Micro Commercial Components
21201 Itasca Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

# US2AA THRU US2MA

## 2 Amp Ultra Fast Rectifier 50 to 1000 Volts

## 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

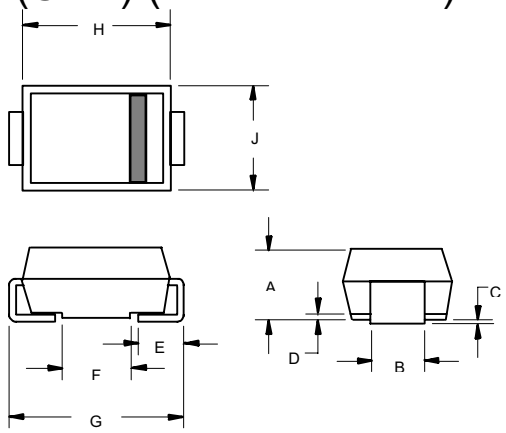
| MCC Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|---|---|---|---|---|
| US2AA | US2A | 50V | 35V | 50V |
| US2BA | US2B | 100V | 70V | 100V |
| US2CA | US2C | 150V | 105V | 150V |
| US2DA | US2D | 200V | 140V | 200V |
| US2GA | US2G | 400V | 280V | 400V |
| US2JA | US2J | 600V | 420V | 600V |
| US2KA | US2K | 800V | 560V | 800V |
| US2MA | US2M | 1000V | 700V | 1000V |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| | | | |
|---|---|---|---|
| Average Forward Current | $I_{F(AV)}$ | 2.0A | $T_L$ = 110°C |
| Peak Forward Surge Current | $I_{FSM}$ | 50A | 8.3ms, half sine |
| Maximum Instantaneous Forward Voltage<br>US2AA-2DA<br>US2GA<br>US2JA-2MA | $V_F$ | 1.0V<br>1.4V<br>1.7V | $I_{FM}$ = 2.0A;<br>$T_J$ = 25°C |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$ | 5μA<br>350μA | $T_J$ = 25°C<br>$T_J$ = 125°C |
| Maximum Reverse Recovery Time<br>US2AA-2GA<br>US2JA-2MA | $T_{rr}$ | 50ns<br>75ns | $I_F$=0.5A, $I_R$=1.0A,<br>$I_{rr}$=0.25A |
| Typical Junction Capacitance | $C_J$ | 28pF | Measured at 1.0MHz, $V_R$=4.0V |

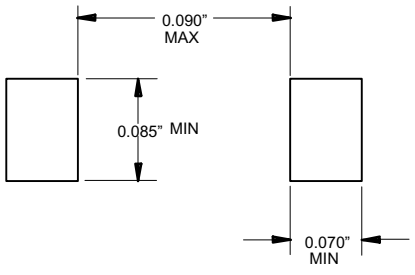
*Pulse test: Pulse width 300 μsec, Duty cycle 1%
Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

## DO-214AC (SMA) (LEAD FRAME)



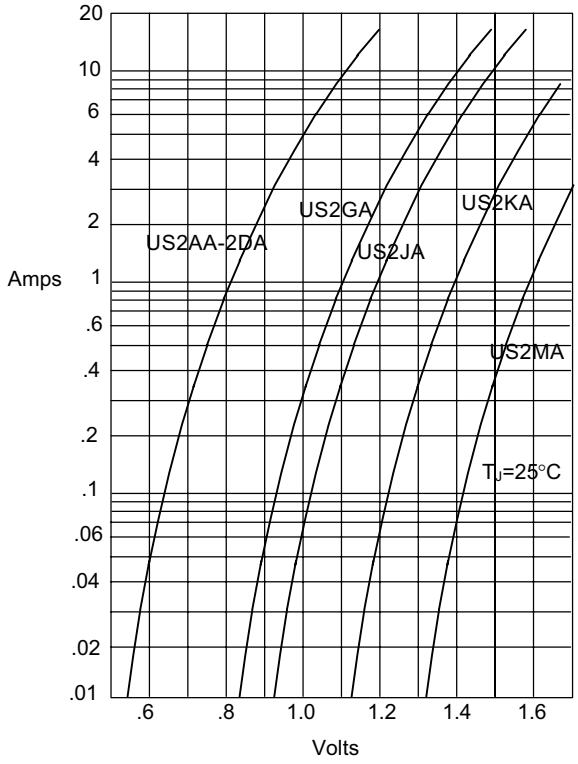

| Dimensions | | | | | |
|---|---|---|---|---|---|
| | INCHES | | MM | | |
| DIM | MIN | MAX | MIN | MAX | NOTE |
| A | .079 | .096 | 2.00 | 2.44 | |
| B | .050 | .064 | 1.27 | 1.63 | |
| C | .002 | .008 | .05 | .20 | |
| D | --- | .02 | --- | .51 | |
| E | .030 | .060 | .76 | 1.52 | |
| F | .065 | .091 | 1.65 | 2.32 | |
| G | .189 | .220 | 4.80 | 5.59 | |
| H | .157 | .181 | 4.00 | 4.60 | |
| J | .090 | .115 | 2.25 | 2.92 | |

SUGGESTED SOLDER PAD LAYOUT



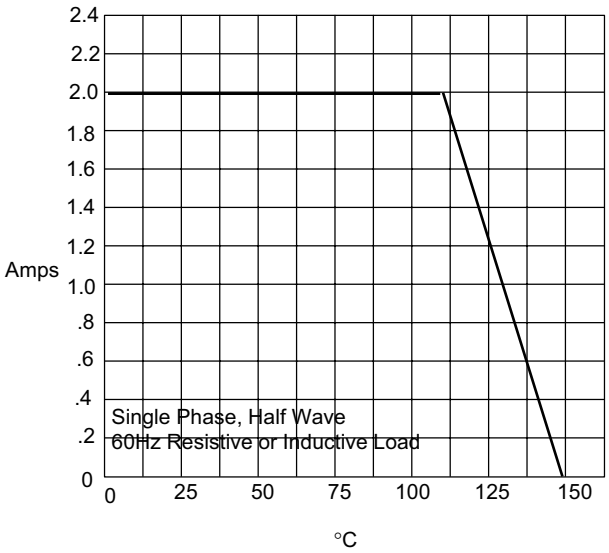
# US2AA thru US2MA

Figure 1
Typical Forward Characteristics



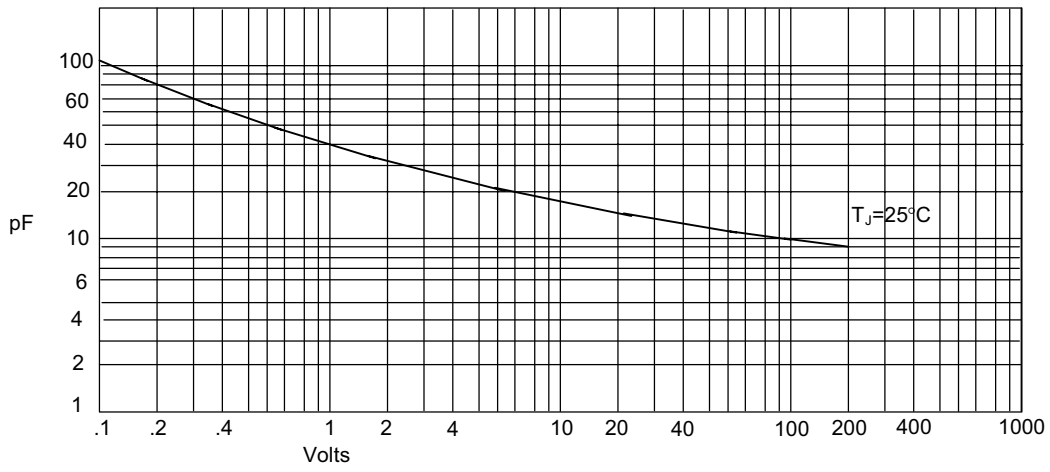

Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



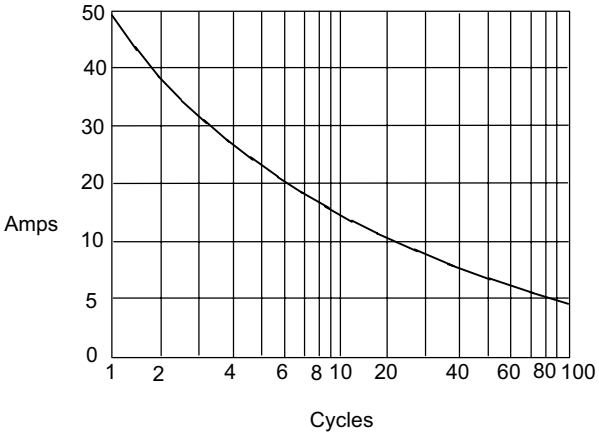

Average Forward Rectified Current - Amperes *versus*
Lead Temperature -°C

Figure 3
Junction Capacitance



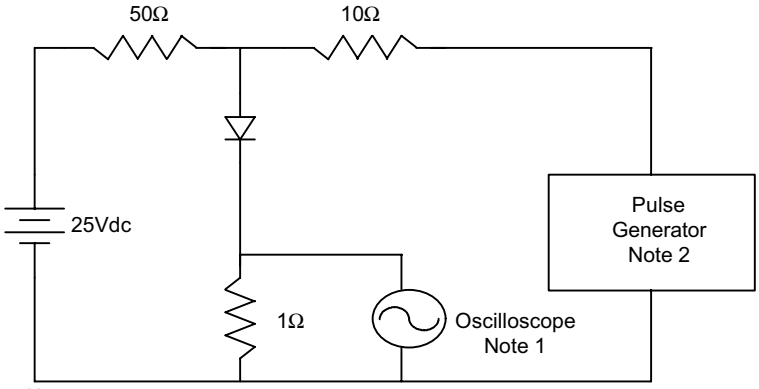

Junction Capacitance - pF *versus*
Reverse Voltage - Volts

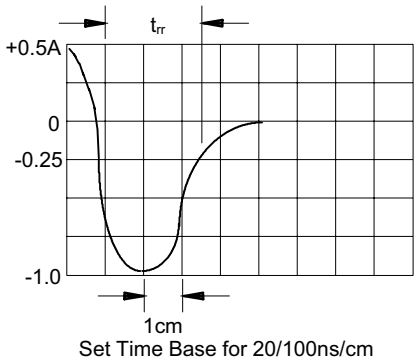
Figure 4
Peak Forward Surge Current




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

Figure 5
Reverse Recovery Time Characteristic And Test Circuit Diagram




Set Time Base for 20/100ns/cm

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

## Ordering Information :

| Device | Packing |
|---|---|
| Part Number-TP | Tape&Reel: 5Kpcs/Reel |

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

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