



ES2AB THRU ES2JB

Reverse Voltage - 50 to 600 Volts Forward Current - 2.0 Ampere

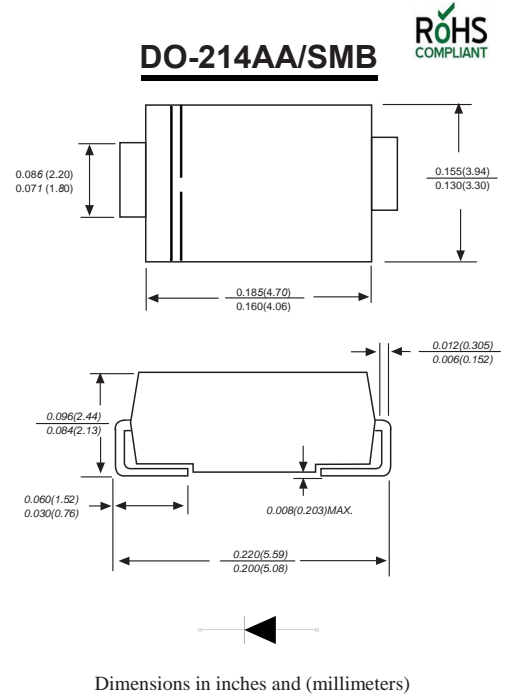
SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ 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
- ◆ Glass passivated chip junction

Mechanical Data

Case : JEDEC DO-214AA/SMB Molded plastic body
Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
Polarity : Polarity symbol marking on body
Mounting Position : Any
Weight : 0.003 ounce, 0.095 grams



Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

| Parameter | SYMBOLS | MDD | MDD | MDD | MDD | MDD | MDD | MDD | UNITS |
|---|------------------------------------|-------------|-------|-------|-------|-------|-------|-------|---------------------------|
| | | ES2AB | ES2BB | ES2CB | ES2DB | ES2EB | ES2GB | ES2JB | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum average forward rectified current at $T_L=125^\circ\text{C}$ | $I_{(AV)}$ | 2.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 60 | | | | | | | A |
| Maximum instantaneous forward voltage at 2.0A | V_F | 1 | | | 1.25 | | 1.68 | | V |
| Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$ | I_R | 5 100 | | | | | | | μA |
| Maximum reverse recovery time (NOTE 1) | t_{rr} | 35 | | | | | | | ns |
| Typical junction capacitance (NOTE 2) | C_J | 40 | | | | | | | pF |
| Typical thermal resistance (NOTE 3) | $R_{\theta JA}$ $R_{\theta JC}$ | 60 20 | | | | | | | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ |

Note: 1. Reverse recovery condition $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 3. P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas

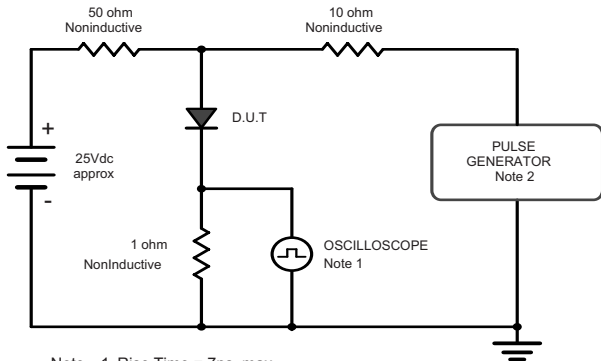


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Ratings And Characteristic Curves

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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

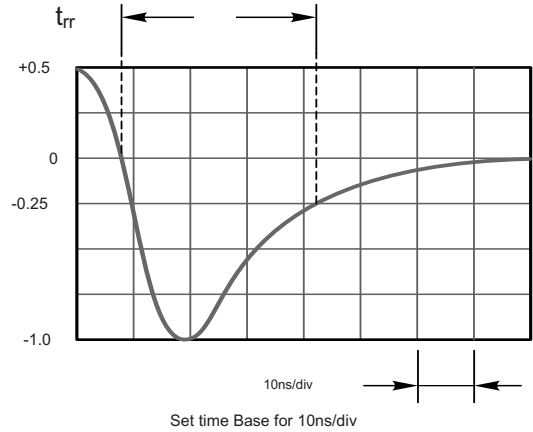


Fig.2 Maximum Average Forward Current Rating

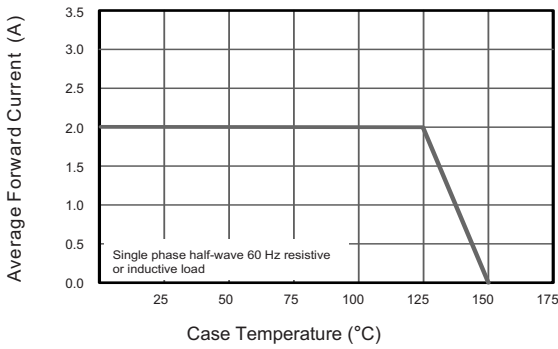


Fig.3 Typical Reverse Characteristics

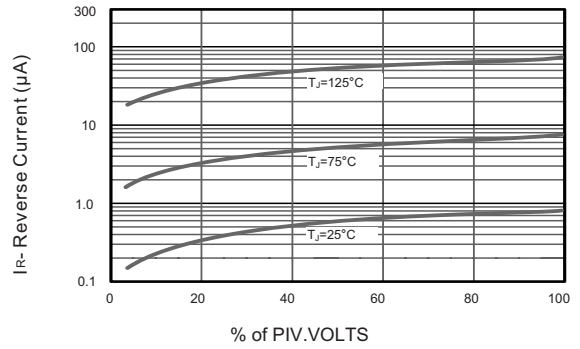


Fig.4 Typical Forward Characteristics

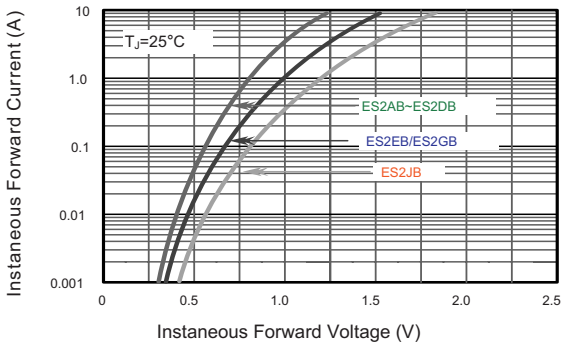


Fig.5 Typical Junction Capacitance

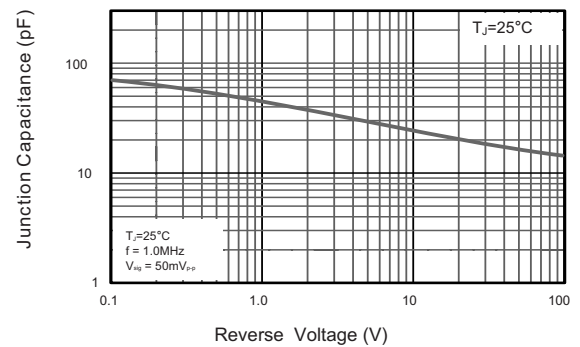
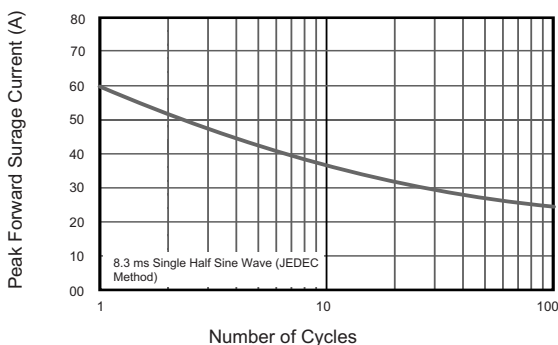


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



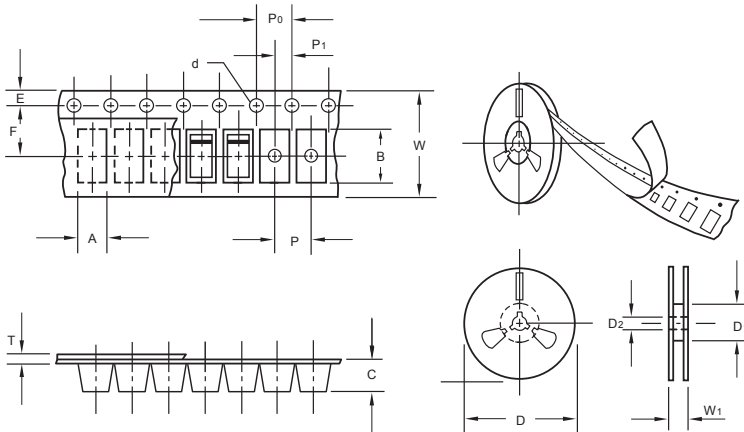
The curve above is for reference only.



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Packing information



unit:mm

| Item | Symbol | Tolerance | SMB |
|---------------------------|----------------|-----------|--------|
| Carrier width | A | 0.1 | 3.81 |
| Carrier length | B | 0.1 | 5.41 |
| Carrier depth | C | 0.1 | 2.42 |
| Sprocket hole | d | 0.05 | 1 5.0 |
| 13" Reel outside diameter | D | 2.0 | 330.00 |
| 13" Reel inner diameter | D ₁ | min | 50.00 |
| Feed hole diameter | D ₂ | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 5.55 |
| Punch hole pitch | P | 0.1 | 8.00 |
| Sprocket hole pitch | P ₀ | 0.1 | 4.00 |
| Embossment center | P ₁ | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.30 |
| Tape width | W | 0.3 | 12.00 |
| Reel width | W ₁ | 1.0 | 12.30 |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (mm) | BOX (pcs) | INNER BOX (mm) | REEL DIA, (mm) | CARTON SIZE (mm) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|------------------------|-----------|----------------|----------------|------------------|--------------|---------------------------|
| SMB | 13" | 3,000 | 4.0 | 6,000 | 190*190*41 | 330 | 365*365*360 | 48,000 | 14.0 |

Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 2.8 | 0.110 |
| B | 2.4 | 0.094 |
| C | 4.6 | 0.181 |
| D | 2.2 | 0.086 |
| E | 7.0 | 0.276 |