve Output Rectified Current

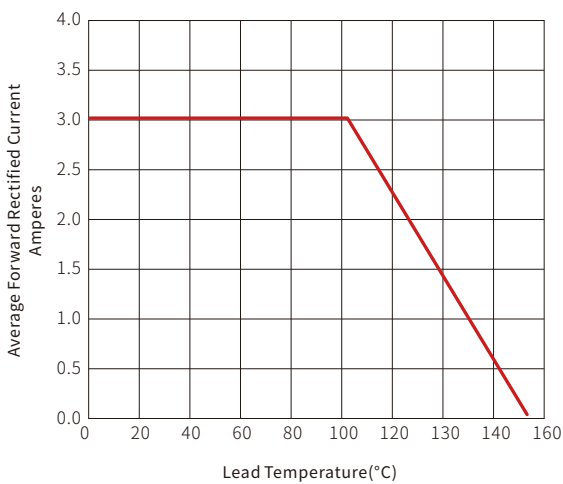


Fig. 2-maximum Non-repetitive Peak Forward Surge Current Perleg

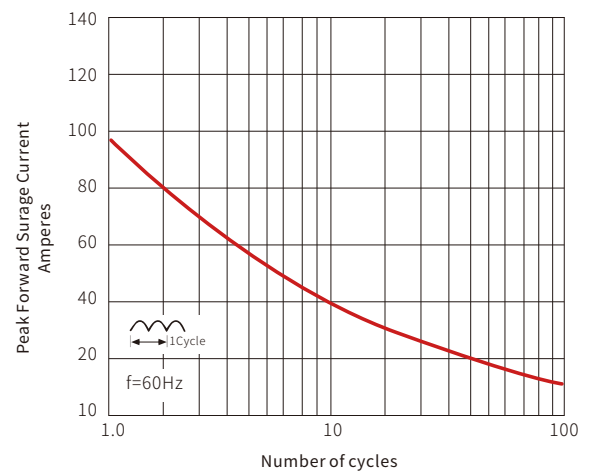


Fig. 3-Typical Forward Voltage Characteristics

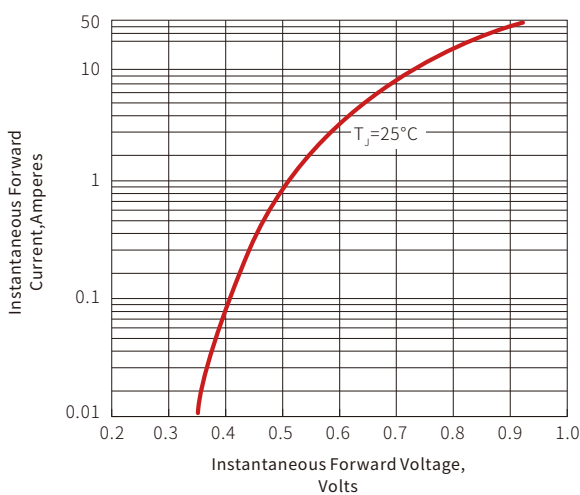
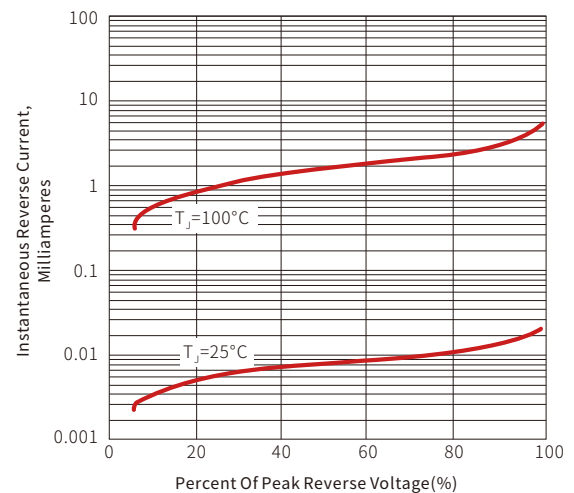
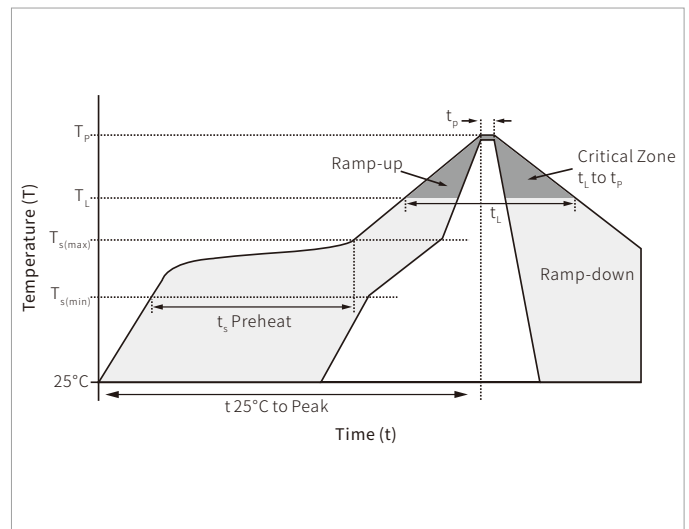


Fig. 4-Typical Reverse Leakage Characteristics

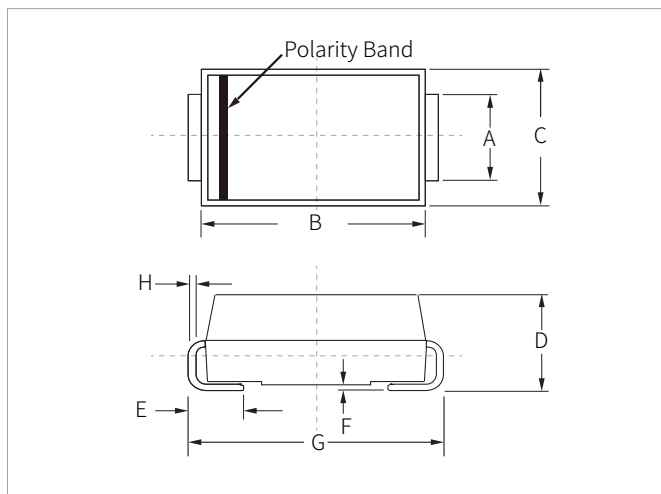


## SOLDERING PARAMETERS

| Reflow Condition                                      |                                  | Lead-free assembly |
|-------------------------------------------------------|----------------------------------|--------------------|
| Pre Heat                                              | Temperature Max ( $T_{s(min)}$ ) | 150°C              |
|                                                       | Temperature Max ( $T_{s(max)}$ ) | 200°C              |
|                                                       | Time (min to max) ( $t_s$ )      | 60 – 180 secs      |
| Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak |                                  | 3°C/second max     |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                  |                                  | 3°C/second max     |
| Reflow                                                | Temperature ( $T_L$ ) (Liquidus) | 217°C              |
|                                                       | Time (min to max) ( $t_L$ )      | 60 – 150 seconds   |
| Peak Temperature ( $T_p$ )                            |                                  | 260°C              |
| Time within 5°C of actual peak Temperature ( $t_p$ )  |                                  | 20 – 40 seconds    |
| Ramp-down Rate                                        |                                  | 6°C/second max     |
| Time 25°C to peak Temperature ( $T_p$ )               |                                  | 8 minutes max.     |
| Do not exceed                                         |                                  | 260°C              |

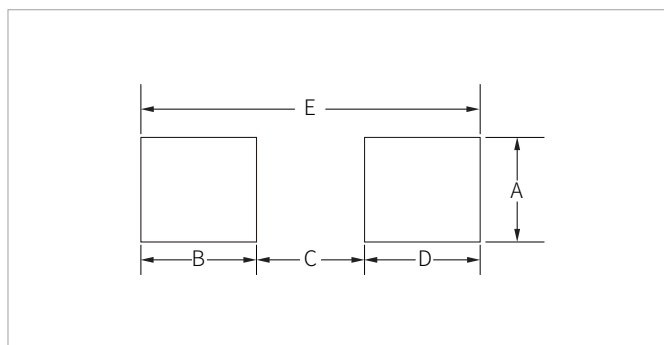


## DO-214AC(SMA) PACKAGE INFORMATION



| Ref. | Millimeters |      | Inches |       |
|------|-------------|------|--------|-------|
|      | Min.        | Max. | Min.   | Max.  |
| A    | 1.20        | 1.60 | 0.047  | 0.063 |
| B    | 4.20        | 4.60 | 0.165  | 0.181 |
| C    | 2.40        | 2.80 | 0.094  | 0.110 |
| D    | 2.00        | 2.40 | 0.079  | 0.094 |
| E    | 0.76        | 1.52 | 0.030  | 0.060 |
| F    | 0.02        | 0.20 | 0.001  | 0.008 |
| G    | 4.85        | 5.25 | 0.191  | 0.207 |
| H    | 0.15        | 0.30 | 0.006  | 0.012 |

## RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters |      | Inches   |       |
|------|-------------|------|----------|-------|
|      | Min.        | Max. | Min.     | Max.  |
| A    | 1.63        | -    | 0.064    | -     |
| B    | 1.45        | -    | 0.057    | -     |
| C    | -           | 2.80 | -        | 0.090 |
| D    | 1.45        | -    | 0.057    | -     |
| E    | 5.28REF     |      | 0.208REF |       |

## ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| SS310ALFQ   | DO-214AC(SMA)     | 5000PCS  | 13"       |

**Headquarters**

No.3387 Shendu Road  
Pujiang I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

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