



Micro Commercial Components



Micro Commercial Components  
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# US2A THRU US2M

## Features

- Halogen free available upon request by adding suffix "-HF"
- Glass Passivated Chip
- Super Fast Switching For High Efficiency
- Low Forward Voltage Drop And High Current Capability
- Low Reverse Leakage Current
- 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

## Maximum Ratings

- Operating Temperature: -50°C to +150°C
- Storage Temperature: -50°C to +150°C
- Maximum Thermal Resistance; 20°C/W Junction To Lead

| MCC Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|--------------------|----------------|--|---------------------|-----------------------------|
| US2A               | US2A           | 50V                                    | 35V                 | 50V                         |
| US2B               | US2B           | 100V                                   | 70V                 | 100V                        |
| US2C               | US2C           | 150V                                   | 105V                | 150V                        |
| US2D               | US2D           | 200V                                   | 140V                | 200V                        |
| US2G               | US2G           | 400V                                   | 280V                | 400V                        |
| US2J               | US2J           | 600V                                   | 420V                | 600V                        |
| US2K               | US2K           | 800V                                   | 560V                | 800V                        |
| US2M               | US2M           | 1000V                                  | 700V                | 1000V                       |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

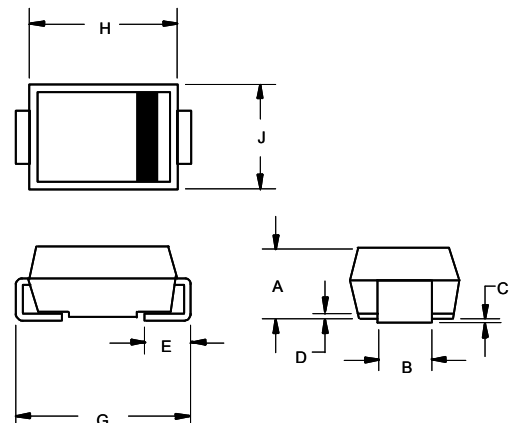
|   |             |   |  |
|---|-------------|---|--|
| Average Forward Current                                 | $I_{F(AV)}$ | 2.0A  | $T_L = 110^\circ\text{C}$                                    |
| Peak Forward Surge Current                              | $I_{FSM}$   | 50A   | 8.3ms, half sine   |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | 1.0V<br>1.4V<br>1.65V   | $I_{FM} = 2.0\text{A};$<br>$T_J = 25^\circ\text{C}$          |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 5 $\mu\text{A}$<br>200 $\mu\text{A}$ (Max)<br>16 $\mu\text{A}$ (Typ.) | $T_J = 25^\circ\text{C}$<br>$T_J = 125^\circ\text{C}$        |
| Maximum Reverse Recovery Time                           | $T_{rr}$    | 50ns<br>75ns  | $I_F=0.5\text{A}, I_R=1.0\text{A},$<br>$I_{rr}=0.25\text{A}$ |
| Typical Junction Capacitance                            | $C_J$       | 28pF  | Measured at 1.0MHz, $V_R=4.0\text{V}$                        |

\*Pulse test: Pulse width 300  $\mu\text{sec}$ , Duty cycle 1%

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

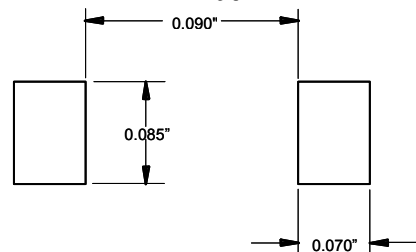
## 2 Amp Ultra Fast Rectifier 50 to 1000 Volts

### DO-214AA (SMB) (Lead Frame)



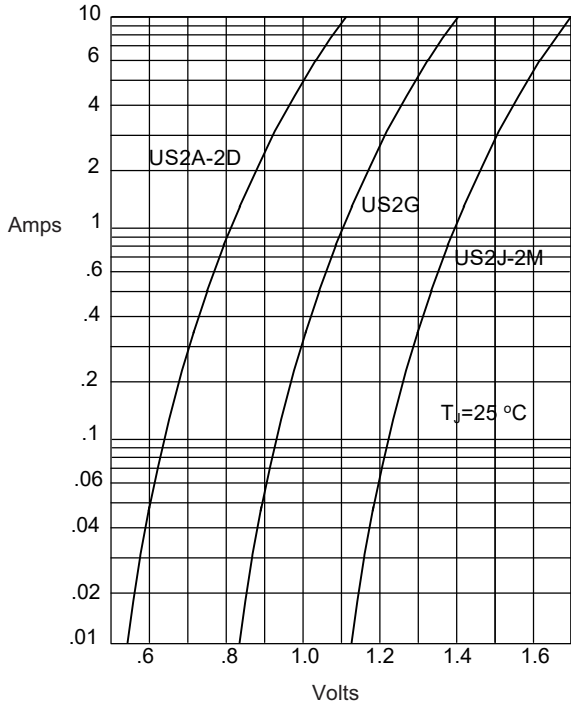
| DIM | DIMENSIONS |          |          |          | NOTE |
|-----|------------|----------|----------|----------|------|
|     | INCHES     |          | MM       |          |      |
| A   | MIN .075   | MAX .095 | MIN 1.91 | MAX 2.41 |      |
| B   | .077       | .083     | 1.96     | 2.10     |      |
| C   | .002       | .008     | .05      | .20      |      |
| D   | ---        | .02      | ---      | .51      |      |
| E   | .030       | .060     | .76      | 1.52     |      |
| G   | .200       | .220     | 5.08     | 5.59     |      |
| H   | .160       | .187     | 4.06     | 4.75     |      |
| J   | .130       | .155     | 3.30     | 3.94     |      |

### SUGGESTED SOLDER PAD LAYOUT



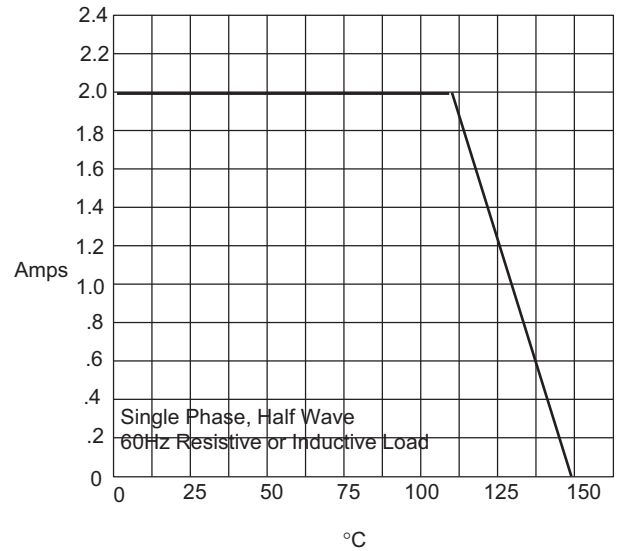
# US2A thru US2M

Figure 1  
Typical Forward Characteristics



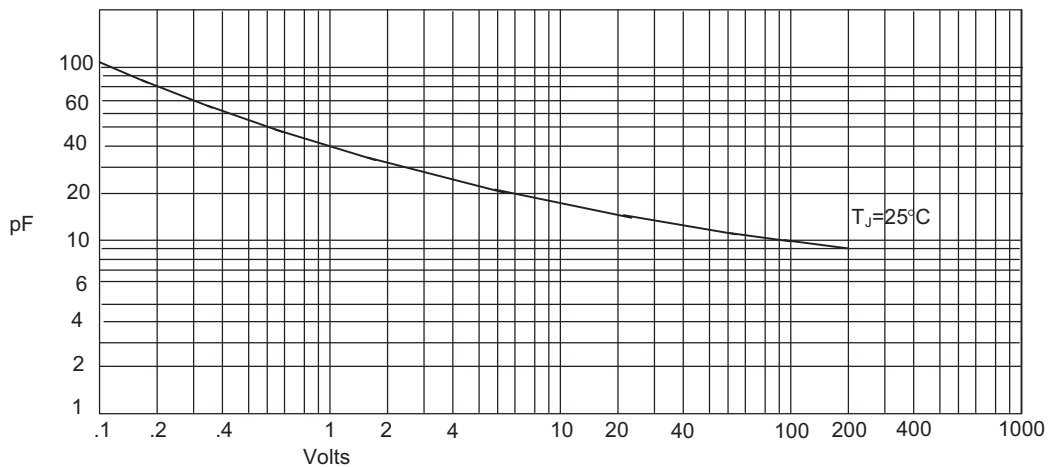
Instantaneous Forward Current - Amperes versus  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



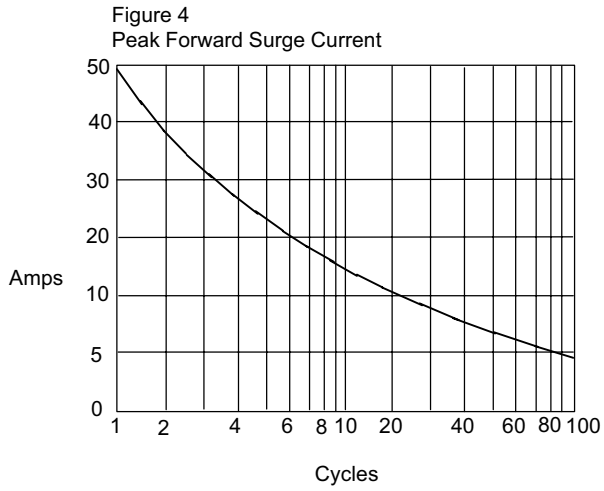
Average Forward Rectified Current - Amperes versus  
Lead Temperature -  $^\circ\text{C}$

Figure 3  
Junction Capacitance



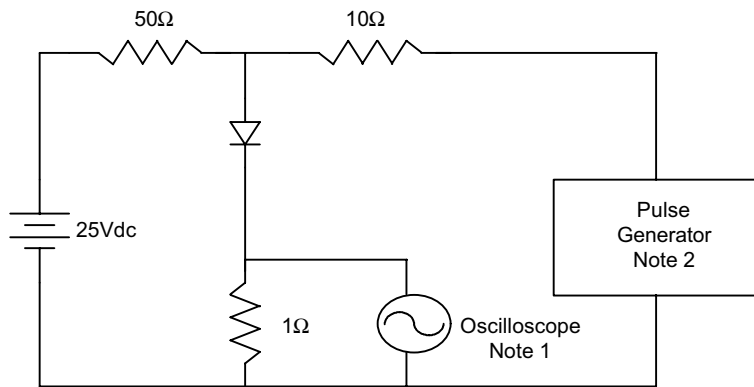
Junction Capacitance - pF versus  
Reverse Voltage - Volts

# US2A thru US2M

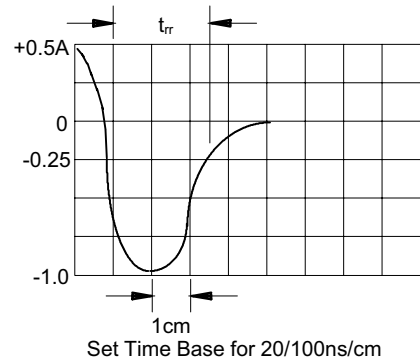


Peak Forward Surge Current - Amperes versus  
Number Of Cycles At 60Hz - Cycles

Figure 5  
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 |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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