

# US1A THRU US1M

## 1.0A Surface Mount High Efficiency Rectifiers-50-1000V

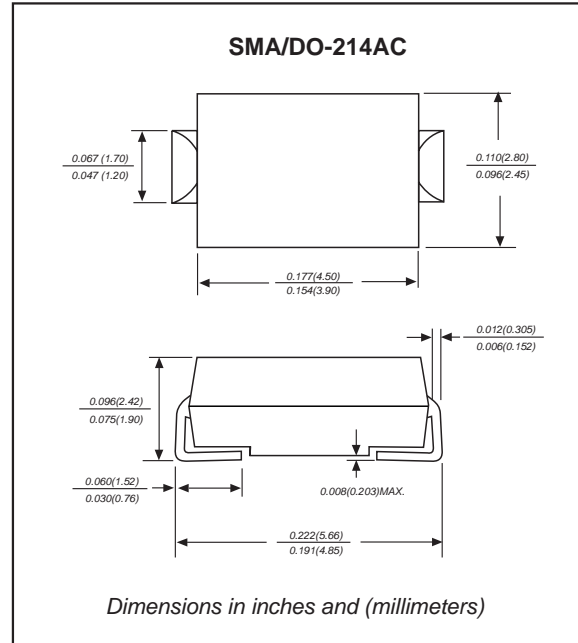
### Features

- ▶ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ▶ For surface mounted applications
- ▶ Ultra 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
- ▶ Compliant to RoHS Directive 2011/65/EU

### Mechanical data

- ▶ **Case:** JEDEC DO-214AC molded plastic body
- ▶ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ▶ **Polarity:** Color band denotes cathode end
- ▶ **Mounting Position:** Any
- ▶ **Weight:** 0.002 ounce, 0.07 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>   |      |      | 1.0  | A    |
| Forward surge current      | 8.3ms single half sine-wave (JEDEC methode)              | I <sub>FSM</sub> |      |      | 30   | 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> |      | 50   |      | °C/W |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage                 | C <sub>J</sub>   |      | 15   |      | pF   |
| Storage temperature        |  | T <sub>STG</sub> | -65  |      | +125 | °C   |

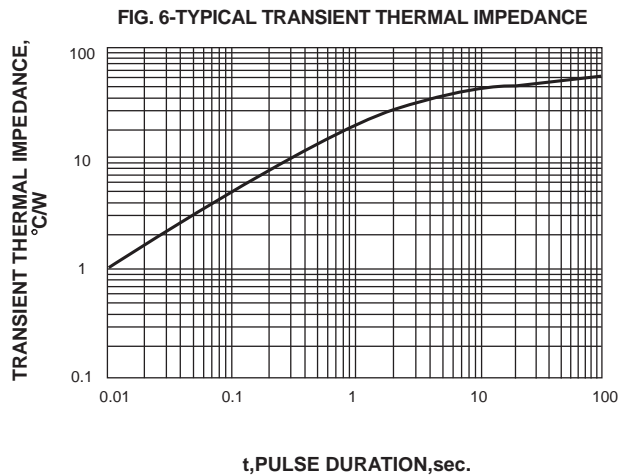
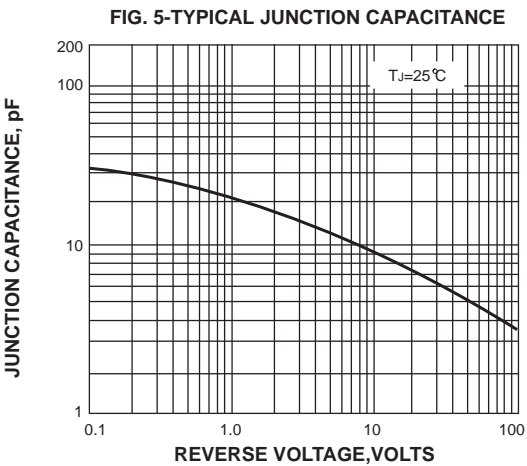
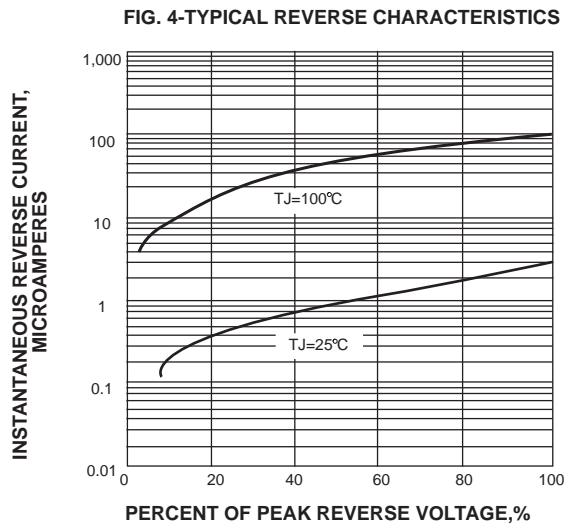
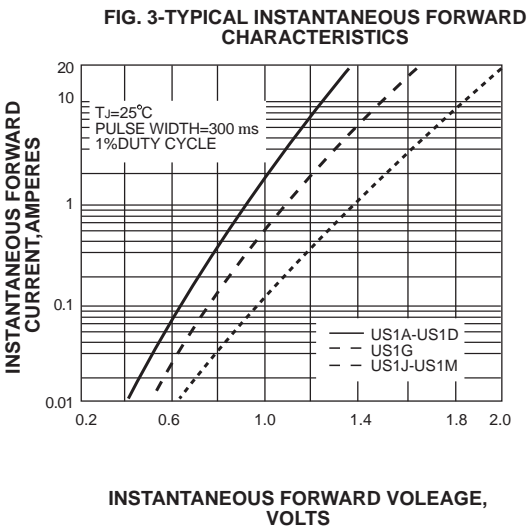
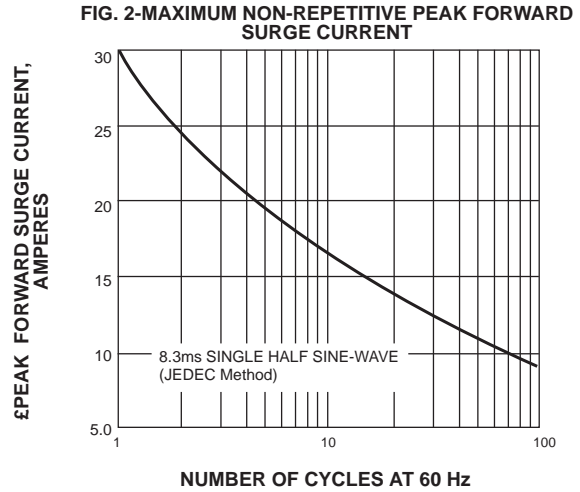
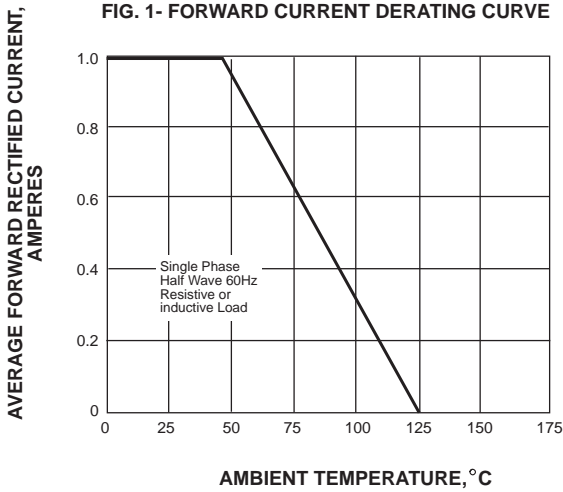
| SYMBOLS | V <sub>RRM</sub> <sup>*1</sup><br>(V) | V <sub>RMS</sub> <sup>*2</sup><br>(V) | V <sub>R</sub> <sup>*3</sup><br>(V) | V <sub>F</sub> <sup>*4</sup><br>(V) | t <sub>rr</sub> <sup>*5</sup><br>(ns) | Operating temperature<br>T <sub>J</sub> (°C) |
|---------|---------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|--|
| US1A    | 50                                    | 35                                    | 50                                  | 1.00                                | 50                                    |  |
| US1B    | 100                                   | 70                                    | 100                                 |                                     |                                       |  |
| US1D    | 200                                   | 140                                   | 200                                 |                                     |                                       |  |
| US1G    | 400                                   | 280                                   | 400                                 | 1.40                                | 75                                    |  |
| US1J    | 600                                   | 420                                   | 600                                 |                                     |                                       |  |
| US1K    | 800                                   | 560                                   | 800                                 |                                     |                                       |  |
| US1M    | 1000                                  | 700                                   | 1000                                |                                     |                                       |  |

- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage@I<sub>F</sub>=1.0A
- \*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 (US1A THRU US1M)

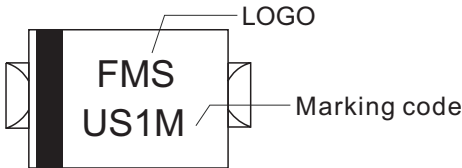


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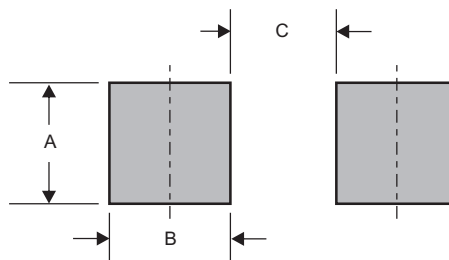
## Pinning information

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

## Marking

| Type number | Marking code | Example   |
|-------------|--------------|---|
| US1A        | US1A         |  |
| US1B        | US1B         |   |
| US1D        | US1D         |   |
| US1G        | US1G         |   |
| US1J        | US1J         |   |
| US1K        | US1K         |   |
| US1M        | US1M         |   |

## Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C            |
|---------|--------------|--------------|--------------|
| SMA     | 0.110 (2.80) | 0.063 (1.60) | 0.087 (2.20) |