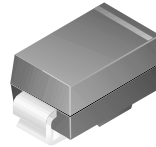


ES1A - ES1D

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.



SMA/DO-214AC
COLOR BAND DENOTES CATHODE

Fast Rectifiers

Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | | | | Units |
|-------------|---|-------------|-----|-----|-----|------------------|
| | | 1A | 1B | 1C | 1D | |
| V_{RRM} | Maximum Repetitive Reverse Voltage | 50 | 100 | 150 | 200 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current, @ $T_A=120^\circ\text{C}$ | 1.0 | | | | A |
| I_{FSM} | Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave | 30 | | | | A |
| T_{stg} | Storage Temperature Range | -50 to +150 | | | | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature | -50 to +150 | | | | $^\circ\text{C}$ |

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics

| Symbol | Parameter | Value | Units |
|-----------------|--|-------|---------------------------|
| P_D | Power Dissipation | 1.47 | W |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient* | 85 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JL}$ | Thermal Resistance, Junction to Lead* | 35 | $^\circ\text{C}/\text{W}$ |

*Device mounted on FR-4 PCB 0.013 mm.

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Device | | | | Units |
|----------|---|--------|----|----|----|---------------|
| | | 1A | 1B | 1C | 1D | |
| V_F | Forward Voltage @ 1.0 A | 0.92 | | | | V |
| t_{rr} | Reverse Recovery Time $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{RR} = 0.25\text{ A}$ | 15 | | | | ns |
| I_R | Reverse Current @ rated V_R | | | | | μA |
| | | | | | | μA |
| C_T | Total Capacitance $V_R = 4.0\text{ V}$, $f = 1.0\text{ MHz}$ | 7.0 | | | | pF |

Typical Characteristics

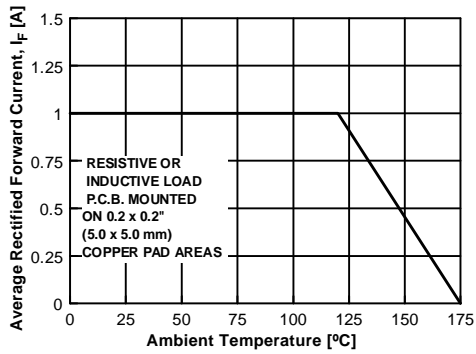


Figure 1. Forward Current Derating Curve

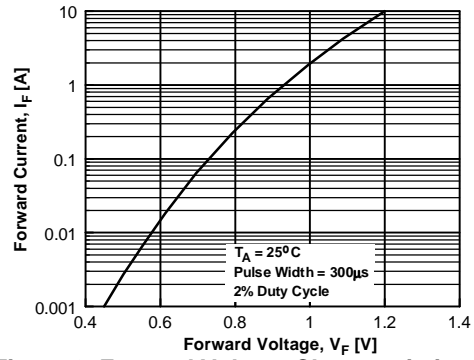


Figure 2. Forward Voltage Characteristics

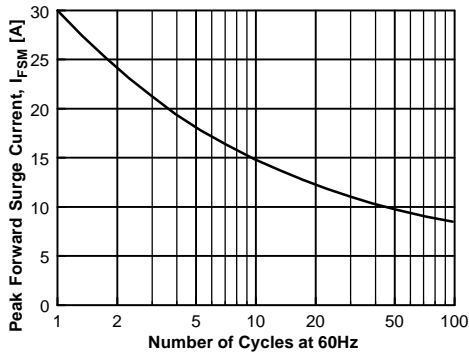


Figure 3. Non-Repetitive Surge Current

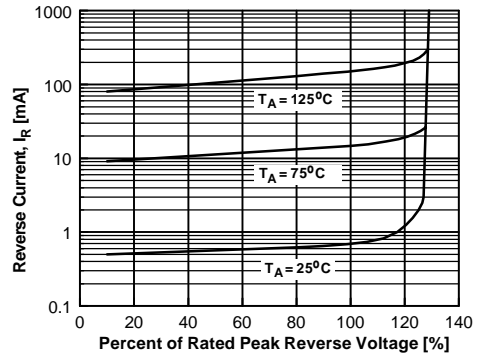


Figure 4. Reverse Current vs Reverse Voltage

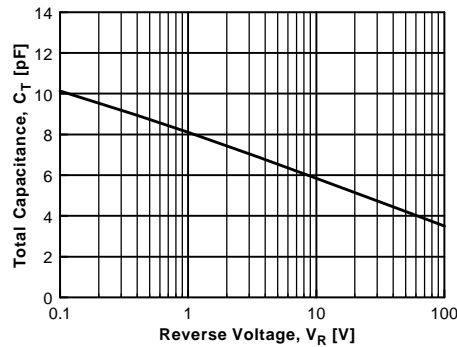
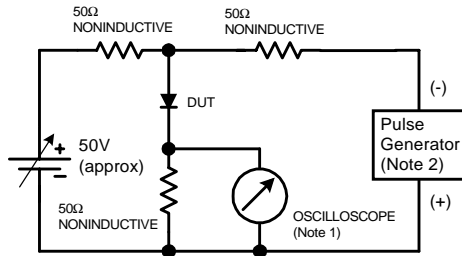
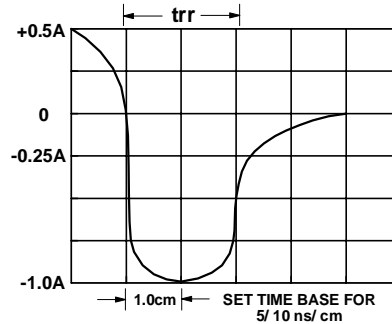


Figure 5. Total Capacitance



NOTES:

1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.



Reverse Recovery Time Characteristic and Test Circuit Diagram

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