

# ES3A-C THRU ES3J-C

## 3.0A Surface Mount Super Fast Rectifiers-50-600V

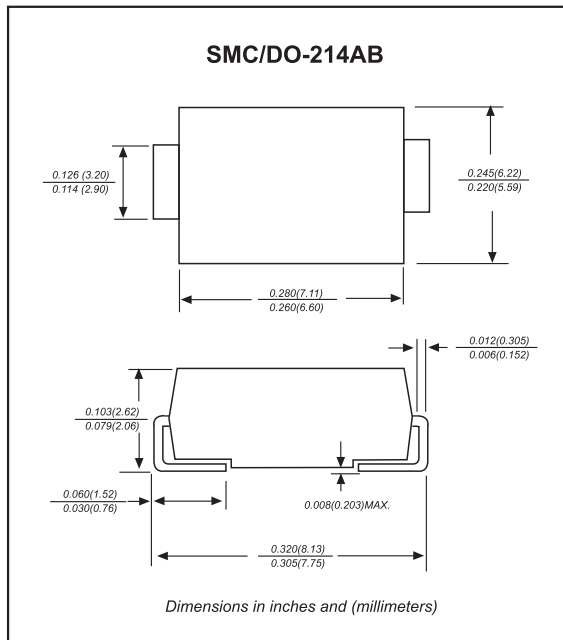
### Features

- ▶ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ▶ For surface mounted applications
- ▶ Super fast switching for high efficiency
- ▶ Low reverse leakage
- ▶ Built-in strain relief,ideal for automated placement
- ▶ High forward surge current capability
- ▶ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ▶ Glass passivated chip junction
- ▶ Compliant to RoHS Directive 2011/65/EU
- ▶ Suffix"-H" indicates Halogen-free part,ex.ES3J-C-H

### Mechanical data

- ▶ **Case:** JEDEC DO-214AB molded plastic body
- ▶ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ▶ **Polarity:** Color band denotes cathode end
- ▶ **Mounting Position:** Any
- ▶ **Weight:**0.007 ounce, 0.25 grams

### Package outline



### Maximum ratings and Electrical Characteristics (AT T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                  | CONDITIONS                                               | Symbol           | MIN. | TYP. | MAX. | UNIT |
|----------------------------|----------------------------------------------------------|------------------|------|------|------|------|
| Forward rectified current  | See Fig.2                                                | I <sub>O</sub>   |      |      | 3.0  | A    |
| Forward surge current      | 8.3ms single half sine-wave (JEDEC methode)              | I <sub>FSM</sub> |      |      | 80   | A    |
| Reverse current            | V <sub>R</sub> = V <sub>RRM</sub> T <sub>A</sub> = 25°C  | I <sub>R</sub>   |      |      | 5.0  | μA   |
|                            | V <sub>R</sub> = V <sub>RRM</sub> T <sub>A</sub> = 100°C |                  |      |      | 50   |      |
| Thermal resistance         | Junction to ambient<br>NOTE 1                            | R <sub>θJA</sub> |      | 47   |      | °C/W |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage                 | C <sub>J</sub>   |      | 45   |      | pF   |
| Storage temperature        |                                                          | T <sub>STG</sub> | -65  |      | +150 | °C   |

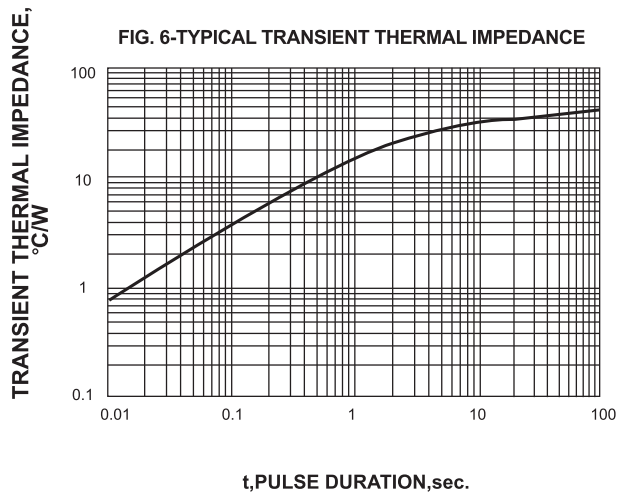
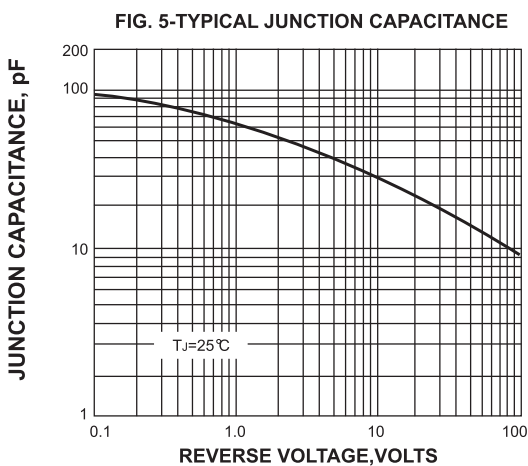
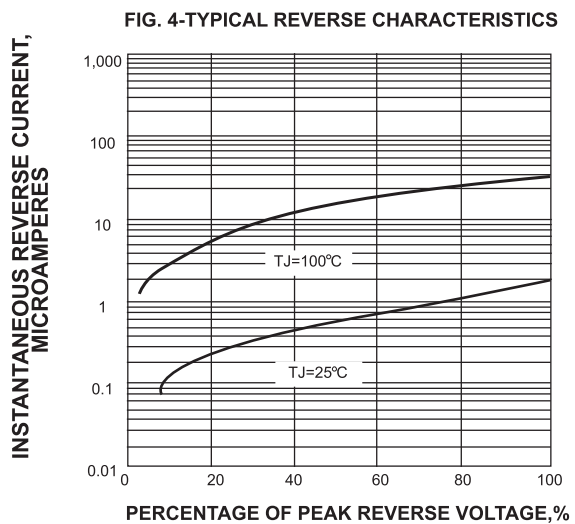
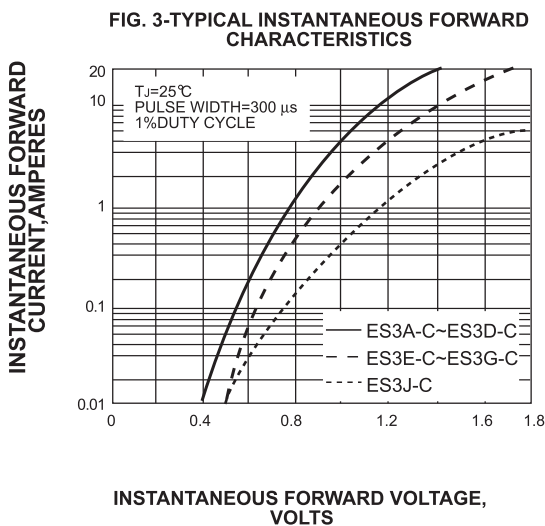
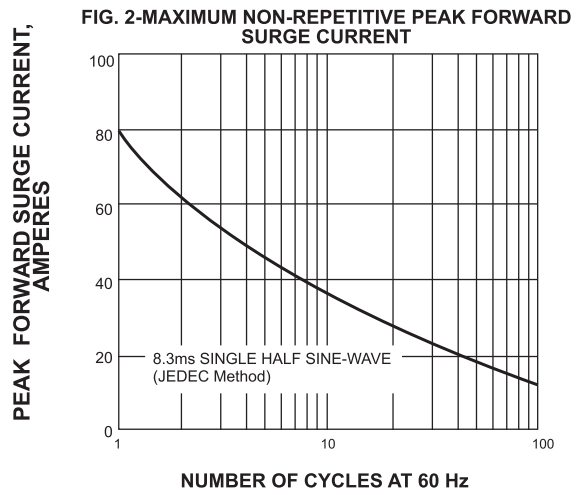
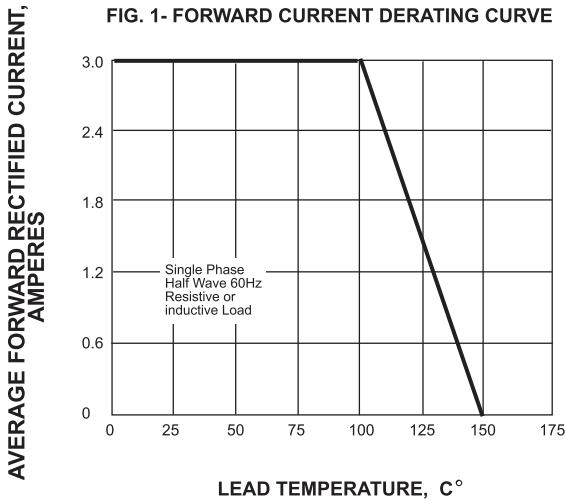
| SYMBOLS | V <sub>RRM</sub> <sup>*1</sup><br>(V) | V <sub>RMS</sub> <sup>*2</sup><br>(V) | V <sub>R</sub> <sup>*3</sup><br>(V) | V <sub>F</sub> <sup>*4</sup><br>(V) | t <sub>rr</sub> <sup>*5</sup><br>(ns) | Operating temperature<br>T <sub>J</sub> , (°C) |
|---------|---------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|------------------------------------------------|
| ES3A-C  | 50                                    | 35                                    | 50                                  | 0.95                                | 35                                    | -55 to +150                                    |
| ES3B-C  | 100                                   | 70                                    | 100                                 |                                     |                                       |                                                |
| ES3C-C  | 150                                   | 105                                   | 150                                 |                                     |                                       |                                                |
| ES3D-C  | 200                                   | 140                                   | 200                                 |                                     |                                       |                                                |
| ES3E-C  | 300                                   | 210                                   | 300                                 | 1.25                                |                                       |                                                |
| ES3G-C  | 400                                   | 280                                   | 400                                 |                                     |                                       |                                                |
| ES3J-C  | 600                                   | 420                                   | 600                                 |                                     |                                       |                                                |

- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage@I<sub>F</sub>=3.0A
- \*5 Maximum Reverse recovery time, note 2

Note: 1.P.C.B. mounted with 0.2x0.2”(5.0x5.0mm) copper pad areas  
2. Reverse recovery time test condition, I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A



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## Rating and characteristic curves

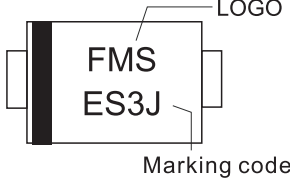
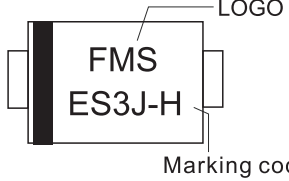


# ES3A-C THRU ES3J-C

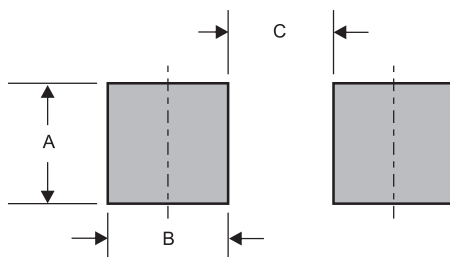
## Pinning information

| Pin                        | Simplified outline                                                                 | Symbol                                                                              |
|----------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Pin1 cathode<br>Pin2 anode |  |  |

## Marking

| Type number | Marking code | Example                                                                             |                                                                                      |
|-------------|--------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| ES3A-C      | ES3A         | For Halogen Device                                                                  | For Halogen-free Device                                                              |
| ES3B-C      | ES3B         |  |  |
| ES3C-C      | ES3C         |                                                                                     |                                                                                      |
| ES3D-C      | ES3D         |                                                                                     |                                                                                      |
| ES3E-C      | ES3E         |                                                                                     |                                                                                      |
| ES3G-C      | ES3G         |                                                                                     |                                                                                      |
| ES3J-C      | ES3J         |                                                                                     |                                                                                      |

## Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C           |
|---------|--------------|--------------|-------------|
| SMC     | 0.132 (3.30) | 0.100 (2.50) | 0.176(4.40) |