



Micro Commercial Components

Micro Commercial Components  
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# ER1A THRU ER1M

## Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Easy Pick And Place
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Ultrafast Recovery Times For High Efficiency

## Maximum Ratings

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

| MCC Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|--------------------|----------------|--|---------------------|-----------------------------|
| ER1A               | ER1A           | 50V                                    | 35V                 | 50V                         |
| ER1B               | ER1B           | 100V                                   | 70V                 | 100V                        |
| ER1C               | ER1C           | 150V                                   | 105V                | 150V                        |
| ER1D               | ER1D           | 200V                                   | 140V                | 200V                        |
| ER1G               | ER1G           | 400V                                   | 280V                | 400V                        |
| ER1J               | ER1J           | 600V                                   | 420V                | 600V                        |
| ER1K               | ER1K           | 800V                                   | 560V                | 800V                        |
| ER1M               | ER1M           | 1000V                                  | 700V                | 1000V                       |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

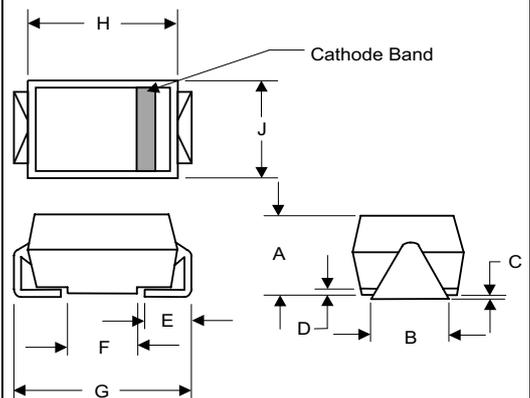
|   |             |   |   |
|---|-------------|---|---|
| Average Forward Current                                 | $I_{F(AV)}$ | 1.0A  | $T_J = 75^\circ\text{C}$                              |
| Peak Forward Surge Current                              | $I_{FSM}$   | 30A   | 8.3ms, half sine                                      |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | ER1A-D: .975V<br>ER1G-K: 1.35V<br>ER1M: 1.60V | $I_{FM} = 1.0A$ ;<br>$T_J = 25^\circ\text{C}^*$       |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 5µA<br>100µA                                  | $T_J = 25^\circ\text{C}$<br>$T_J = 100^\circ\text{C}$ |
| Maximum Reverse Recovery Time                           | $T_{rr}$    | 50ns<br>60ns<br>100ns                         | $I_F = 0.5A$ , $I_R = 1.0A$ ,<br>$I_{rr} = 0.25A$     |
| Typical Junction Capacitance                            | $C_J$       | 45pF  | Measured at 1.0MHz, $V_R = 4.0V$                      |

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

Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

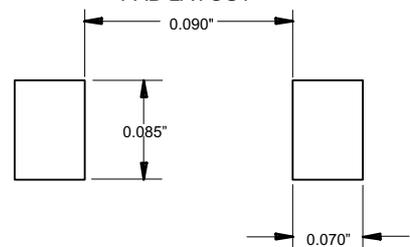
## 1 Amp Ultra Fast Recovery Silicon Rectifier 50 to 1000 Volts

### DO-214AA (HSMB) (Round Lead)



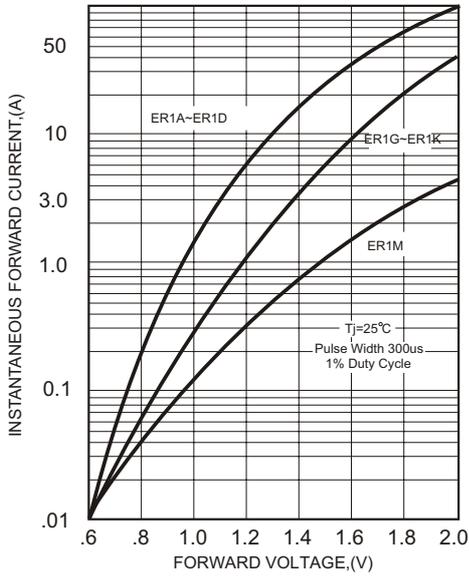
| DIM | DIMENSIONS |      |      |      | NOTE |
|-----|------------|------|------|------|------|
|     | INCHES     |      | MM   |      |      |
| A   | .078       | .116 | 1.98 | 2.95 |      |
| B   | .075       | .089 | 1.90 | 2.25 |      |
| C   | .002       | .008 | .05  | .20  |      |
| D   | ----       | .02  | ---- | .51  |      |
| E   | .035       | .055 | .90  | 1.40 |      |
| F   | .065       | .091 | 1.65 | 2.32 |      |
| G   | .205       | .224 | 5.21 | 5.69 |      |
| H   | .160       | .180 | 4.06 | 4.57 |      |
| J   | .130       | .155 | 3.30 | 3.94 |      |

### SUGGESTED SOLDER PAD LAYOUT



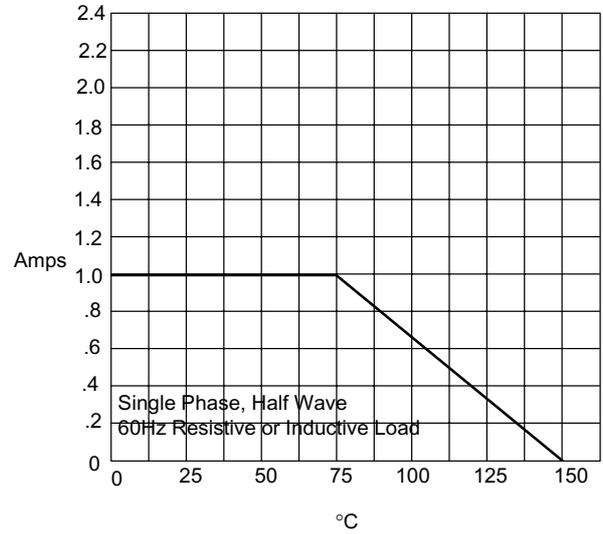
# ER1A thru ER1M

Figure 1  
Typical Forward Characteristics



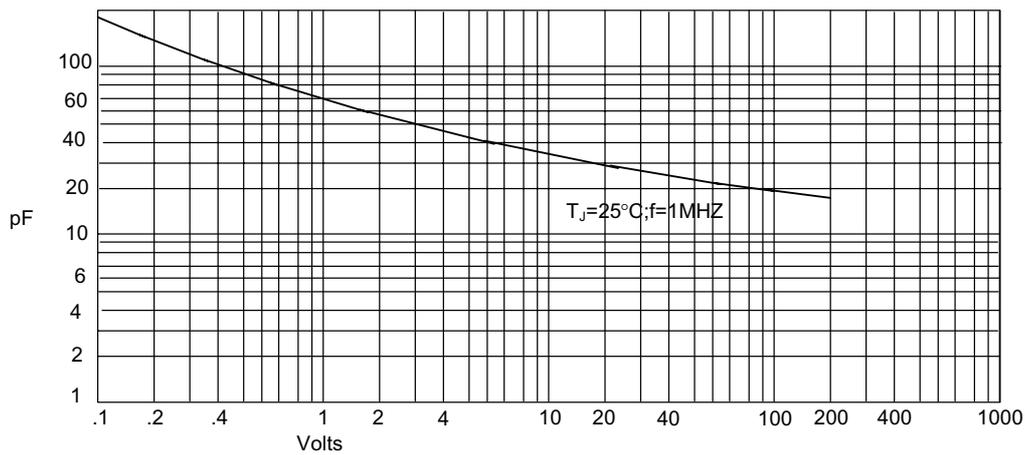
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



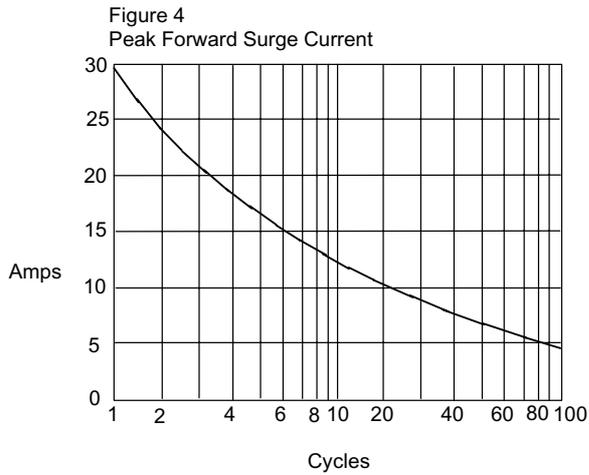
Average Forward Rectified Current - Amperes *versus*  
Ambient Temperature -  $^\circ\text{C}$

Figure 3  
Junction Capacitance



Junction Capacitance - pF *versus*  
Reverse Voltage - Volts

# ER1A thru ER1M



Peak Forward Surge Current - Amperes *versus*  
Number Of Cycles At 60Hz - Cycles

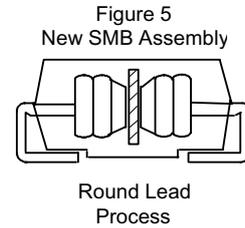
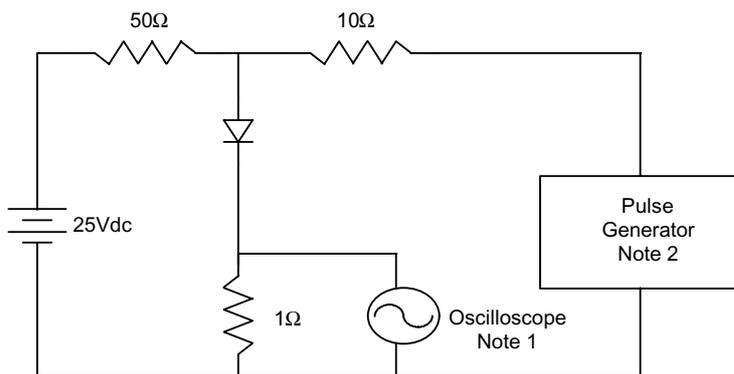
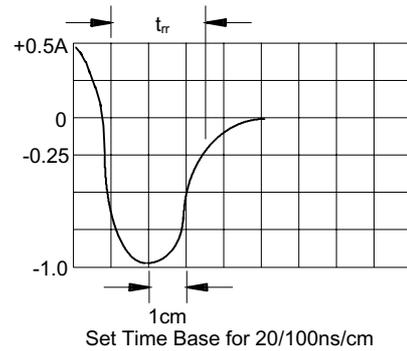


Figure 6  
Reverse Recovery Time Characteristic And Test Circuit Diagram



- 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





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Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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