

## Features

- Halogen Free. "Green" Device (Note 1)
- High Current Capability
- Low Profile Package
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

| Parameter  | Symbol      | Value  |        |        |        |        |        |         |          |          |   | Unit             |
|--|-------------|--------|--------|--------|--------|--------|--------|---------|----------|----------|---|------------------|
|  |             | SS12FL | SS13FL | SS14FL | SS15FL | SS16FL | SS18FL | SS110FL | SS1150FL | SS1200FL |   |                  |
| Peak Repetitive Reverse Voltage                          | $V_{RRM}$   |        |        |        |        |        |        |         |          |          |   | V                |
| Working Peak Reverse Voltage                             | $V_{RWM}$   | 20     | 30     | 40     | 50     | 60     | 80     | 100     | 150      | 200      |   |                  |
| DC Blocking Voltage                                      | $V_R$       |        |        |        |        |        |        |         |          |          |   |                  |
| RMS Reverse Voltage                                      | $V_{RMS}$   | 14     | 21     | 28     | 35     | 42     | 56     | 70      | 105      | 140      | V |                  |
| Average Rectified Forward Current                        | $I_{F(AV)}$ | 1      |        |        |        |        |        |         |          |          |   | A                |
| Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave | $I_{FSM}$   | 30     |        |        |        |        |        |         |          |          |   | A                |
| Current Squared Time @ $1ms \leq t \leq 8.3ms$           | $I^2t$      | 3.735  |        |        |        |        |        |         |          |          |   | A <sup>2</sup> s |

## Marking code

| Part Number | Marking Code |
|-------------|--------------|
| SS12FL      | SS12         |
| SS13FL      | SS13         |
| SS14FL      | SS14         |
| SS15FL      | SS15         |
| SS16FL      | SS16         |
| SS18FL      | SS18         |
| SS110FL     | SS110        |
| SS1150FL    | S1150        |
| SS1200FL    | S1200        |

## Internal Structure

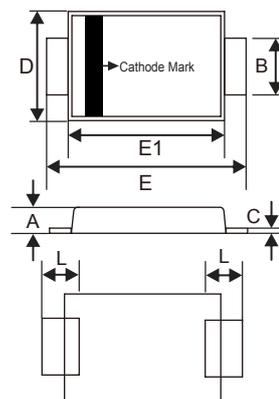
| Pin | Description | Simplified Outline                             | Graphic Symbol |
|-----|-------------|--|----------------|
| 1   | Cathode     | <p>MCC<br/>XXXX</p> <p>XXXX = Marking code</p> |                |
| 2   | Anode       |  |                |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High temperature solder exemption applied, see EU directive annex 7a.

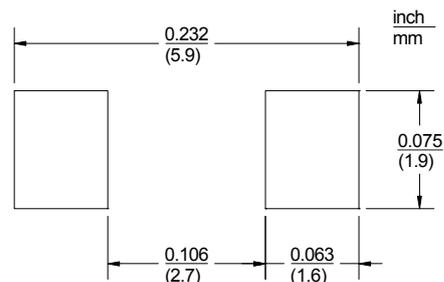
**1 Amp**  
**Gi fZUW' Aci bh**  
**GW ch\_mIF YWjZyF**  
**&0 to &00 Volts**

## DO-221AC(SMA-FL)



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.035  | 0.049 | 0.90 | 1.25 |      |
| B   | 0.049  | 0.065 | 1.25 | 1.65 |      |
| C   | 0.004  | 0.016 | 0.10 | 0.40 |      |
| D   | 0.089  | 0.116 | 2.25 | 2.95 |      |
| E   | 0.173  | 0.220 | 4.40 | 5.60 |      |
| E1  | 0.126  | 0.181 | 3.20 | 4.60 |      |
| L   | 0.020  | 0.059 | 0.50 | 1.50 |      |

## Suggested Solder Pad Layout



## Thermal characteristics

| Symbol        | Parameter                                   | Conditions        | Min | Typ | Max | Unit |
|---------------|---|-------------------|-----|-----|-----|------|
| $T_J$         | Operating Junction Temperature Range        | SS12FL ~ SS14FL   | -55 |     | 125 | °C   |
| $T_J$         | Operating Junction Temperature Range        | SS15FL ~ SS1200FL | -55 |     | 150 | °C   |
| $T_{stg}$     | Storage Temperature Range                   |                   | -55 |     | 150 | °C   |
| $R_{th(J-L)}$ | Thermal Resistance from Junction to Lead    | Note 1            |     | 18  |     | °C/W |
| $R_{th(J-A)}$ | Thermal Resistance from Junction to Ambient | Note 1            |     | 70  |     | °C/W |

Note:

1. Mounted on P.C.B. with 8mm\*8mm copper pad areas.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter   | Symbol | Test Conditions  | Min | Typ                   | Max                          | Unit |
|---|--------|--|-----|-----------------------|------------------------------|------|
| Forward Voltage<br>SS12FL ~ SS14FL<br>SS15FL ~ SS16FL<br>SS18FL ~ SS110FL<br>SS1150FL ~ SS1200FL      | $V_F$  | $I_F=1A; T_J=25^\circ C$   |     |                       | 0.50<br>0.70<br>0.85<br>0.90 | V    |
| Reverse Current<br>SS12FL ~ SS16FL<br>SS18FL ~ SS1200FL   | $I_R$  | at Rated $V_R; T_J=25^\circ C$<br>at Rated $V_R; T_J=125^\circ C$<br>at Rated $V_R; T_J=25^\circ C$<br>at Rated $V_R; T_J=125^\circ C$ |     |                       | 0.1<br>20<br>0.01<br>5       | mA   |
| Junction Capacitance<br>SS12FL ~ SS14FL<br>SS15FL ~ SS16FL<br>SS18FL ~ SS110FL<br>SS1150FL ~ SS1200FL | $C_J$  | $V_R=4V; f=1MHz; T_J=25^\circ C$   |     | 125<br>90<br>60<br>50 |                              | pF   |

**Curve Characteristics**

Fig. 1 - Forward Current Derating Curve

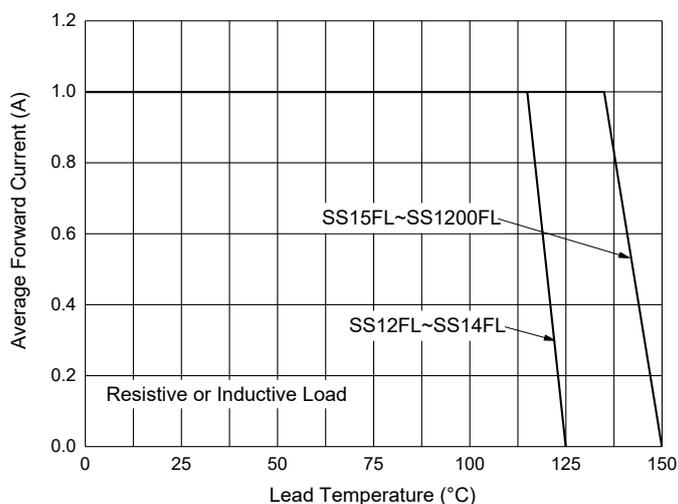


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

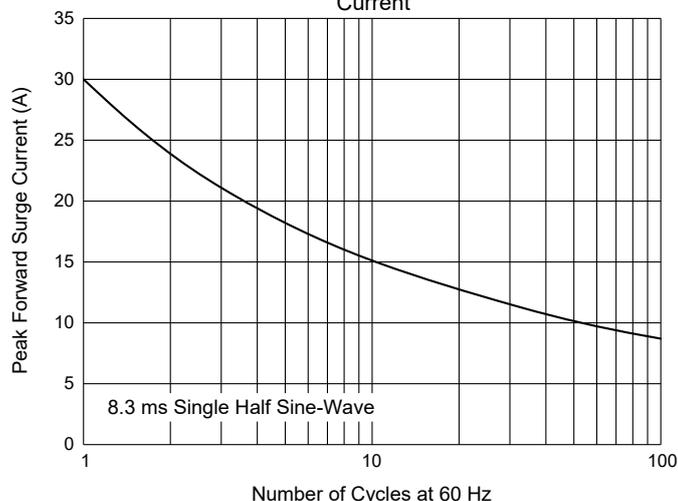


Fig. 3 - Typical Forward Characteristics

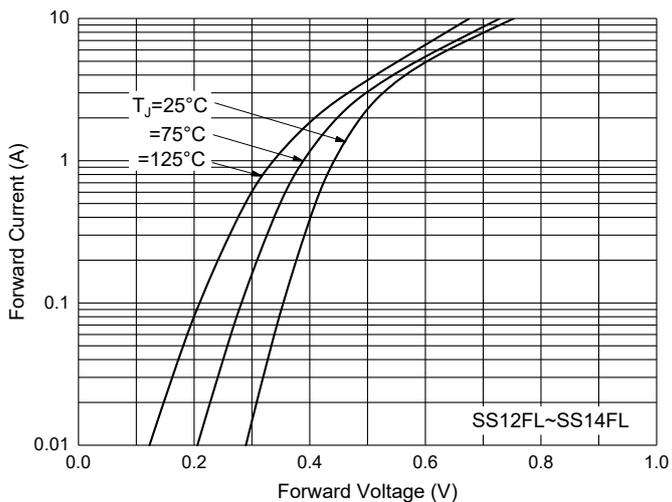


Fig. 4 - Typical Reverse Leakage Characteristics

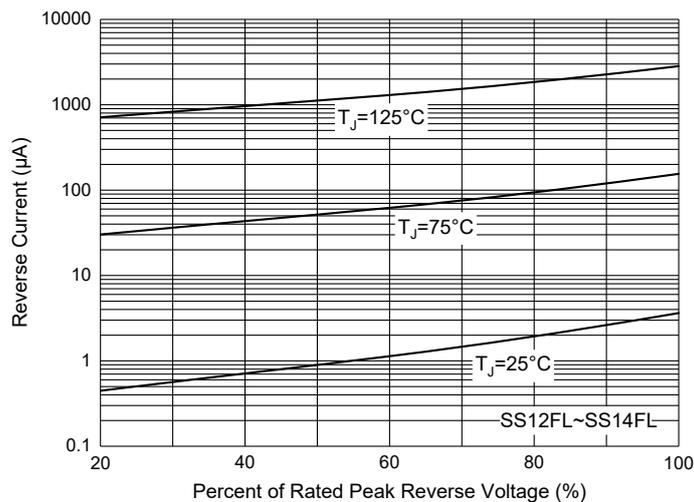


Fig. 5 - Typical Forward Characteristics

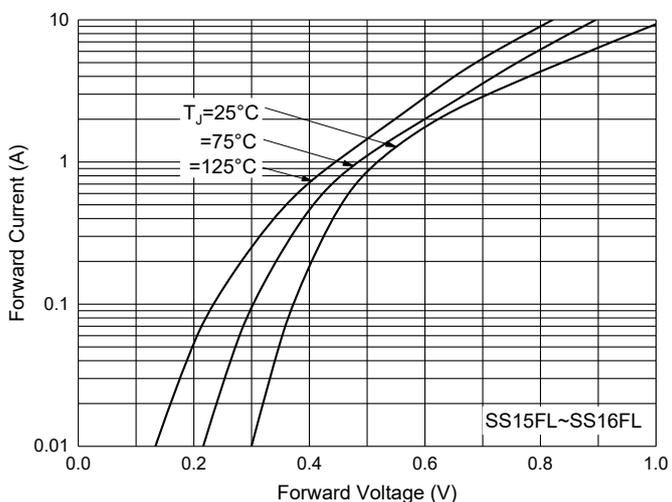
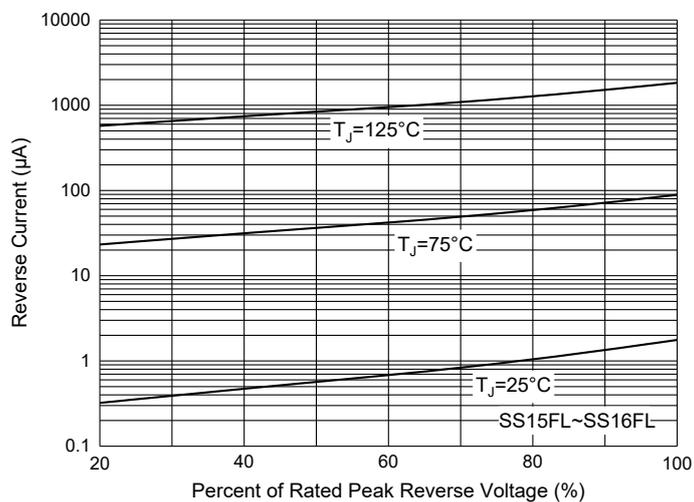


Fig. 6 - Typical Reverse Leakage Characteristics



**Curve Characteristics**

Fig. 7 - Typical Forward Characteristics

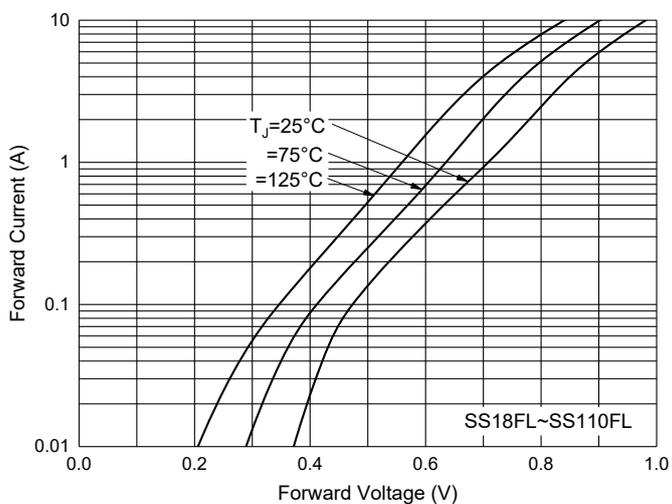


Fig. 8 - Typical Reverse Leakage Characteristics

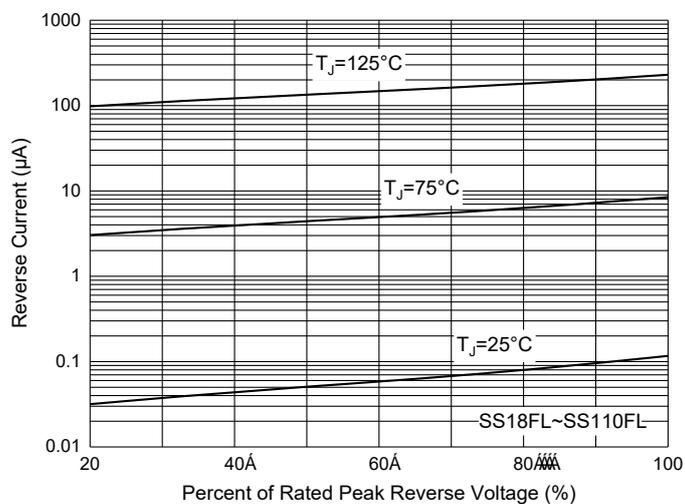


Fig. 9 - Typical Forward Characteristics

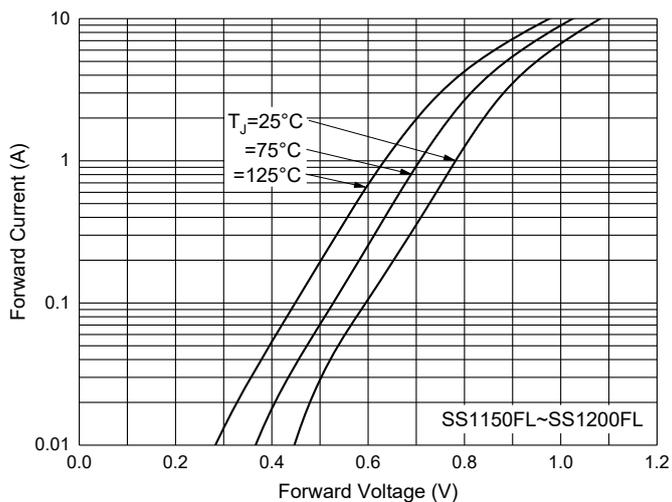


Fig. 10 - Typical Reverse Leakage Characteristics

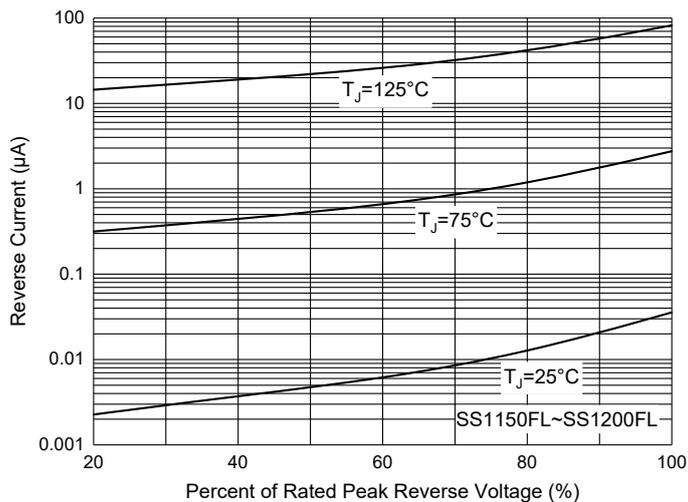
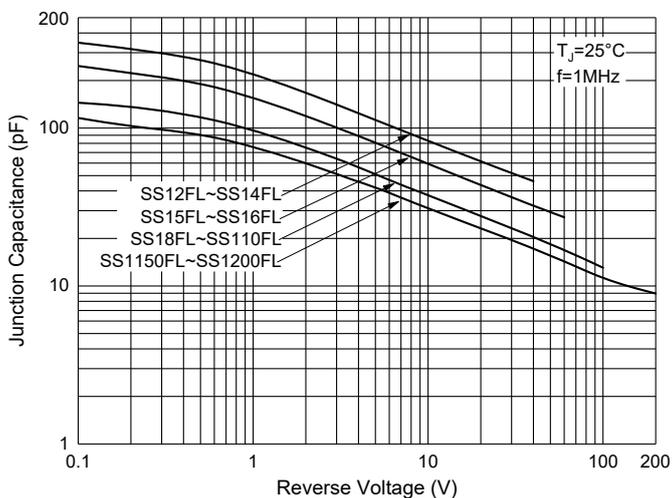


Fig. 11 - Typical Capacitance Characteristics



## Ordering Information

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel:10Kpcs/Reel |

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