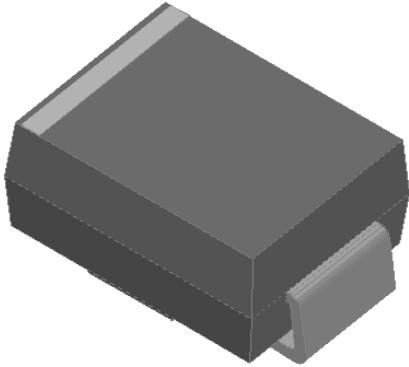


## Surface Mount Super Fast Recovery Rectifier

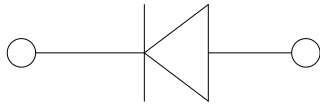


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.



### Mechanical Data

- **Package:** DO-214AA (SMB)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■ Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER   | SYMBOL           | UNIT | ES2A     | ES2B | ES2C | ES2D | ES2F | ES2G | ES2H | ES2J | ES2K |
|---|------------------|------|----------|------|------|------|------|------|------|------|------|
| Device marking code   |                  |      | ES2A     | ES2B | ES2C | ES2D | ES2F | ES2G | ES2H | ES2J | ES2K |
| Repetitive peak reverse voltage   | VRRM             | V    | 50       | 100  | 150  | 200  | 300  | 400  | 500  | 600  | 800  |
| Average rectified output current @60Hz sine wave, resistance load, T <sub>L</sub> (Fig.1) | I <sub>O</sub>   | A    | 2.0      |      |      |      |      |      |      |      |      |
| Surge(non-repetitive)forward current @ 60Hz half-sine wave, 1 cycle, T <sub>a</sub> =25°C | IFSM             | A    | 50       |      |      |      |      |      |      |      |      |
| Storage temperature   | T <sub>stg</sub> | °C   | -55~+150 |      |      |      |      |      |      |      |      |
| Junction temperature  | T <sub>j</sub>   | °C   | -55~+150 |      |      |      |      |      |      |      |      |

### ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER  | SYMBOL         | UNIT | TEST CONDITIONS   | ES2A | ES2B | ES2C | ES2D | ES2F | ES2G | ES2H | ES2J | ES2K |
|--|----------------|------|---|------|------|------|------|------|------|------|------|------|
| Maximum instantaneous forward voltage drop per diode                         | V <sub>F</sub> | V    | IFM=2.0A  | 0.95 |      |      | 1.3  |      | 1.7  |      | 1.85 |      |
| Maximum reverse recovery time  | t <sub>r</sub> | ns   | I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A | 35   |      |      |      |      |      |      |      |      |
| Maximum DC reverse current at rated DC blocking voltage per diode @ VRM=VRRM | IRRM           | μA   | T <sub>a</sub> =25°C  | 5.0  |      |      |      |      |      |      |      |      |
|  |                |      | T <sub>a</sub> =125°C   | 100  |      |      |      |      |      |      |      |      |



# ES2A THRU ES2K

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER          | SYMBOL                | UNIT | ES2A             | ES2B | ES2C | ES2D | ES2F | ES2G | ES2H | ES2J | ES2K |
|--------------------|-----------------------|------|------------------|------|------|------|------|------|------|------|------|
| Thermal resistance | R <sub>θJ-A</sub> (1) | °C/W | 75 <sup>1)</sup> |      |      |      |      |      |      |      |      |
|                    | R <sub>θJ-L</sub> (1) |      | 22 <sup>1)</sup> |      |      |      |      |      |      |      |      |

Note

(1) 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

## ■ Characteristics (Typical)

FIG1: I<sub>o</sub>-T<sub>L</sub> Curve

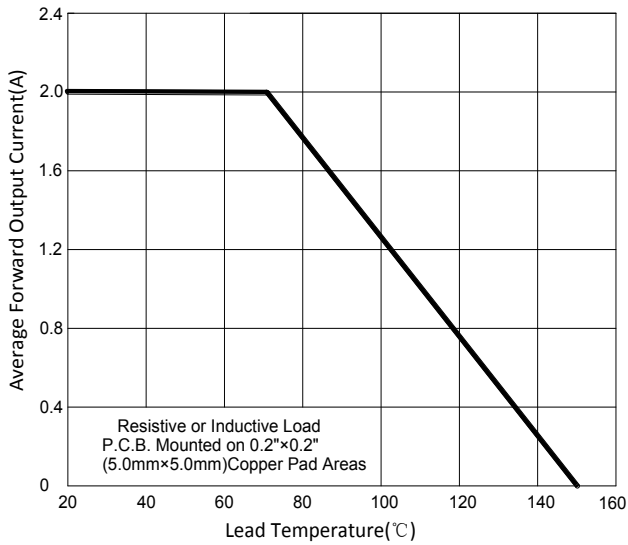


FIG2: Surge Forward Current Capability

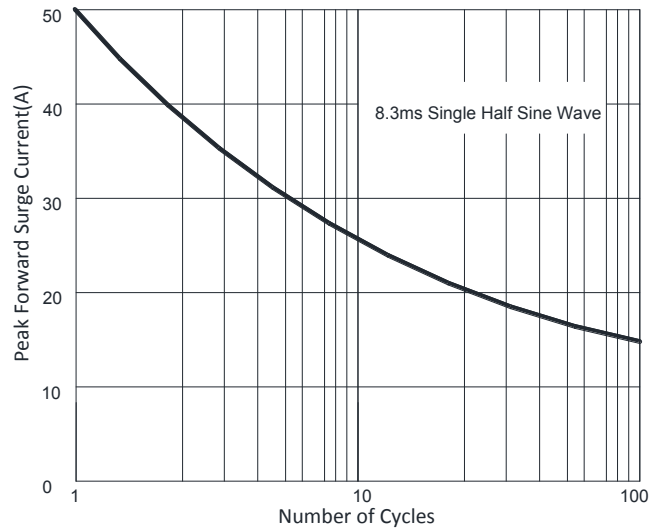


FIG3: Forward Voltage

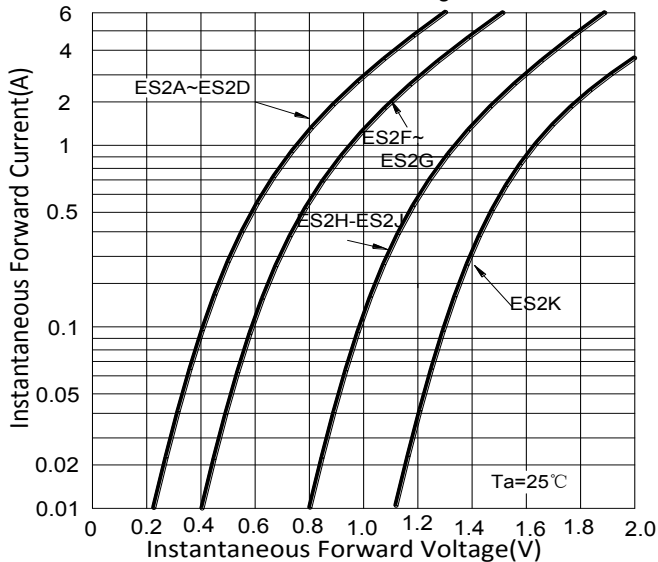


FIG4: Typical Reverse Characteristics

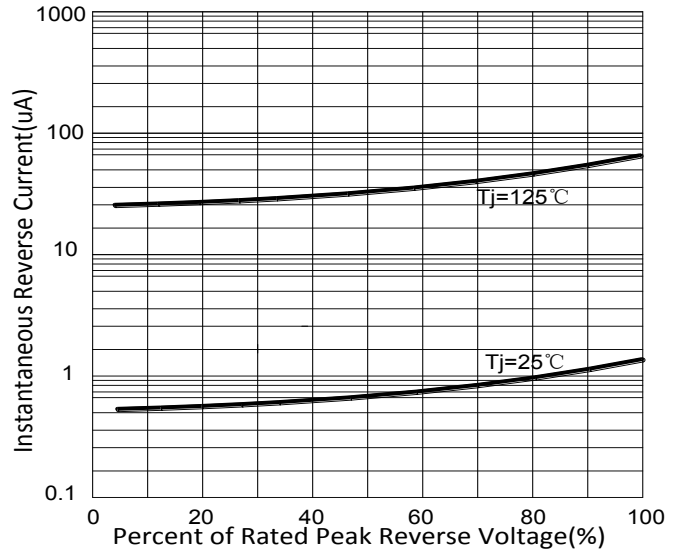
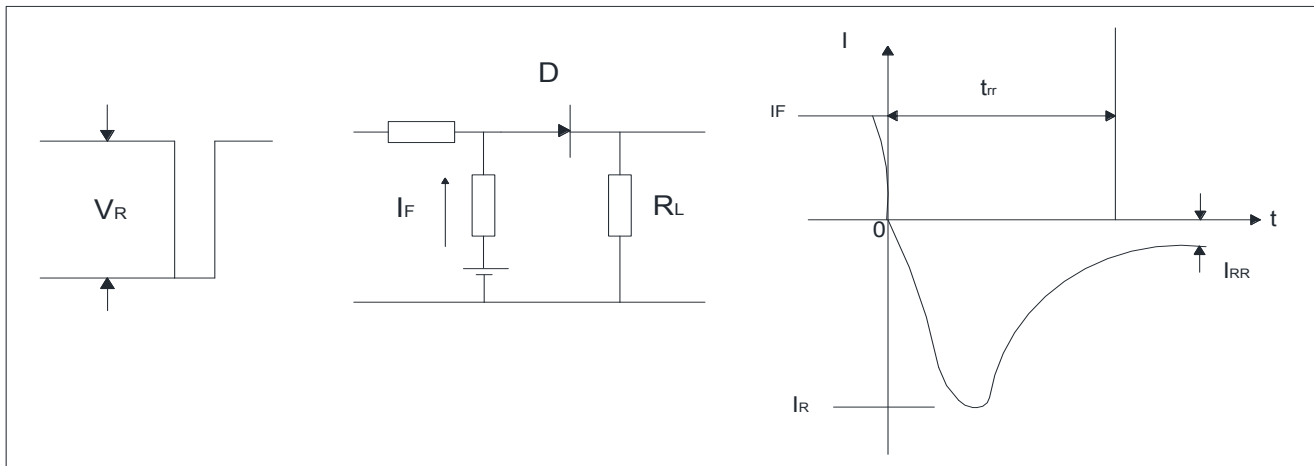


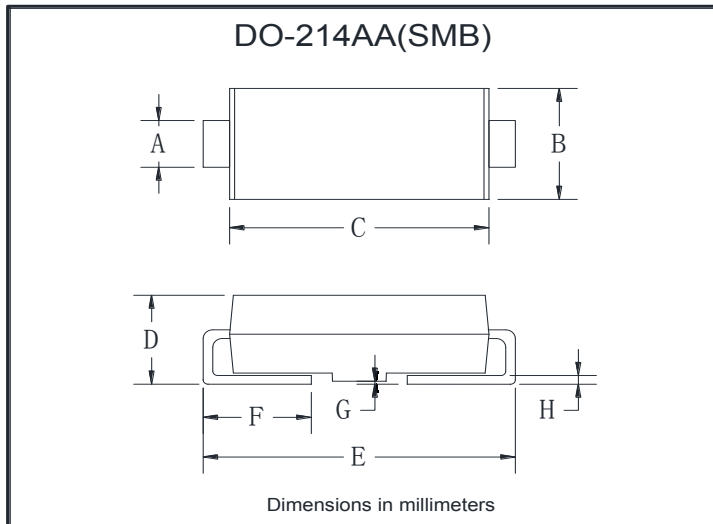
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## ■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| ES2A-ES2K     | F1           | Approximate 0.096 | 3000                 | 6000                    | 48000                      | 13" reel      |
| ES2A-ES2K     | F2           | Approximate 0.096 | 750                  | 3000                    | 24000                      | 7" reel       |
| ES2A-ES2K     | F3           | Approximate 0.096 | 500                  | 2000                    | 16000                      | 7" reel       |

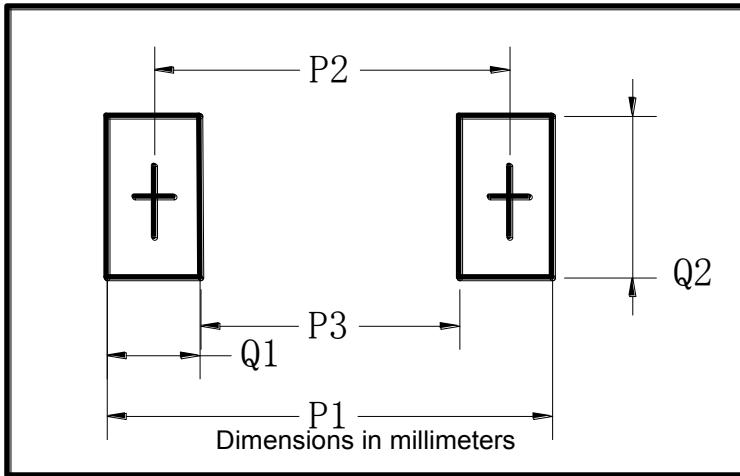
## ■ Outline Dimensions



| DO-214AA(SMB) |      |      |
|---------------|------|------|
| Dim           | Min  | Max  |
| A             | 1.85 | 2.15 |
| B             | 3.30 | 3.94 |
| C             | 4.25 | 4.75 |
| D             | 1.99 | 2.61 |
| E             | 5.21 | 5.59 |
| F             | 0.90 | 1.41 |
| G             | 0.10 | 0.20 |
| H             | 0.15 | 0.31 |



## ■ Suggested pad layout



| DO-214AA(SMB) |             |
|---------------|-------------|
| Dim           | Millimeters |
| P1            | 6.5         |
| P2            | 1.5         |
| P3            | 1.7         |
| Q1            | 2.5         |
| Q2            | 4.0         |



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