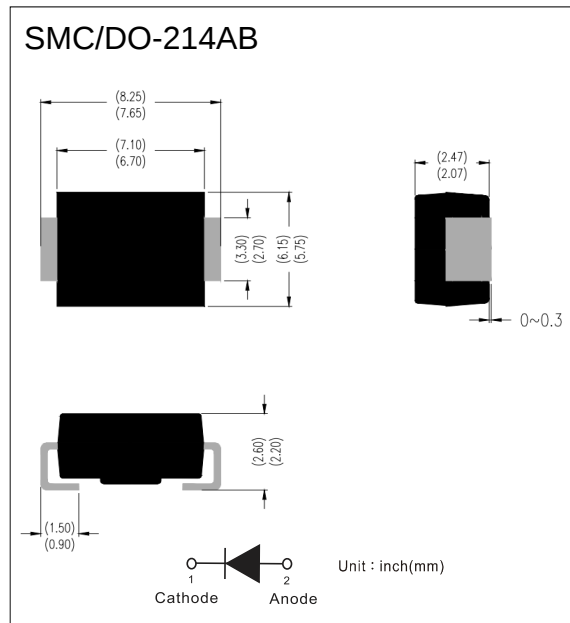


## ■ Features

- Glass passivated junction chip
- Ideal for automated placement
- Super fast recovery time for high efficiency
- Comply with RoHS standard, halogen-free

## ■ Mechanical Data

- package: SMC/DO-214AB
- Polarity: Indicated by cathode band
- Epoxy: UL 94V-0 rate flame retardant
- Mounting Position : Any



## ■ Absolute Maximum Ratings( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER                                                                   |                                    | SYMBOL       | ES5D        | ES5G | ES5J | UNIT               |
|-----------------------------------------------------------------------------|------------------------------------|--------------|-------------|------|------|--------------------|
| Repetitive peak reverse voltage                                             |                                    | $V_{RRM}$    | 200         | 400  | 600  | V                  |
| Reverse voltage, total rms value                                            |                                    | $V_{R(RMS)}$ | 140         | 280  | 420  | V                  |
| DC blocking voltage                                                         |                                    | $V_{DC}$     | 200         | 400  | 600  | V                  |
| Forward current                                                             |                                    | $I_F$        | 5           |      |      | A                  |
| Surge peak forward current single half sine-wave superimposed on rated load | 8.3 ms at $T_A=25^{\circ}\text{C}$ | $I_{FSM}$    | 164         |      |      | A                  |
|                                                                             | 1.0 ms at $T_A=25^{\circ}\text{C}$ |              | 364         |      |      | A                  |
| Junction temperature                                                        |                                    | $T_J$        | -55 to +150 |      |      | $^{\circ}\text{C}$ |
| Storage temperature                                                         |                                    | $T_{STG}$    | -55 to +150 |      |      | $^{\circ}\text{C}$ |

## ■ Thermal Performance( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER                                        | SYMBOL          | TYP | UNIT                 |
|--------------------------------------------------|-----------------|-----|----------------------|
| Junction-to-lead thermal resistance per diode    | $R_{\theta JL}$ | 25  | $^{\circ}\text{C/W}$ |
| Junction-to-ambient thermal resistance per diode | $R_{\theta JA}$ | 54  | $^{\circ}\text{C/W}$ |
| Junction-to-case thermal resistance per diode    | $R_{\theta JC}$ | 18  | $^{\circ}\text{C/W}$ |

**Note:** Units mounted on PCB (16mm x 16mm Cu pad test board)

■ Electrical Specifications ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| PARAMETER                                             |      | CONDITIONS                                                           | SYMBOL          | TYP  | MAX  | UNIT |
|-------------------------------------------------------|------|----------------------------------------------------------------------|-----------------|------|------|------|
| Forward voltage <sup>(1)</sup>                        | ES5D | I <sub>F</sub> = 2.5A, T <sub>J</sub> = 25°C                         | V <sub>F</sub>  | 0.82 | -    | V    |
|                                                       |      | I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C                           |                 | 0.89 | 0.95 | V    |
|                                                       |      | I <sub>F</sub> = 2.5A, T <sub>J</sub> = 125°C                        |                 | 0.67 | -    | V    |
|                                                       |      | I <sub>F</sub> = 5A, T <sub>J</sub> = 125°C                          |                 | 0.76 | 0.85 | V    |
|                                                       | ES5G | I <sub>F</sub> = 2.5A, T <sub>J</sub> = 25°C                         |                 | 0.95 | -    | V    |
|                                                       |      | I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C                           |                 | 1.08 | 1.30 | V    |
|                                                       |      | I <sub>F</sub> = 2.5A, T <sub>J</sub> = 125°C                        |                 | 0.77 | -    | V    |
|                                                       |      | I <sub>F</sub> = 5A, T <sub>J</sub> = 125°C                          |                 | 0.92 | 1.10 | V    |
|                                                       | ES5J | I <sub>F</sub> = 2.5A, T <sub>J</sub> = 25°C                         |                 | 1.10 | -    | V    |
|                                                       |      | I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C                           |                 | 1.36 | 1.70 | V    |
|                                                       |      | I <sub>F</sub> = 2.5A, T <sub>J</sub> = 125°C                        |                 | 0.83 | -    | V    |
|                                                       |      | I <sub>F</sub> = 5A, T <sub>J</sub> = 125°C                          |                 | 0.96 | 1.20 | V    |
| Reverse current @ rated V <sub>R</sub> <sup>(2)</sup> |      | T <sub>J</sub> = 25°C                                                | I <sub>R</sub>  | -    | 10   | μA   |
|                                                       |      | T <sub>J</sub> = 125°C                                               |                 | -    | 200  | μA   |
| Reverse recovery time                                 |      | I <sub>F</sub> =0.5A,I <sub>R</sub> =1.0A,<br>I <sub>rr</sub> =0.25A | t <sub>rr</sub> | -    | 35   | ns   |
| Junction capacitance                                  | ES5D | 1 MHz, V <sub>R</sub> =4.0V                                          | C <sub>J</sub>  | 185  | -    | pF   |
|                                                       | ES5G |                                                                      |                 | 123  | -    | pF   |
|                                                       | ES5J |                                                                      |                 | 71   | -    | pF   |

■ Characteristics Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Fig.1 Forward Current Derating Curve

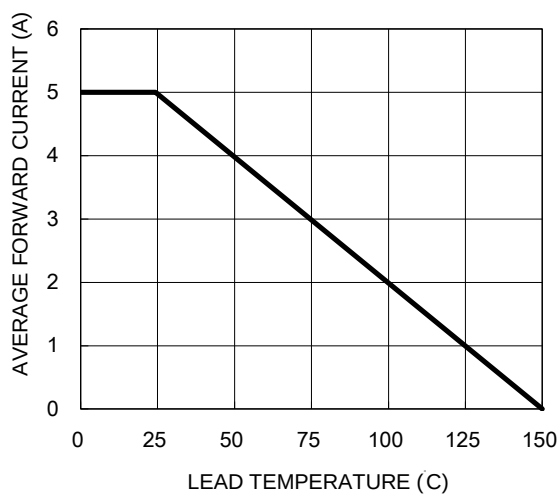


Fig.2 Typical Junction Capacitance

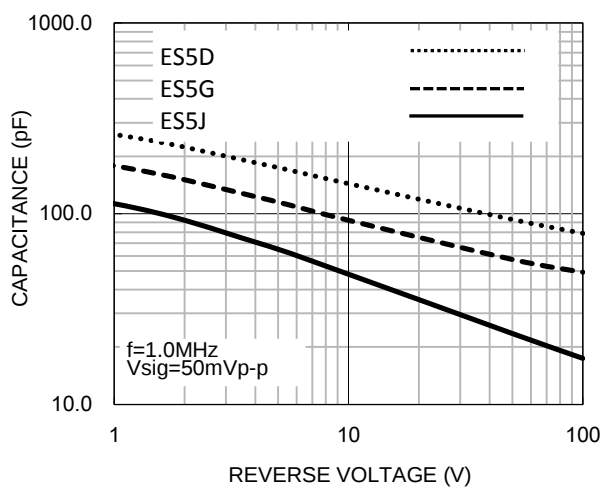




Fig.3 Typical Reverse Characteristics

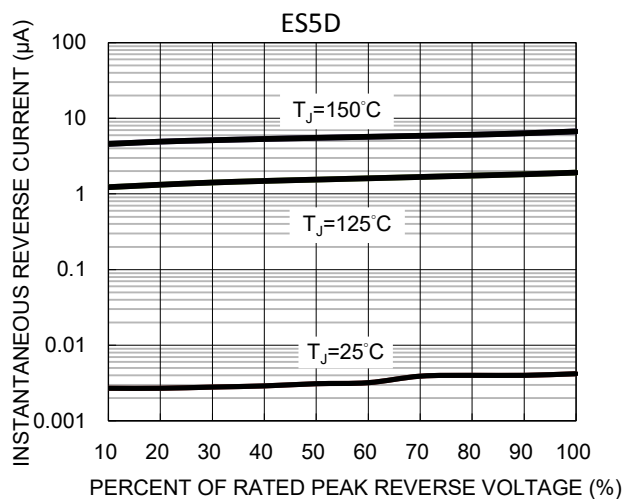


Fig.4 Typical Forward Characteristics

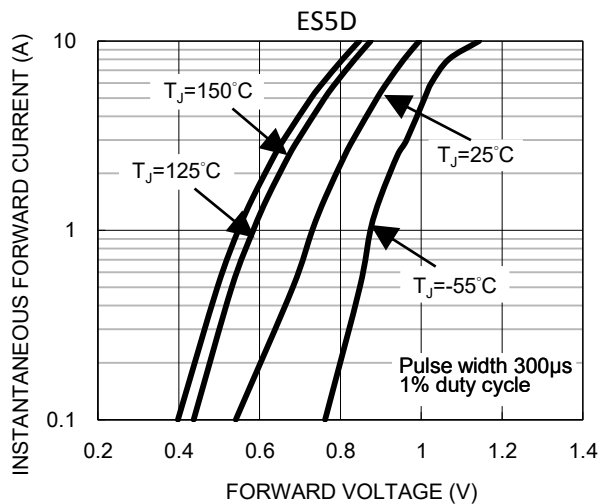


Fig.5 Typical Reverse Characteristics

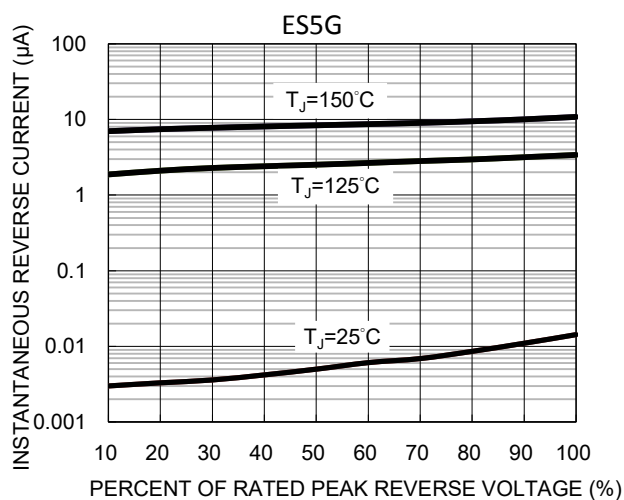


Fig.6 Typical Forward Characteristics

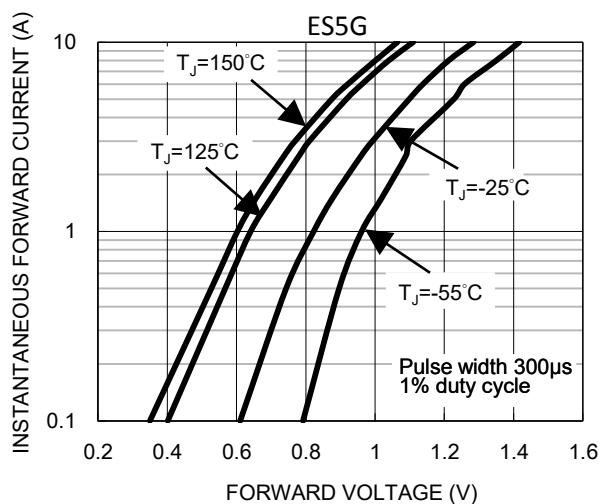


Fig.7 Typical Reverse Characteristics

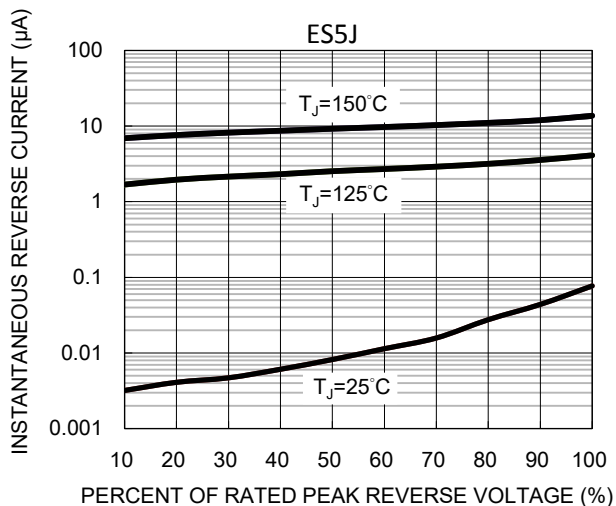


Fig.8 Typical Forward Characteristics

