

Fast Rectifiers

ES2A-ES2D

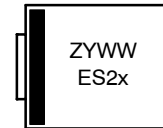


SMB
CASE 403AF

Features

- For Surface Mount Applications
- Glass–Passivated Junction
- Low–Profile Package
- Easy Pick and Place
- Built–in Strain Relief
- Superfast Recovery Times for High Efficiency
- These are Pb–Free Devices

MARKING DIAGRAM



(COLOR BAND DENOTES CATHODE)

Z = Assembly Plant Code
Y = Year
WW = Work Week
ES2x = Specific Device Code
x = A, B, C, D

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|--------------------|--|-------------------------|------|
| V _{RRM} | Maximum Repetitive Reverse Voltage ES2A ES2B ES2C ES2D | 50 100 150 200 | V |
| I _{F(AV)} | Average Rectified Forward Current, 0.375" Lead Length at T _L = 115°C | 2.0 | A |
| I _{FSM} | Non–Repetitive Peak Forward Surge Current, 8.3 ms Single Half–Sine Wave | 50 | A |
| T _{STG} | Storage Temperature Range | –55 to +150 | °C |
| T _J | Operating Junction Temperature Range | –55 to +150 | °C |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

THERMAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|------------------|---|-------|------|
| P _D | Power Dissipation | 1.66 | W |
| R _{θJA} | Thermal Resistance, Junction to Ambient (Note 1) | 75 | °C/W |
| R _{θJL} | Thermal Resistance, Junction to Lead (Note 1) | 20 | °C/W |

1. Device mounted on FR–4 PCB 0.013 mm.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

| Symbol | Parameter | Test Conditions | Value | | | | Unit |
|-----------------|---|---|-----------|------|------|------|------|
| | | | ES2A | ES2B | ES2C | ES2D | |
| V _F | Maximum Forward Voltage | I _F = 2.0 A | 0.90 | | | | V |
| t _{rr} | Reverse Recovery Time | I _F = 0.5 A, I _R = 1.0 A, I _{RR} = 0.25 A | 20 | | | | ns |
| I _R | Maximum Reverse Current at Rated V _R | T _A = 25°C T _A = 100°C | 10 350 | | | | μA |
| C _T | Total Capacitance | V _R = 4.0 V, f = 1.0 MHz | 18 | | | | pF |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL PERFORMANCE CHARACTERISTICS

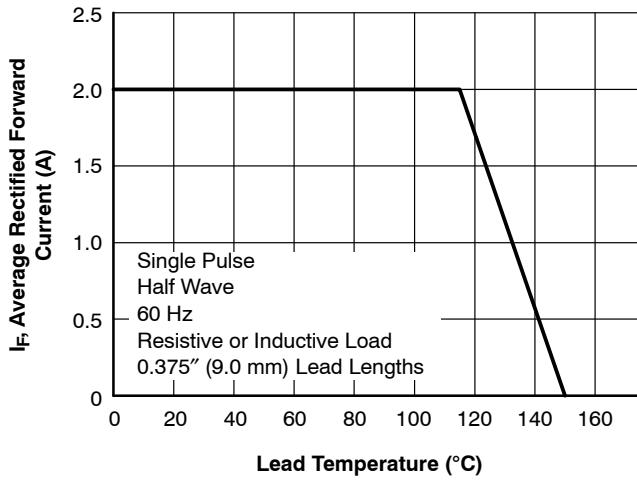


Figure 1. Forward Current Derating Curve

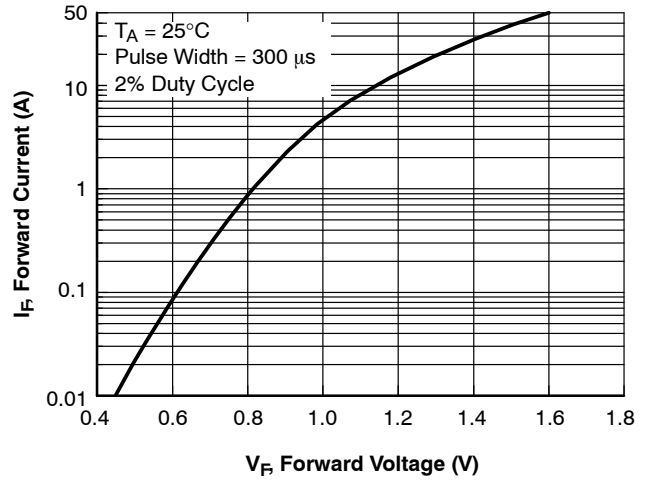


Figure 2. Forward Voltage Characteristics

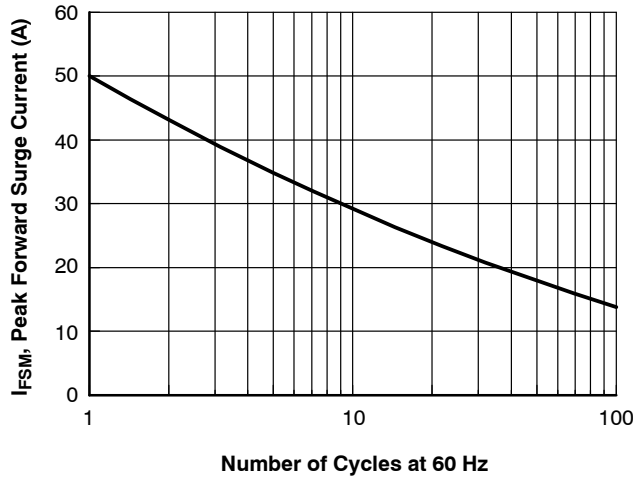


Figure 3. Non-Repetitive Surge Current

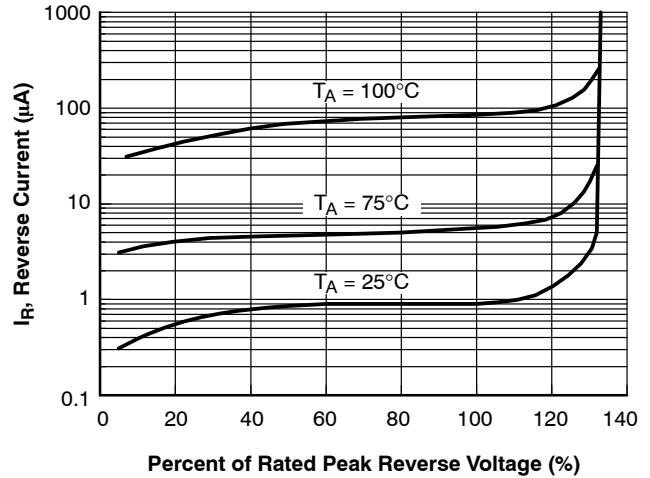


Figure 4. Reverse Current vs. Reverse Voltage

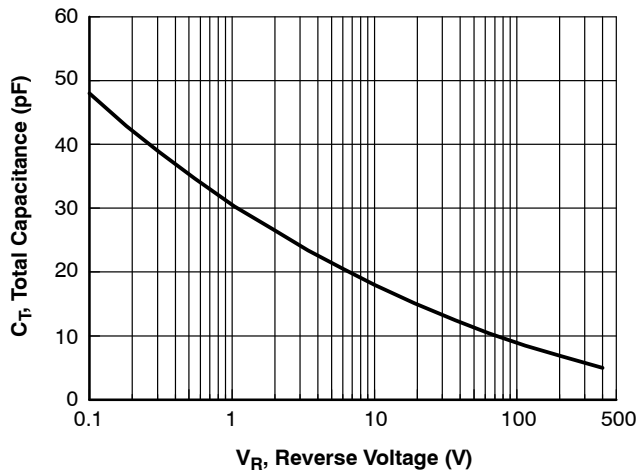
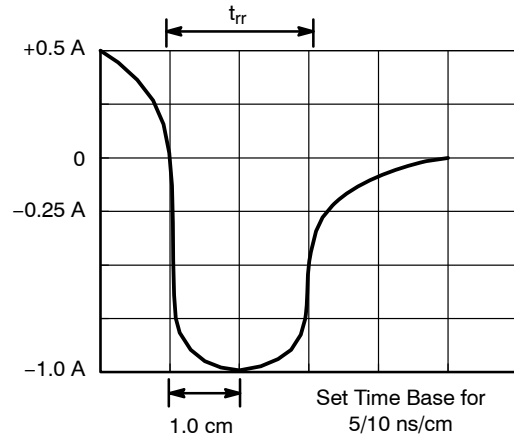
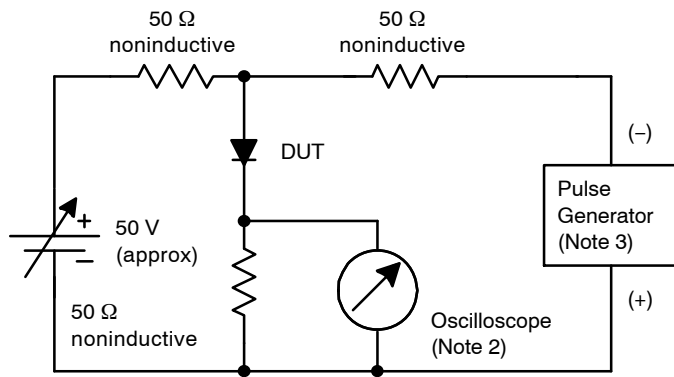


Figure 5. Total Capacitance

ES2A-ES2D



NOTES:

2. Rise time = 7.0 ns max; Input impedance = 1.0 M Ω 22 pF.
3. Rise time = 10 ns max; Source impedance = 50 Ω .

Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram

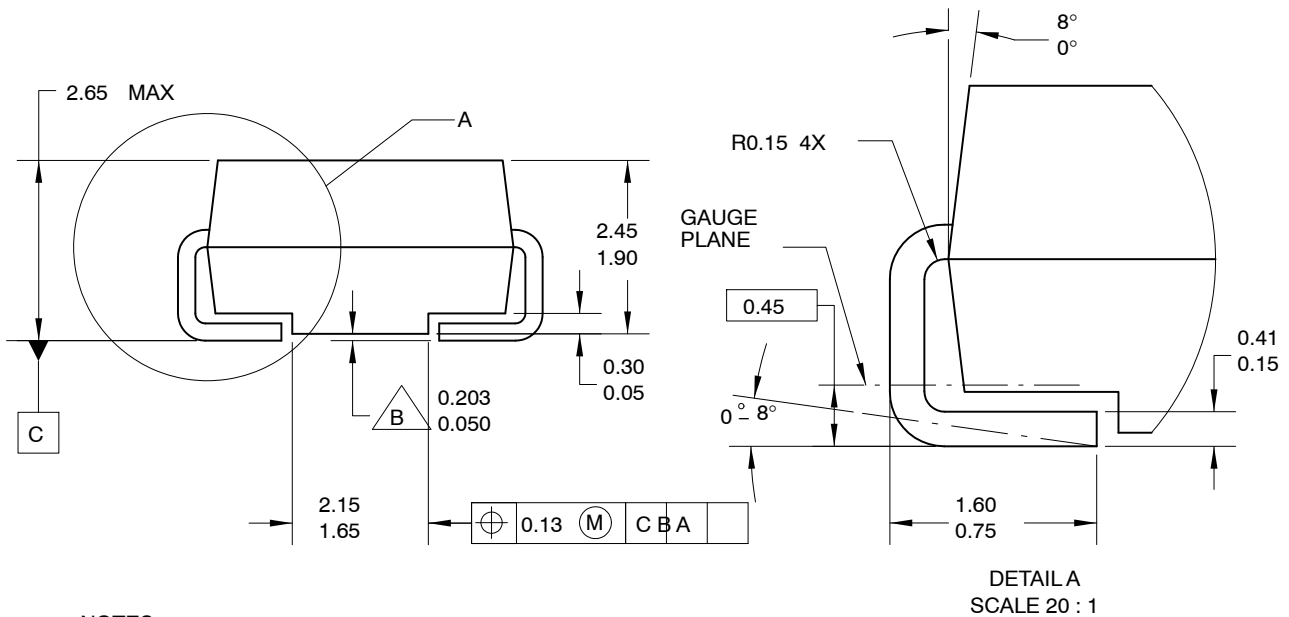
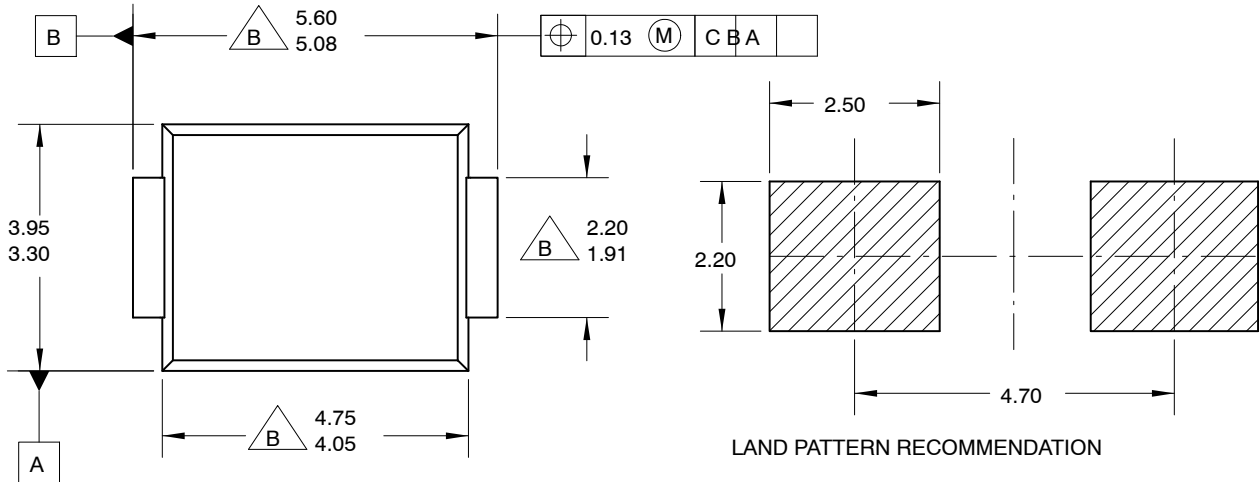
ORDERING INFORMATION

| Part Number | Device Code Marking | Package Type | Shipping [†] |
|-------------|---------------------|------------------|-----------------------|
| ES2A | ES2A | SMB (Pb-Free) | 3000 / Tape & Reel |
| ES2B | ES2B | SMB (Pb-Free) | 3000 / Tape & Reel |
| ES2C | ES2C | SMB (Pb-Free) | 3000 / Tape & Reel |
| ES2D | ES2D | SMB (Pb-Free) | 3000 / Tape & Reel |

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](#).

SMB
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ISSUE O

DATE 31 AUG 2016



NOTES:

- A. EXCEPT WHERE NOTED CONFORMS TO JEDEC DO214 VARIATION AA.
- \triangle B DOES NOT COMPLY JEDEC STD. VALUE.
- C. ALL DIMENSIONS ARE IN MILLIMETERS.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
- F. LAND PATTERN STD. DIOM5336X240M.

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