

Surface Mount Superfast Recovery Rectifier

Reverse Voltage - 50 to 600 V

Forward Current - 2 A

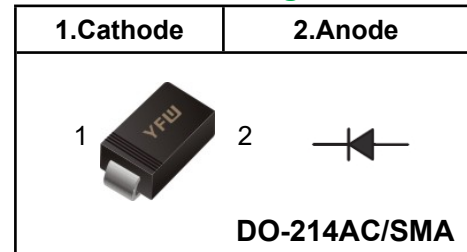
FEATURES

- ◆ Glass Passivated Chip Junction
- ◆ For surface mounted applications
- ◆ Low profile package
- ◆ Superfast reverse recovery time
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- ◆ Case: DO-214AC/SMA
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 0.07g / 0.002oz

Pinning



Marking Code

| | |
|-------------|-------------|
| ES2A | ES2A |
| ES2B | ES2B |
| ES2D | ES2D |
| ES2G | ES2G |
| ES2J | ES2J |

Absolute Maximum Ratings and characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

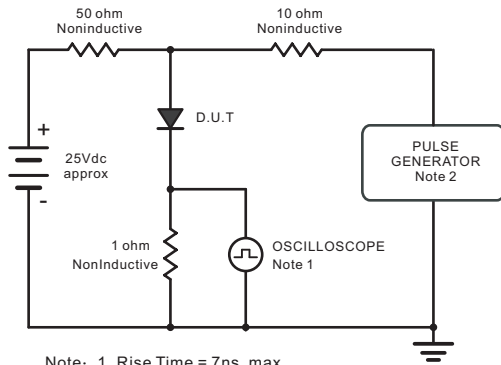
Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter | Symbols | ES2A | ES2B | ES2D | ES2G | ES2J | Units |
|--|-----------------|------------|------|------|------|------|--------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | V |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | V |
| Maximum Average Forward Rectified Current at $T_c = 125\text{ }^\circ\text{C}$ | $I_{F(AV)}$ | 2 | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load | I_{FSM} | 50 | | | | | A |
| Maximum Instantaneous Forward Voltage at 2 A | V_F | 0.95 | | 1.25 | | 1.65 | V |
| Maximum DC Reverse Current $T_a = 25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage $T_a = 125\text{ }^\circ\text{C}$ | I_R | 5 100 | | | | | μA |
| Typical Junction Capacitance at $V_R = 4\text{V}, f = 1\text{MHz}$ | C_j | 40 | | | | | pF |
| Maximum Reverse Recovery Time ⁽¹⁾ | T_{rr} | 35 | | | | | nS |
| Typical Thermal Resistance ⁽²⁾ | $R_{\theta JA}$ | 60 | | | | | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_j, T_{stg} | -55 ~ +150 | | | | | $^\circ\text{C}$ |

(1) Measured with $I_F = 0.5\text{A}, I_R = 1\text{A}, I_n = 0.25\text{A}$

(2) P.C.B. mounted with 1.0" X 1.0" (2.54 X 2.54 cm) copper pad areas.

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.
Input Impedance = 1megohm, 22pF.
2. Rises Time = 10ns, max.
Source Impedance = 50 ohms.

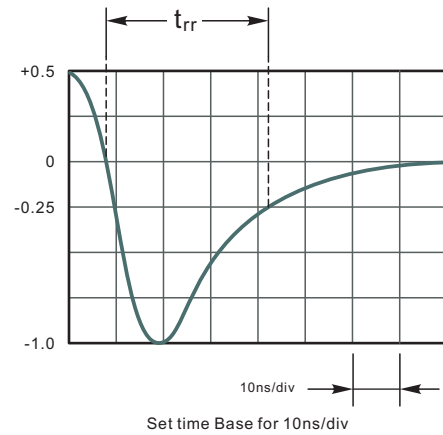


Fig.2 Maximum Average Forward Current Rating

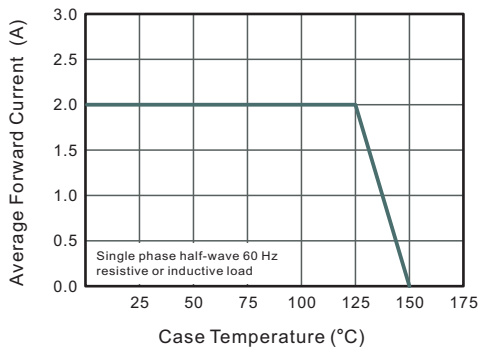


Fig.3 Typical Reverse Characteristics

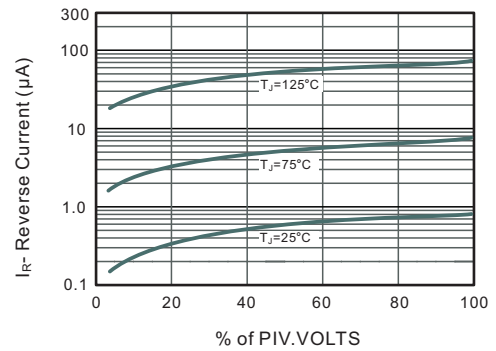


Fig.4 Typical Forward Characteristics

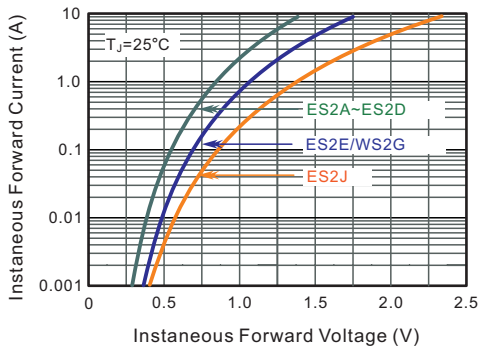


Fig.5 Typical Junction Capacitance

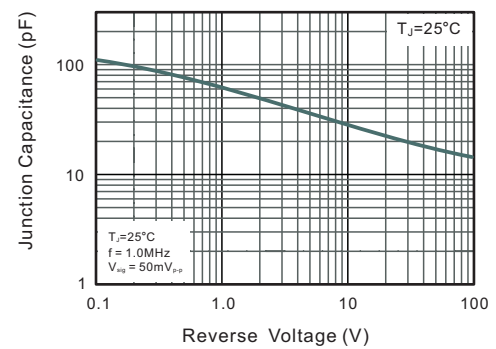
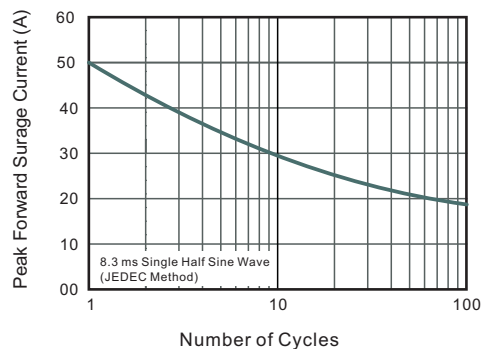
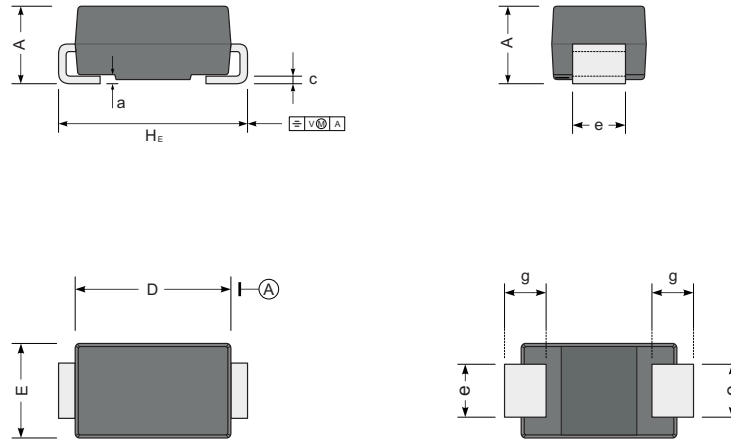


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



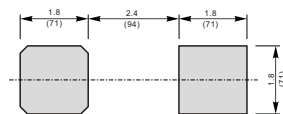
Package Outline DO-214AC SMA

Plastic surface mounted package; 2 leads



| UNIT | | A | D | E | H _E | c | e | g | a |
|------|-----|------|-----|------|----------------|------|-----|-----|-----|
| mm | max | 2.42 | 4.5 | 2.80 | 5.2 | 0.31 | 1.6 | 1.5 | 0.3 |
| | min | 1.98 | 4.0 | 2.54 | 4.7 | 0.15 | 1.3 | 0.9 | |
| mil | max | 96 | 181 | 110 | 205 | 12 | 63 | 59 | 12 |
| | min | 78 | 157 | 100 | 185 | 6 | 51 | 35 | |

The recommended mounting pad size



Unit : $\frac{\text{mm}}{\text{(mil)}}$

Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|--------------|---------------------|------------------|-------------------|
| DO-214AC SMA | Tape/Reel, 11" reel | 5000 | EIA-481-1 |
| | Tape/Reel, 7" reel | 2000 | EIA-481-1 |