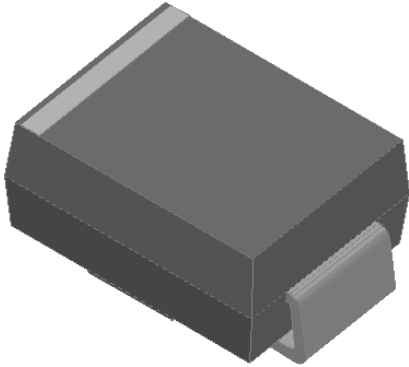


Surface Mount Super Fast Recovery Rectifier

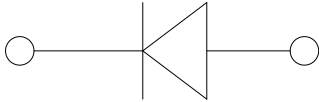


Features

- 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, automotive, 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_a=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 _L (Fig.1) | I _O | A | 2.0 | | | | | | | | |
| Surge(non-repetitive)forward current @ 60Hz half-sine wave,1 cycle, T _a =25°C | IFSM | A | 50 | | | | | | | | |
| Storage temperature | T _{stg} | °C | -55~+150 | | | | | | | | |
| Junction temperature | T _j | °C | -55~+150 | | | | | | | | |

■ Electrical Characteristics (T_a=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 _F | V | IFM=2.0A | 0.95 | | | 1.3 | | 1.7 | | 1.85 | |
| Maximum reverse recovery time | t _r | ns | I _F =0.5A, I _R =1.0A, I _r =0.25A | 35 | | | | | | | | |
| Maximum DC reverse current at rated DC blocking voltage per diode @ VRM=VRRM | IRRM | μA | T _a =25°C | 5.0 | | | | | | | | |
| | | | T _a =125°C | 350 | | | | | | | | |



ES2A THRU ES2K

■ Thermal Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | ES2A | ES2B | ES2C | ES2D | ES2F | ES2G | ES2H | ES2J | ES2K |
|--------------------|---------------------|--------------------|------|------|------|------|------|-------------------|------|------|------|
| Thermal resistance | $R_{\theta J-A(1)}$ | $^\circ\text{C/W}$ | | | | | | 75 ⁽¹⁾ | | | |
| | $R_{\theta J-L(1)}$ | | | | | | | 15 ⁽¹⁾ | | | |

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.27" x 0.27" (7.0 mm x 7.0 mm) copper pad areas

■ 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 | F2 | Approximate 0.096 | 750 | 3000 | 24000 | 7" reel |
| ES2A-ES2K | F1 | Approximate 0.096 | 3000 | 6000 | 48000 | 13" reel |

■ Characteristics (Typical)

FIG1: Io-TL Curve

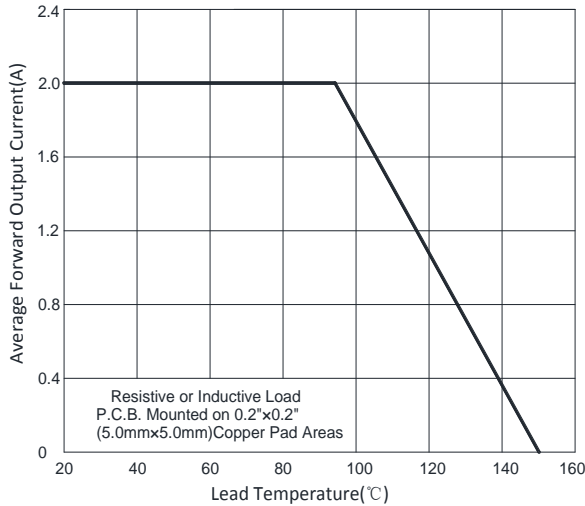


FIG2: Surge Forward Current Capability

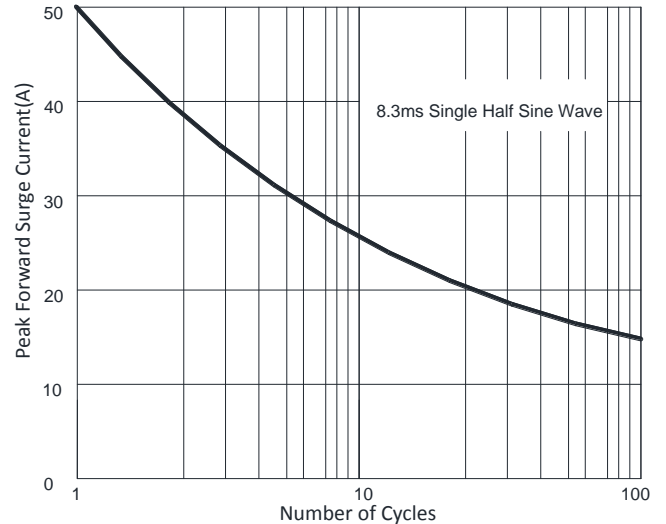


FIG3: Forward Voltage

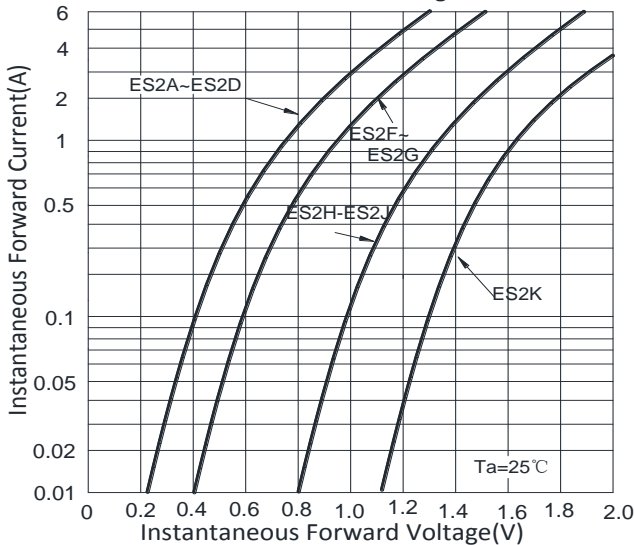


FIG4: Typical Reverse Characteristics

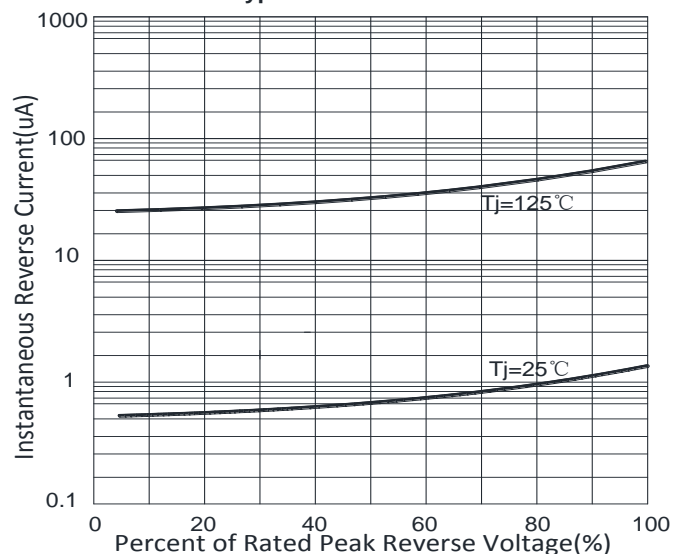
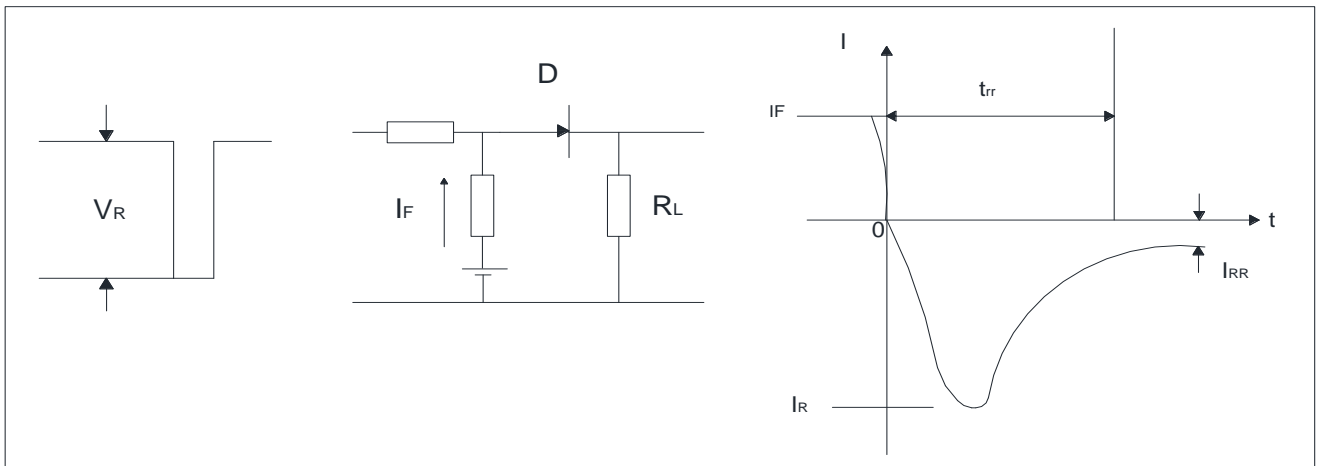
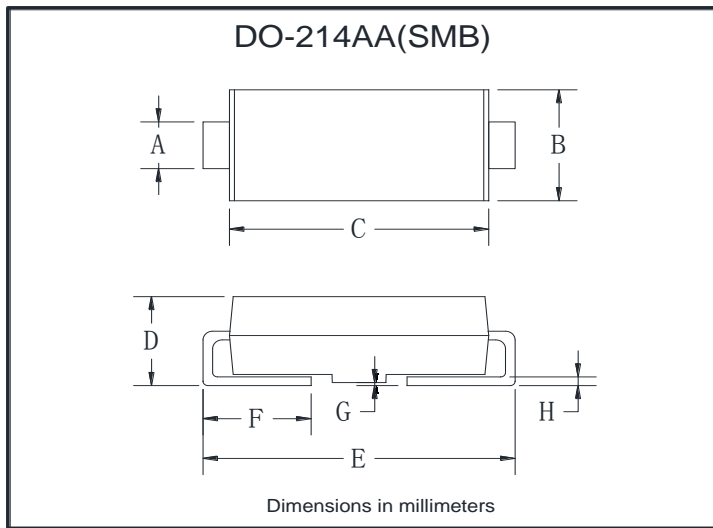


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

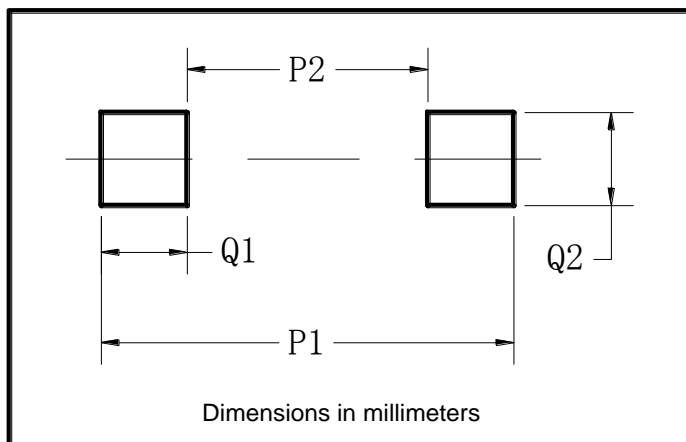


■ Outline Dimensions



| 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



| Dim | Min |
|-----|------|
| P1 | 5.80 |
| P2 | 1.76 |
| Q1 | 2.07 |
| Q2 | 2.72 |



ES2A THRU ES2K

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