



ES1A THRU ES1M

Features

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Superfast Recovery Times For High Efficiency

Maximum Ratings

- Operating Temperature: -50°C to +150°C
- Storage Temperature: -50°C to +150°C
- Maximum Thermal Resistance; 15°C/W Junction To Lead

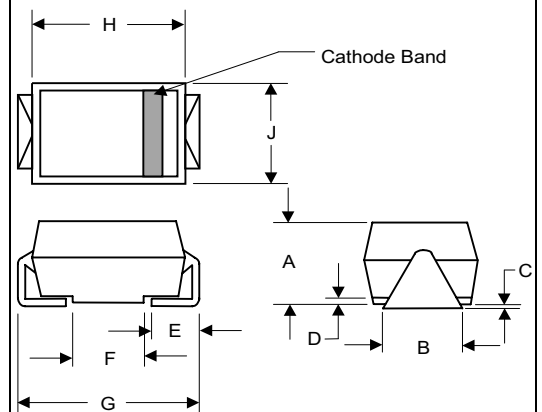
| MCC Part Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------|--|---------------------|-----------------------------|
| ES1A | ES1A | 50V | 35V | 50V |
| ES1B | ES1B | 100V | 70V | 100V |
| ES1C | ES1C | 150V | 105V | 150V |
| ES1D | ES1D | 200V | 140V | 200V |
| ES1G | ES1G | 400V | 280V | 400V |
| ES1J | ES1J | 600V | 420V | 600V |
| ES1K | ES1K | 800V | 560V | 800V |
| ES1M | ES1M | 1000V | 700V | 1000V |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| | | | |
|---|-------------|---|---|
| Average Forward Current | $I_{F(AV)}$ | 1.0A | $T_a = 75^\circ\text{C}$ |
| Peak Forward Surge Current | I_{FSM} | 30A | 8.3ms, half sine |
| Maximum Instantaneous Forward Voltage | V_F | ES1A-D: .975V ES1G-J: 1.35V ES1K~M: 1.70V | $I_{FM} = 1.0A$; $T_J = 25^\circ\text{C}^*$ |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | I_R | 5 μA 100 μA | $T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$ |
| Maximum Reverse Recovery Time | T_{rr} | ES1A-D: 50ns ES1G-K: 75ns ES1M: 100ns | $I_F = 0.5A$, $I_R = 1.0A$, $I_{rr} = 0.25A$ |
| Typical Junction Capacitance | C_J | 45pF | Measured at 1.0MHz, $V_R = 4.0V$ |

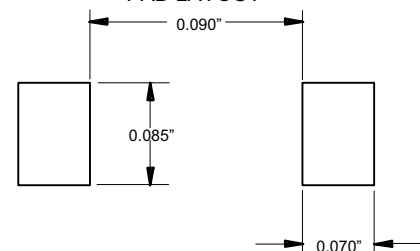
*Pulse test: Pulse width 200 μsec , Duty cycle 2%

1 Amp Ultra Fast Recovery Silicon Rectifier 50 to 1000 Volts

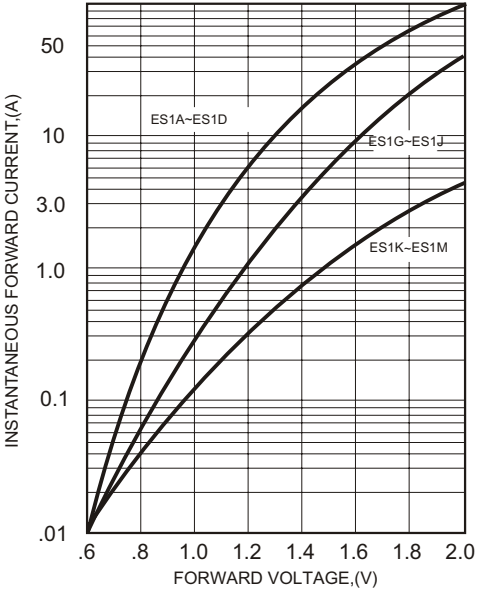


| DIM | DIMENSIONS | | | | NOTE |
|-----|----------------|------|----------------|------|------|
| | INCHES | | MM | | |
| A | .078 | .116 | 1.98 | 2.95 | |
| B | .067 | .089 | 1.70 | 2.25 | |
| C | .002 | .008 | .05 | .20 | |
| D | --- | .02 | --- | .51 | |
| E | .035 | .055 | .89 | 1.40 | |
| F | .065 | .096 | 1.65 | 2.45 | |
| G | .20 ϵ | .224 | 5.1 ϵ | 5.69 | |
| H | .160 | .180 | 4.06 | 4.57 | |
| J | .100 | .112 | 2.57 | 2.84 | |

SUGGESTED SOLDER PAD LAYOUT

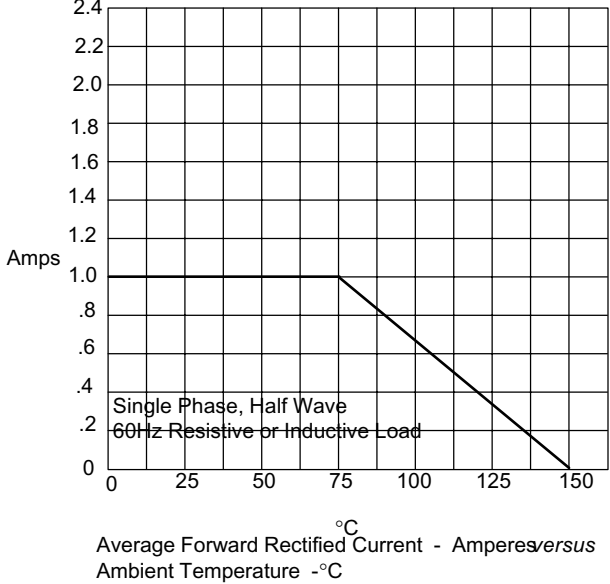


ES1A thru ES1M



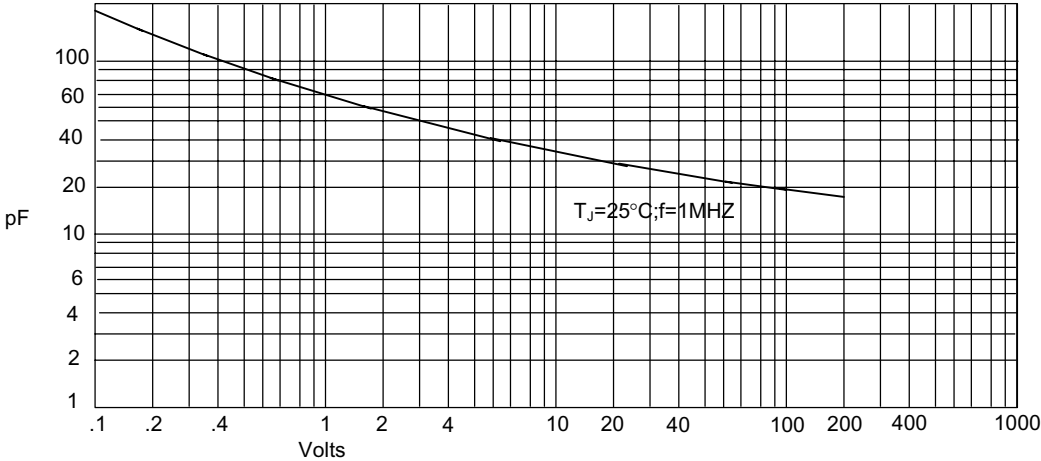
Instantaneous Forward Current - Amperes versus
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



Average Forward Rectified Current - Amperes versus
Ambient Temperature - °C

Figure 3
Junction Capacitance



Junction Capacitance - pF versus
Reverse Voltage - Volts

ES1A thru ES1M

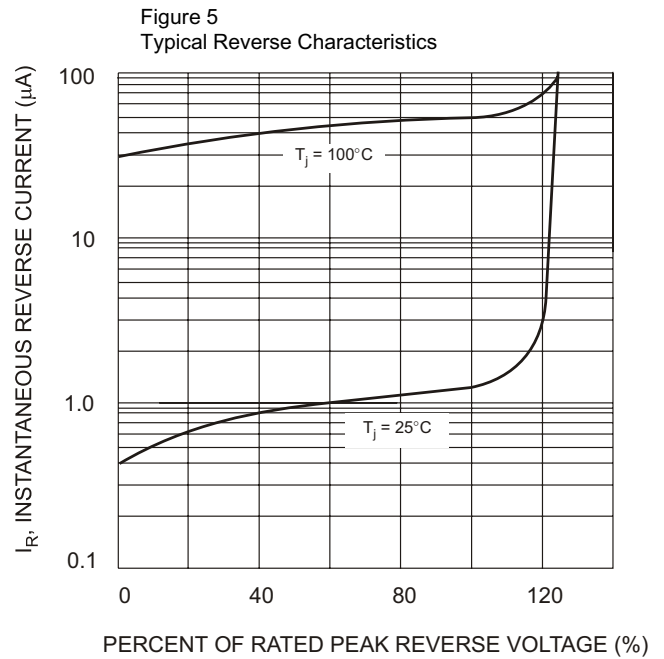
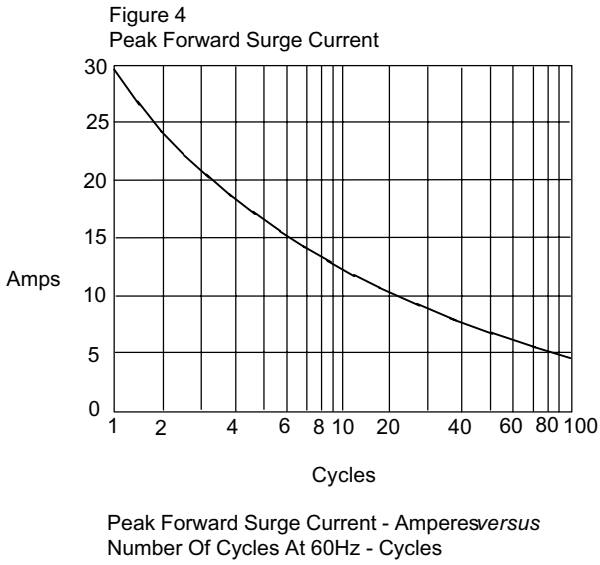
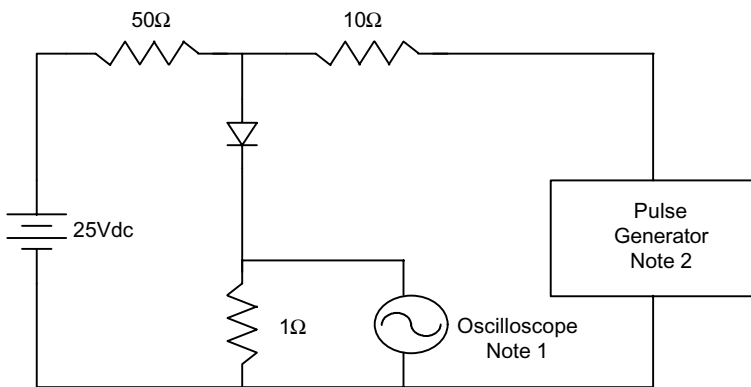


Figure 6
Reverse Recovery Time Characteristic And Test Circuit Diagram



- Notes:
1. Rise Time = 7ns max.
Input impedance = 1 megohm, 22pF
 2. Rise Time = 10ns max.
Source impedance = 50 ohms
 3. Resistors are non-inductive

