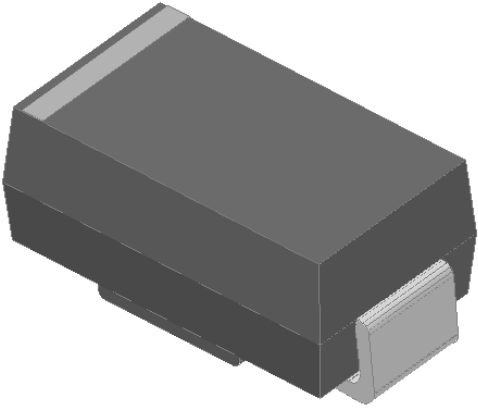


Surface Mount Super Fast Recovery Rectifier

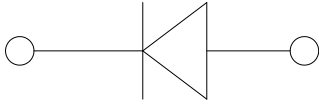


Features

- 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-214AC (SMA)
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 | ES1A | ES1B | ES1C | ES1D | ES1F | ES1G | ES1H | ES1J | ES1K |
|--|------------------|------|----------|------|------|------|------|------|------|------|------|
| Device marking code | | | ES1A | ES1B | ES1C | ES1D | ES1F | ES1G | ES1H | ES1J | ES1K |
| Repetitive peak reverse voltage | VRRM | V | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 800 |
| Average rectified output current @ 60Hz sine wave, Resistance load, TL (FIG.1) | I _O | A | 1.0 | | | | | | | | |
| Surge(non-repetitive)forward current @ 60Hz Half-sine wave,1 cycle, T _a =25°C | I _{FSM} | A | 30 | | | | | | | | |
| 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 | ES1A | ES1B | ES1C | ES1D | ES1F | ES1G | ES1H | ES1J | ES1K |
|--|------------------|------|---|------|------|------|------|------|------|------|------|------|
| Maximum instantaneous forward voltage drop per diode | V _F | V | I _{FM} =1.0A | 0.95 | | | 1.3 | | 1.7 | | 1.85 | |
| Maximum reverse recovery time | T _{RR} | 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 | I _{RRM} | μA | T _a =25°C | 5 | | | | | | | | |
| | | | T _a =100°C | 100 | | | | | | | | |



ES1A THRU ES1K

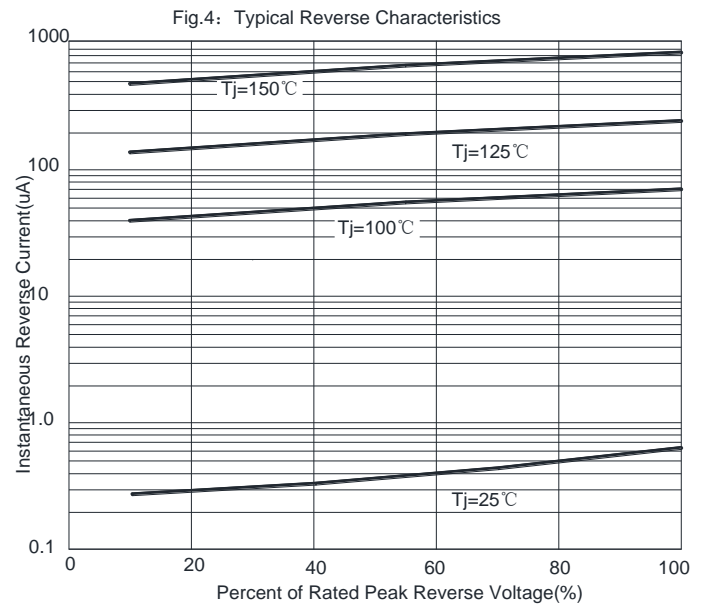
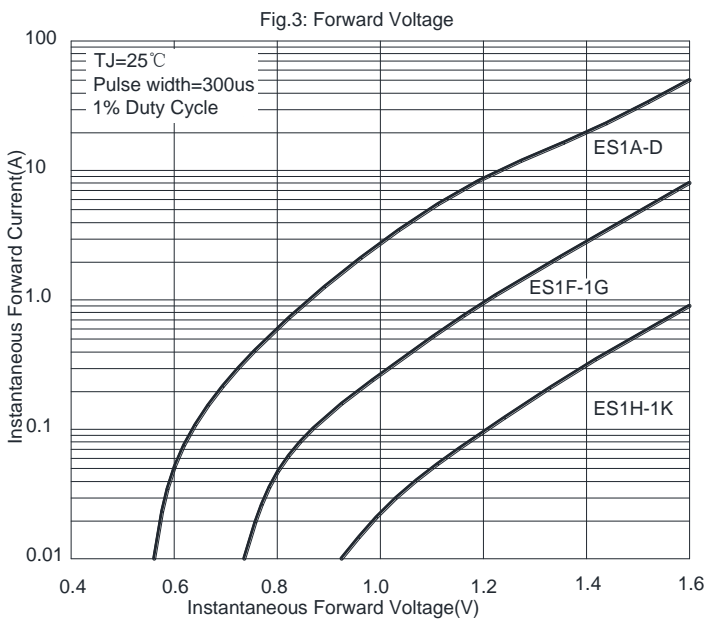
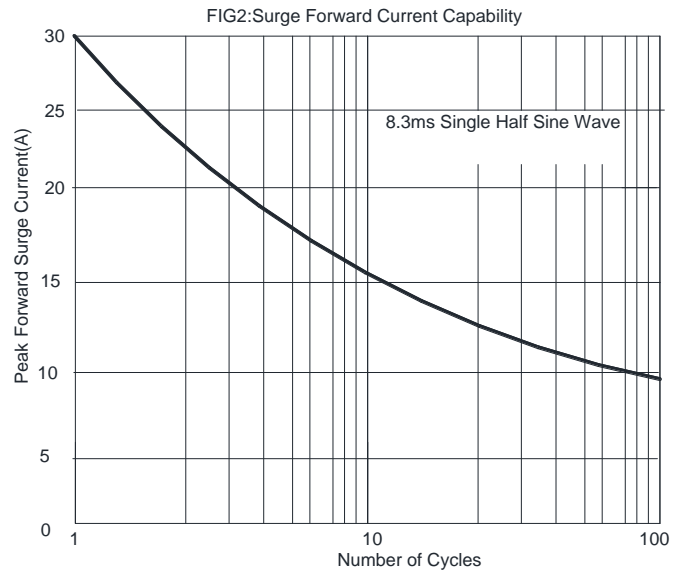
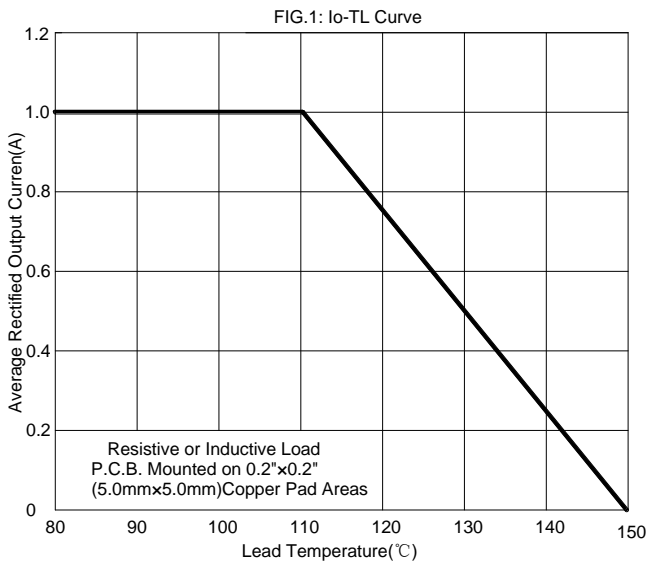
■ Thermal Characteristics ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | ES1A | ES1B | ES1C | ES1D | ES1F | ES1G | ES1H | ES1J | ES1K |
|--------------------|----------------|-----------------------------|------------------|------|------|------|------|------|------|------|------|
| Thermal Resistance | R θ J-A | $^{\circ}\text{C}/\text{W}$ | 65 ¹⁾ | | | | | | | | |
| | R θ J-L | | 20 ¹⁾ | | | | | | | | |
| | R θ J-C | | 25 ¹⁾ | | | | | | | | |

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

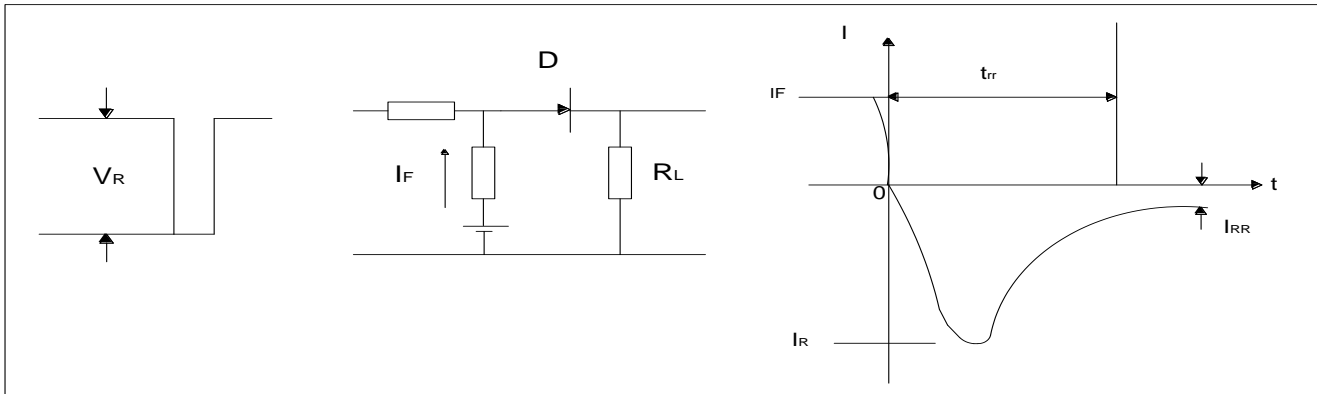
■ Characteristics (Typical)





ES1A THRU ES1K

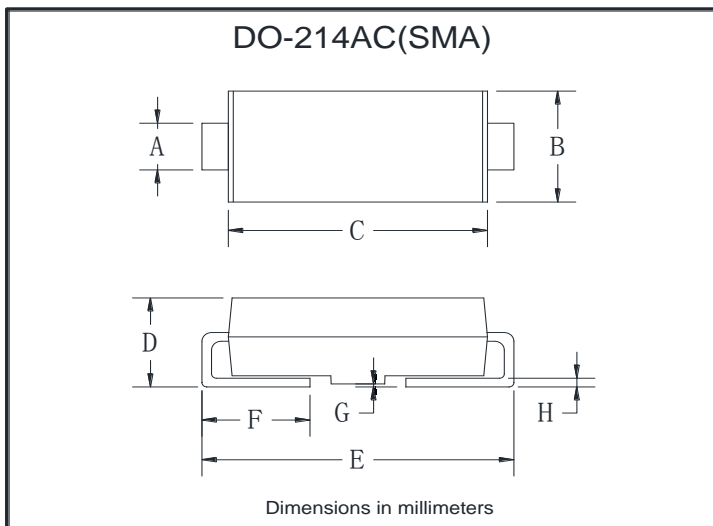
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



Ordering Information (Example)

| PREFERRED P/N | PACKAGE CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| ES1A- ES1K | F1 | Approximate 0.059 | 5000 | 10000 | 80000 | 13" reel |
| ES1A- ES1K | F2 | Approximate 0.059 | 7500 | 15000 | 120000 | 13" reel |
| ES1A- ES1K | F3 | Approximate 0.059 | 7500 | 15000 | 60000 | 13" reel |
| ES1A- ES1K | F4 | Approximate 0.059 | 1800 | 7200 | 57600 | 7" reel |
| ES1A- ES1K | F5 | Approximate 0.059 | 2000 | 8000 | 64000 | 7" reel |
| ES1A- ES1K | F6 | Approximate 0.059 | 5000 | 10000 | 100000 | 13" reel |

Outline Dimensions

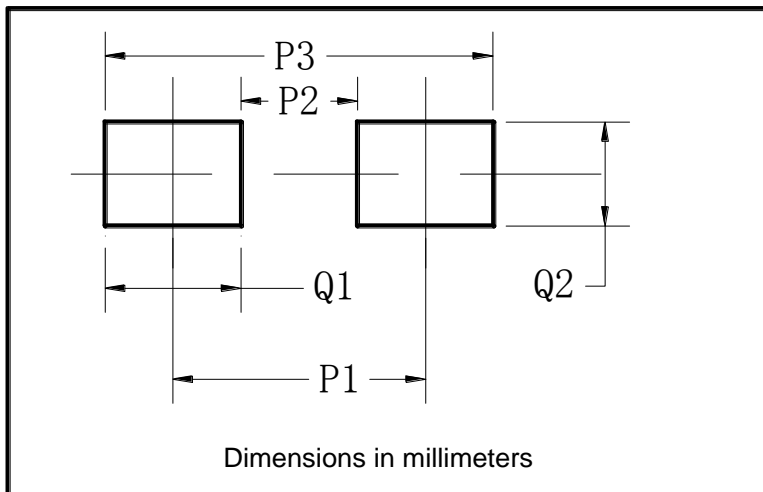


| DO-214AC(SMA) | | |
|---------------|------|------|
| Dim | Min | Max |
| A | 1.25 | 1.58 |
| B | 2.40 | 2.83 |
| C | 4.25 | 4.75 |
| D | 1.90 | 2.30 |
| E | 4.93 | 5.28 |
| F | 0.76 | 1.41 |
| G | 0.08 | 0.20 |
| H | 0.15 | 0.31 |



ES1A THRU ES1K

■ Suggested Pad Layout



| DO-214AC(SMA) | |
|---------------|-------------|
| Dim | Millimeters |
| P1 | 4.00 |
| P2 | 1.50 |
| P3 | 6.50 |
| Q1 | 2.50 |
| Q2 | 1.70 |



ES1A THRU ES1K

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