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|---|----------------|
|  | <b>E480232</b> |
|---|----------------|

**Features**

- Glass Passivated Chip
- Excellent Clamping Capability
- Low Leakage
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SA5.0CA
- Fast Response Time
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Mechanical Data**

- Weight: 0.4 Gram(Appx.)

**Maximum Ratings**

- For Capacitive Load, Derate Current by 20%
- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

|                                       |             |       |                                      |
|---------------------------------------|-------------|-------|--------------------------------------|
| Peak Pulse Power Dissipation          | $P_{PPM}$   | 500W  | $T_A=25^{\circ}C$                    |
| Steady State Power Dissipation        | $P_{M(AV)}$ | 3.0 W | $T_L=75^{\circ}C$                    |
| Maximum instantaneous forward voltage | $V_F$       | 3.5V  | $I_{FM}=35A;$<br>$T_J=25^{\circ}C *$ |

\*Pulse test: Pulse width 300 usec, Duty cycle 1%

1.High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

**Device Marking:**

Unidirectional - Type Number and Cathode Band  
Bidirectional - Type Number Only

**Pin Configuration**



**500WATTS TVS  
5.0 to 170 VOLTS**

**DO-15**



| DIM | DIMENSIONS |       |       |       | NOTE |
|-----|------------|-------|-------|-------|------|
|     | INCHES     |       | MM    |       |      |
|     | MIN        | MAX   | MIN   | MAX   |      |
| A   | 0.230      | 0.300 | 5.80  | 7.60  |      |
| B   | 0.104      | 0.140 | 2.60  | 3.60  |      |
| C   | 0.026      | 0.035 | 0.70  | 0.90  |      |
| D   | 1.000      | ----- | 25.40 | ----- |      |

| MCC PART NUMBER |          | REVERSE STAND-OFF VOLTAGE VRWM(V) | BREAKDOWN VOLTAGE VBR(V) MIN.@IT | BREAKDOWN VOLTAGE VBR(V) MAX.@IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @ VRWM IR(μ A) | Maxium Temperature Coefficient of V <sub>(BR)</sub> (mV/°C) |
|-----------------|----------|-----------------------------------|----------------------------------|----------------------------------|----------------------|-------------------------------------|----------------------------|--------------------------------|---|
| UNI-Polar       | BI-Polar |                                   |                                  |                                  |                      |                                     |                            |                                |   |
| SA5.0A          | SA5.0CA  | 5.0                               | 6.40                             | 7.00                             | 10                   | 9.2                                 | 55.4                       | 600                            | 5   |
| SA6.0A          | SA6.0CA  | 6.0                               | 6.67                             | 7.37                             | 10                   | 10.3                                | 49.5                       | 600                            | 5   |
| SA6.5A          | SA6.5CA  | 6.5                               | 7.22                             | 7.98                             | 10                   | 11.2                                | 45.5                       | 400                            | 5   |
| SA7.0A          | SA7.0CA  | 7.0                               | 7.78                             | 8.60                             | 10                   | 12                                  | 42.5                       | 150                            | 6   |
| SA7.5A          | SA7.5CA  | 7.5                               | 8.33                             | 9.21                             | 1                    | 12.9                                | 39.5                       | 50                             | 7   |
| SA8.0A          | SA8.0CA  | 8.0                               | 8.89                             | 9.83                             | 1                    | 13.6                                | 37.5                       | 25                             | 7   |
| SA8.5A          | SA8.5CA  | 8.5                               | 9.44                             | 10.40                            | 1                    | 14.4                                | 35.4                       | 10                             | 8   |
| SA9.0A          | SA9.0CA  | 9.0                               | 10.00                            | 11.10                            | 1                    | 15.4                                | 33.1                       | 5                              | 9   |
| SA10A           | SA10CA   | 10.0                              | 11.10                            | 12.30                            | 1                    | 17                                  | 30                         | 1                              | 10  |
| SA11A           | SA11CA   | 11.0                              | 12.20                            | 13.50                            | 1                    | 18.2                                | 28                         | 1                              | 11  |
| SA12A           | SA12CA   | 12.0                              | 13.30                            | 14.70                            | 1                    | 19.9                                | 25.6                       | 1                              | 12  |
| SA13A           | SA13CA   | 13.0                              | 14.40                            | 15.90                            | 1                    | 21.5                                | 23.7                       | 1                              | 13  |
| SA14A           | SA14CA   | 14.0                              | 15.60                            | 17.20                            | 1                    | 23.2                                | 22                         | 1                              | 14  |
| SA15A           | SA15CA   | 15.0                              | 16.70                            | 18.50                            | 1                    | 24.4                                | 20.9                       | 1                              | 16  |
| SA16A           | SA16CA   | 16.0                              | 17.80                            | 19.70                            | 1                    | 26                                  | 19.6                       | 1                              | 17  |
| SA17A           | SA17CA   | 17.0                              | 18.90                            | 20.90                            | 1                    | 27.6                                | 18.5                       | 1                              | 19  |
| SA18A           | SA18CA   | 18.0                              | 20.00                            | 22.10                            | 1                    | 29.2                                | 17.5                       | 1                              | 20  |
| SA20A           | SA20CA   | 20.0                              | 22.20                            | 24.50                            | 1                    | 32.4                                | 15.7                       | 1                              | 23  |
| SA22A           | SA22CA   | 22.0                              | 24.40                            | 26.90                            | 1                    | 35.5                                | 14.4                       | 1                              | 25  |
| SA24A           | SA24CA   | 24.0                              | 26.70                            | 29.50                            | 1                    | 38.9                                | 13.1                       | 1                              | 28  |
| SA26A           | SA26CA   | 26.0                              | 28.90                            | 31.90                            | 1                    | 42.1                                | 12.1                       | 1                              | 30  |
| SA28A           | SA28CA   | 28.0                              | 31.10                            | 34.40                            | 1                    | 45.4                                | 11.2                       | 1                              | 31  |
| SA30A           | SA30CA   | 30.0                              | 33.30                            | 36.80                            | 1                    | 48.4                                | 10.5                       | 1                              | 36  |
| SA33A           | SA33CA   | 33.0                              | 36.70                            | 40.60                            | 1                    | 53.3                                | 9.6                        | 1                              | 39  |
| SA36A           | SA36CA   | 36.0                              | 40.00                            | 44.20                            | 1                    | 58.1                                | 8.8                        | 1                              | 41  |
| SA40A           | SA40CA   | 40.0                              | 44.40                            | 49.10                            | 1                    | 64.5                                | 7.9                        | 1                              | 46  |
| SA43A           | SA43CA   | 43.0                              | 47.80                            | 52.80                            | 1                    | 69.4                                | 7.3                        | 1                              | 50  |
| SA45A           | SA45CA   | 45.0                              | 50.00                            | 55.30                            | 1                    | 72.7                                | 7                          | 1                              | 52  |
| SA48A           | SA48CA   | 48.0                              | 53.30                            | 58.90                            | 1                    | 77.4                                | 6.6                        | 1                              | 56  |
| SA51A           | SA51CA   | 51.0                              | 56.70                            | 62.70                            | 1                    | 82.4                                | 6.2                        | 1                              | 61  |
| SA54A           | SA54CA   | 54.0                              | 60.00                            | 66.30                            | 1                    | 87.1                                | 5.9                        | 1                              | 65  |
| SA58A           | SA58CA   | 58.0                              | 64.40                            | 71.20                            | 1                    | 93.6                                | 5.4                        | 1                              | 70  |
| SA60A           | SA60CA   | 60.0                              | 66.70                            | 73.70                            | 1                    | 96.8                                | 5.3                        | 1                              | 71  |
| SA64A           | SA64CA   | 64.0                              | 71.10                            | 78.60                            | 1                    | 103                                 | 5                          | 1                              | 76  |
| SA70A           | SA70CA   | 70.0                              | 77.80                            | 86.00                            | 1                    | 113                                 | 4.5                        | 1                              | 85  |
| SA75A           | SA75CA   | 75.0                              | 83.30                            | 92.10                            | 1                    | 121                                 | 4.2                        | 1                              | 91  |
| SA78A           | SA78CA   | 78.0                              | 86.70                            | 95.80                            | 1                    | 126                                 | 4                          | 1                              | 95  |
| SA85A           | SA85CA   | 85.0                              | 94.40                            | 104.00                           | 1                    | 137                                 | 3.7                        | 1                              | 103   |
| SA90A           | SA90CA   | 90.0                              | 100.00                           | 111.00                           | 1                    | 146                                 | 3.5                        | 1                              | 110   |
| SA100A          | SA100CA  | 100.0                             | 111.00                           | 123.00                           | 1                    | 162                                 | 3.1                        | 1                              | 123   |
| SA110A          | SA110CA  | 110.0                             | 122.00                           | 135.00                           | 1                    | 177                                 | 2.9                        | 1                              | 133   |
| SA120A          | SA120CA  | 120.0                             | 133.00                           | 147.00                           | 1                    | 193                                 | 2.6                        | 1                              | 146   |
| SA130A          | SA130CA  | 130.0                             | 144.00                           | 159.00                           | 1                    | 209                                 | 2.4                        | 1                              | 158   |
| SA150A          | SA150CA  | 150.0                             | 167.00                           | 185.00                           | 1                    | 243                                 | 2.1                        | 1                              | 184   |
| SA160A          | SA160CA  | 160.0                             | 178.00                           | 197.00                           | 1                    | 259                                 | 2                          | 1                              | 196   |
| SA170A          | SA170CA  | 170.0                             | 189.00                           | 209.00                           | 1                    | 275                                 | 1.9                        | 1                              | 208   |

For bidirectional type having V<sub>VRWM</sub> of 10 volts and less, the I<sub>R</sub> limit is double.  
 For parts without A, the V<sub>BR</sub> is ± 10%

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve



Fig. 2 - Pulse Waveform



Fig. 3 - Pulse Derating Curve

