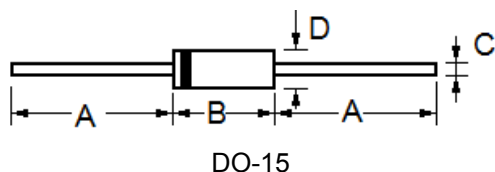




## AXIAL LEAD TRANSIENT VOLTAGE SUPPRESSORS

### SA5.0 - SA440CA

#### DIMENSION



| Dim | Millimeters |      | Inches |       |
|-----|-------------|------|--------|-------|
|     | Min         | Max  | Min    | Max   |
| A   | 25.4        | ---  | 1.000  | ---   |
| B   | 5.80        | 7.60 | 0.230  | 0.300 |
| C   | 0.70        | 0.90 | 0.028  | 0.034 |
| D   | 2.60        | 3.60 | 0.104  | 0.140 |

#### SPECIFICATION

| Type Number |         | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RMW</sub> |
|-------------|---------|---------------------------|--|---|---------------------|---|---------------------|-----------------------------------|
| (Uni)       | (Bi)    | V <sub>RMW</sub> (V)      | V <sub>BR MIN</sub> (V)                | V <sub>BR MAX</sub> (V)                 | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)               |
| SA5.0       | SA5.0C  | 5.0                       | 6.40                                   | 7.30                                    | 10                  | 9.6                                       | 53.1                | 600.0                             |
| SA5.0A      | SA5.0CA | 5.0                       | 6.40                                   | 7.00                                    | 10                  | 9.2                                       | 55.4                | 600.0                             |
| SA6.0       | SA6.0C  | 6.0                       | 6.67                                   | 8.15                                    | 10                  | 11.4                                      | 44.7                | 600.0                             |
| SA6.0A      | SA6.0CA | 6.0                       | 6.67                                   | 7.37                                    | 10                  | 10.3                                      | 49.5                | 600.0                             |
| SA6.5       | SA6.5C  | 6.5                       | 7.22                                   | 8.82                                    | 10                  | 12.3                                      | 41.5                | 400.0                             |
| SA6.5A      | SA6.5CA | 6.5                       | 7.22                                   | 7.98                                    | 10                  | 11.2                                      | 45.5                | 400.0                             |
| SA7.0       | SA7.0C  | 7.0                       | 7.78                                   | 9.51                                    | 10                  | 13.3                                      | 39.3                | 150.0                             |
| SA7.0A      | SA7.0CA | 7.0                       | 7.78                                   | 8.60                                    | 10                  | 12.0                                      | 42.5                | 150.0                             |
| SA7.5       | SA7.5C  | 7.5                       | 8.33                                   | 10.2                                    | 1.0                 | 14.3                                      | 35.7                | 50.0                              |
| SA7.5A      | SA7.5CA | 7.5                       | 8.33                                   | 9.21                                    | 1.0                 | 12.9                                      | 39.5                | 50.0                              |
| SA8.0       | SA8.0C  | 8.0                       | 8.89                                   | 10.9                                    | 1.0                 | 15.0                                      | 34.0                | 25.0                              |
| SA8.0A      | SA8.0CA | 8.0                       | 8.89                                   | 9.83                                    | 1.0                 | 13.6                                      | 37.5                | 25.0                              |
| SA8.5       | SA8.5C  | 8.5                       | 9.44                                   | 11.5                                    | 1.0                 | 15.9                                      | 32.1                | 10.0                              |
| SA8.5A      | SA8.5CA | 8.5                       | 9.44                                   | 10.4                                    | 1.0                 | 14.4                                      | 35.4                | 10.0                              |
| SA9.0       | SA9.0C  | 9.0                       | 10.0                                   | 12.2                                    | 1.0                 | 16.9                                      | 30.2                | 5.0                               |
| SA9.0A      | SA9.0CA | 9.0                       | 10.0                                   | 11.1                                    | 1.0                 | 15.4                                      | 33.1                | 5.0                               |
| SA10        | SA10C   | 10                        | 11.1                                   | 13.6                                    | 1.0                 | 18.8                                      | 27.1                | 3.0                               |
| SA10A       | SA10CA  | 10                        | 11.1                                   | 12.3                                    | 1.0                 | 17.0                                      | 30.0                | 3.0                               |
| SA11        | SA11C   | 11                        | 12.2                                   | 14.9                                    | 1.0                 | 20.1                                      | 25.4                | 3.0                               |
| SA11A       | SA11CA  | 11                        | 12.2                                   | 13.5                                    | 1.0                 | 18.2                                      | 28.0                | 3.0                               |
| SA12        | SA12C   | 12                        | 13.3                                   | 16.3                                    | 1.0                 | 22.0                                      | 23.2                | 3.0                               |
| SA12A       | SA12CA  | 12                        | 13.3                                   | 14.7                                    | 1.0                 | 19.9                                      | 25.6                | 3.0                               |
| SA13        | SA13C   | 13                        | 14.4                                   | 17.6                                    | 1.0                 | 23.8                                      | 21.4                | 3.0                               |
| SA13A       | SA13CA  | 13                        | 14.4                                   | 15.9                                    | 1.0                 | 21.5                                      | 23.7                | 3.0                               |

For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double



## AXIAL LEAD TRANSIENT VOLTAGE SUPPRESSORS

### SA5.0 - SA440CA

| Type Number |        | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RMW</sub> |
|-------------|--------|---------------------------|--|---|---------------------|---|---------------------|-----------------------------------|
| (Uni)       | (Bi)   | V <sub>RMW</sub> (V)      | V <sub>BR MIN</sub> (V)                | V <sub>BR MAX</sub> (V)                 | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)               |
| SA14        | SA14C  | 14                        | 15.6                                   | 19.1                                    | 1.0                 | 25.8                                      | 19.8                | 3.0                               |
| SA14A       | SA14CA | 14                        | 15.6                                   | 17.2                                    | 1.0                 | 23.2                                      | 22.0                | 3.0                               |
| SA15        | SA15C  | 15                        | 16.7                                   | 20.4                                    | 1.0                 | 26.9                                      | 19.0                | 3.0                               |
| SA15A       | SA15CA | 15                        | 16.7                                   | 18.5                                    | 1.0                 | 24.4                                      | 20.9                | 3.0                               |
| SA16        | SA16C  | 16                        | 17.8                                   | 21.8                                    | 1.0                 | 28.8                                      | 17.7                | 3.0                               |
| SA16A       | SA16CA | 16                        | 17.8                                   | 19.7                                    | 1.0                 | 26.0                                      | 19.6                | 3.0                               |
| SA17        | SA17C  | 17                        | 18.9                                   | 23.1                                    | 1.0                 | 30.5                                      | 16.7                | 3.0                               |
| SA17A       | SA17CA | 17                        | 18.9                                   | 20.9                                    | 1.0                 | 27.6                                      | 18.5                | 3.0                               |
| SA18        | SA18C  | 18                        | 20.0                                   | 24.4                                    | 1.0                 | 32.2                                      | 15.8                | 3.0                               |
| SA18A       | SA18CA | 18                        | 20.0                                   | 22.1                                    | 1.0                 | 29.2                                      | 17.5                | 3.0                               |
| SA20        | SA20C  | 20                        | 22.2                                   | 27.1                                    | 1.0                 | 35.8                                      | 14.2                | 3.0                               |
| SA20A       | SA20CA | 20                        | 22.2                                   | 24.5                                    | 1.0                 | 32.4                                      | 15.7                | 3.0                               |
| SA22        | SA22C  | 22                        | 24.4                                   | 29.8                                    | 1.0                 | 39.4                                      | 12.9                | 3.0                               |
| SA22A       | SA22CA | 22                        | 24.4                                   | 26.9                                    | 1.0                 | 35.5                                      | 14.4                | 3.0                               |
| SA24        | SA24C  | 24                        | 26.7                                   | 32.6                                    | 1.0                 | 43.0                                      | 11.9                | 3.0                               |
| SA24A       | SA24CA | 24                        | 26.7                                   | 29.5                                    | 1.0                 | 38.9                                      | 13.1                | 3.0                               |
| SA26        | SA26C  | 26                        | 28.9                                   | 35.3                                    | 1.0                 | 46.6                                      | 10.9                | 3.0                               |
| SA26A       | SA26CA | 26                        | 28.9                                   | 31.9                                    | 1.0                 | 42.1                                      | 12.1                | 3.0                               |
| SA28        | SA28C  | 28                        | 31.1                                   | 38.0                                    | 1.0                 | 50.0                                      | 10.2                | 3.0                               |
| SA28A       | SA28CA | 28                        | 31.1                                   | 34.4                                    | 1.0                 | 45.4                                      | 11.2                | 3.0                               |
| SA30        | SA30C  | 30                        | 33.3                                   | 40.7                                    | 1.0                 | 53.5                                      | 9.5                 | 3.0                               |
| SA30A       | SA30CA | 30                        | 33.3                                   | 36.8                                    | 1.0                 | 48.4                                      | 10.5                | 3.0                               |
| SA33        | SA33C  | 33                        | 36.7                                   | 44.9                                    | 1.0                 | 59.0                                      | 8.6                 | 3.0                               |
| SA33A       | SA33CA | 33                        | 36.7                                   | 40.6                                    | 1.0                 | 53.3                                      | 9.6                 | 3.0                               |
| SA36        | SA36C  | 36                        | 40.0                                   | 48.9                                    | 1.0                 | 64.3                                      | 7.9                 | 3.0                               |
| SA36A       | SA36CA | 36                        | 40.0                                   | 44.2                                    | 1.0                 | 58.1                                      | 8.8                 | 3.0                               |
| SA40        | SA40C  | 40                        | 44.4                                   | 54.3                                    | 1.0                 | 71.4                                      | 7.1                 | 3.0                               |
| SA40A       | SA40CA | 40                        | 44.4                                   | 49.1                                    | 1.0                 | 64.5                                      | 7.9                 | 3.0                               |
| SA43        | SA43C  | 43                        | 47.8                                   | 58.4                                    | 1.0                 | 76.7                                      | 6.6                 | 3.0                               |
| SA43A       | SA43CA | 43                        | 47.8                                   | 52.8                                    | 1.0                 | 69.4                                      | 7.3                 | 3.0                               |
| SA45        | SA45C  | 45                        | 50.0                                   | 61.1                                    | 1.0                 | 80.3                                      | 6.4                 | 3.0                               |
| SA45A       | SA45CA | 45                        | 50.0                                   | 55.3                                    | 1.0                 | 72.7                                      | 7.0                 | 3.0                               |
| SA48        | SA48C  | 48                        | 53.3                                   | 65.2                                    | 1.0                 | 85.5                                      | 6.0                 | 3.0                               |
| SA48A       | SA48CA | 48                        | 53.3                                   | 58.9                                    | 1.0                 | 77.4                                      | 6.6                 | 3.0                               |
| SA51        | SA51C  | 51                        | 56.7                                   | 69.3                                    | 1.0                 | 91.1                                      | 5.6                 | 3.0                               |
| SA51A       | SA51CA | 51                        | 56.7                                   | 62.7                                    | 1.0                 | 82.4                                      | 6.2                 | 3.0                               |

For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double



## AXIAL LEAD TRANSIENT VOLTAGE SUPPRESSORS

### SA5.0 - SA440CA

| Type Number |         | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RMW</sub> |
|-------------|---------|---------------------------|--|---|---------------------|---|---------------------|-----------------------------------|
| (Uni)       | (Bi)    | V <sub>RMW</sub> (V)      | V <sub>BR MIN</sub> (V)                | V <sub>BR MAX</sub> (V)                 | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)               |
| SA54        | SA54C   | 54                        | 60.0                                   | 73.3                                    | 1.0                 | 96.3                                      | 5.3                 | 3.0                               |
| SA54A       | SA54CA  | 54                        | 60.0                                   | 66.3                                    | 1.0                 | 87.1                                      | 5.9                 | 3.0                               |
| SA58        | SA58C   | 58                        | 64.4                                   | 78.7                                    | 1.0                 | 103                                       | 5.0                 | 3.0                               |
| SA58A       | SA58CA  | 58                        | 64.4                                   | 71.2                                    | 1.0                 | 93.6                                      | 5.4                 | 3.0                               |
| SA60        | SA60C   | 60                        | 66.7                                   | 81.5                                    | 1.0                 | 107                                       | 4.8                 | 3.0                               |
| SA60A       | SA60CA  | 60                        | 66.7                                   | 73.7                                    | 1.0                 | 96.8                                      | 5.3                 | 3.0                               |
| SA64        | SA64C   | 64                        | 71.1                                   | 86.9                                    | 1.0                 | 114                                       | 4.5                 | 3.0                               |
| SA64A       | SA64CA  | 64                        | 71.1                                   | 78.6                                    | 1.0                 | 103                                       | 5.0                 | 3.0                               |
| SA70        | SA70C   | 70                        | 77.8                                   | 95.1                                    | 1.0                 | 125                                       | 4.1                 | 3.0                               |
| SA70A       | SA70CA  | 70                        | 77.8                                   | 86.0                                    | 1.0                 | 113                                       | 4.5                 | 3.0                               |
| SA75        | SA75C   | 75                        | 83.0                                   | 102                                     | 1.0                 | 134                                       | 3.8                 | 3.0                               |
| SA75A       | SA75CA  | 75                        | 83.0                                   | 92.1                                    | 1.0                 | 121                                       | 4.2                 | 3.0                               |
| SA78        | SA78C   | 78                        | 86.0                                   | 106                                     | 1.0                 | 139                                       | 3.7                 | 3.0                               |
| SA78A       | SA78CA  | 78                        | 86.0                                   | 95.8                                    | 1.0                 | 126                                       | 4.0                 | 3.0                               |
| SA85        | SA85C   | 85                        | 94.0                                   | 115                                     | 1.0                 | 151                                       | 3.4                 | 3.0                               |
| SA85A       | SA85CA  | 85                        | 94.0                                   | 104                                     | 1.0                 | 137                                       | 3.7                 | 3.0                               |
| SA90        | SA90C   | 90                        | 100                                    | 122                                     | 1.0                 | 160                                       | 3.2                 | 3.0                               |
| SA90A       | SA90CA  | 90                        | 100                                    | 111                                     | 1.0                 | 146                                       | 3.3                 | 3.0                               |
| SA100       | SA100C  | 100                       | 111                                    | 136                                     | 1.0                 | 179                                       | 2.8                 | 3.0                               |
| SA100A      | SA100CA | 100                       | 111                                    | 123                                     | 1.0                 | 162                                       | 3.1                 | 3.0                               |
| SA110       | SA110C  | 110                       | 122                                    | 149                                     | 1.0                 | 196                                       | 2.6                 | 3.0                               |
| SA110A      | SA110CA | 110                       | 122                                    | 135                                     | 1.0                 | 177                                       | 2.9                 | 3.0                               |
| SA120       | SA120C  | 120                       | 133                                    | 163                                     | 1.0                 | 214                                       | 2.4                 | 3.0                               |
| SA120A      | SA120CA | 120                       | 133                                    | 147                                     | 1.0                 | 193                                       | 2.6                 | 3.0                               |
| SA130       | SA130C  | 130                       | 144                                    | 176                                     | 1.0                 | 231                                       | 2.2                 | 3.0                               |
| SA130A      | SA130CA | 130                       | 144                                    | 159                                     | 1.0                 | 209                                       | 2.4                 | 3.0                               |
| SA150       | SA150C  | 150                       | 167                                    | 204                                     | 1.0                 | 268                                       | 1.9                 | 3.0                               |
| SA150A      | SA150CA | 150                       | 167                                    | 185                                     | 1.0                 | 243                                       | 2.1                 | 3.0                               |
| SA160       | SA160C  | 160                       | 178                                    | 218                                     | 1.0                 | 287                                       | 1.7                 | 3.0                               |
| SA160A      | SA160CA | 160                       | 178                                    | 197                                     | 1.0                 | 259                                       | 2.0                 | 3.0                               |
| SA170       | SA170C  | 170                       | 189                                    | 231                                     | 1.0                 | 304                                       | 1.7                 | 3.0                               |
| SA170A      | SA170CA | 170                       | 189                                    | 209                                     | 1.0                 | 275                                       | 1.9                 | 3.0                               |
| SA180       | SA180C  | 180                       | 200                                    | 244                                     | 1.0                 | 321                                       | 1.56                | 3.0                               |
| SA180A      | SA180CA | 180                       | 200                                    | 221                                     | 1.0                 | 290                                       | 1.73                | 3.0                               |
| SA190       | SA190C  | 190                       | 211                                    | 258                                     | 1.0                 | 339                                       | 1.48                | 3.0                               |
| SA190A      | SA190CA | 190                       | 211                                    | 233                                     | 1.0                 | 306                                       | 1.64                | 3.0                               |

For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double



## AXIAL LEAD TRANSIENT VOLTAGE SUPPRESSORS

### SA5.0 - SA440CA

| Type Number |         | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RMW</sub> |
|-------------|---------|---------------------------|--|---|---------------------|---|---------------------|-----------------------------------|
| (Uni)       | (Bi)    | V <sub>RMW</sub> (V)      | V <sub>BR MIN</sub> (V)                | V <sub>BR MAX</sub> (V)                 | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)               |
| SA200       | SA200C  | 200                       | 222                                    | 271                                     | 1.0                 | 356                                       | 1.41                | 3.0                               |
| SA200A      | SA200CA | 200                       | 222                                    | 245                                     | 1.0                 | 322                                       | 1.56                | 3.0                               |
| SA210       | SA210C  | 210                       | 233                                    | 285                                     | 1.0                 | 375                                       | 1.34                | 3.0                               |
| SA210A      | SA210CA | 210                       | 233                                    | 258                                     | 1.0                 | 339                                       | 1.48                | 3.0                               |
| SA220       | SA220C  | 220                       | 244                                    | 298                                     | 1.0                 | 392                                       | 1.29                | 3.0                               |
| SA220A      | SA220CA | 220                       | 244                                    | 270                                     | 1.0                 | 355                                       | 1.42                | 3.0                               |
| SA250       | SA250C  | 250                       | 278                                    | 340                                     | 1.0                 | 447                                       | 1.13                | 3.0                               |
| SA250A      | SA250CA | 250                       | 278                                    | 307                                     | 1.0                 | 403                                       | 1.25                | 3.0                               |
| SA300       | SA300C  | 300                       | 333                                    | 407                                     | 1.0                 | 535                                       | 0.94                | 3.0                               |
| SA300A      | SA300CA | 300                       | 333                                    | 368                                     | 1.0                 | 484                                       | 1.04                | 3.0                               |
| SA350       | SA350C  | 350                       | 389                                    | 475                                     | 1.0                 | 624                                       | 0.81                | 3.0                               |
| SA350A      | SA350CA | 350                       | 389                                    | 430                                     | 1.0                 | 565                                       | 0.89                | 3.0                               |
| SA400       | SA400C  | 400                       | 444                                    | 523                                     | 1.0                 | 687                                       | 0.74                | 3.0                               |
| SA400A      | SA400CA | 400                       | 444                                    | 491                                     | 1.0                 | 645                                       | 0.79                | 3.0                               |
| SA440       | SA440C  | 440                       | 489                                    | 598                                     | 1.0                 | 786                                       | 0.65                | 3.0                               |
| SA440A      | SA440CA | 440                       | 489                                    | 540                                     | 1.0                 | 710                                       | 0.71                | 3.0                               |

For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double