



## Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
ssdi@ssdi-power.com \* www.ssdi-power.com

### Designer's Data Sheet

#### FEATURES:

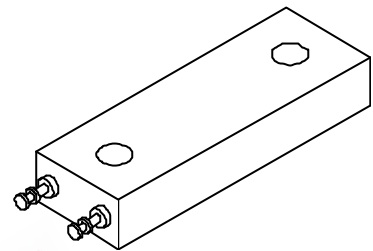
- 7.50-100 Volt Unidirectional
- Smaller than 704-15K35 and 704-15K36T types
- Hermetically Sealed
- Meets all environmental requirements of MIL-PRF-19500
- Custom Configurations Available
- TX and TXV Screening Available

#### APPLICATIONS:

- Protection of Voltage Sensitive Components
- Protection Against Power Interruption
- Lightning Protection

### STA15K7.5P thru STA15K100P

**15,000 WATTS  
PEAK PULSE POWER  
7.5 – 100 VOLTS  
UNIDIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSOR**



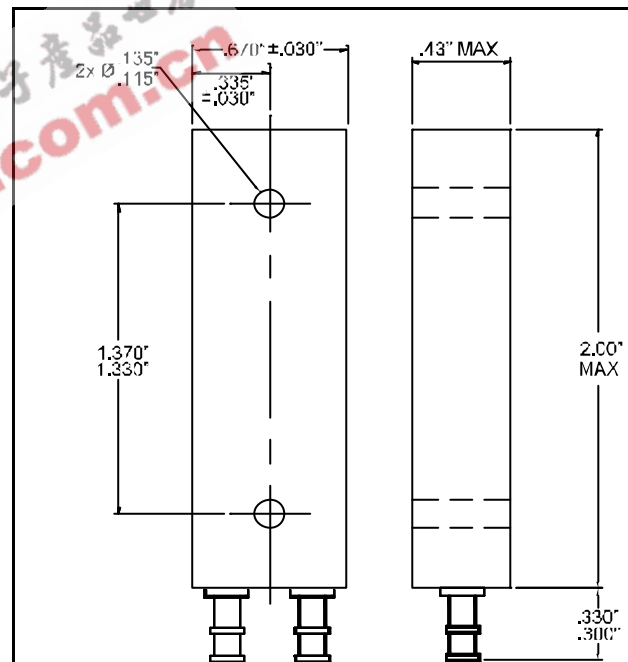
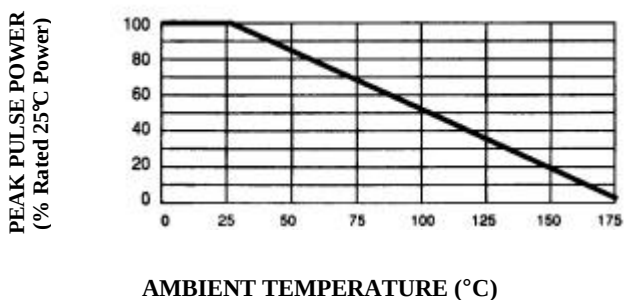
### Maximum Ratings

|                                                  |                 |        |       |
|--------------------------------------------------|-----------------|--------|-------|
| Stand Off Voltage                                | $V_{RWM}$       | 5.6-75 | Volts |
| Steady State Power Dissipation                   | $P_D$           | 100    | Watts |
| Peak Pulse Power @ 1.0 msec                      | $P_{PP}$        | 15,000 | Watts |
| Peak Pulse Power and Steady State Power Derating | SEE GRAPH       |        |       |
| Peak Pulse Power and Pulse Width                 | SEE GRAPH       |        |       |
| Operating and Storage Temperature                | -65°C to +175°C |        |       |

#### Note:

SSDI Transient Suppressors offer standard Breakdown Voltage Tolerances of  $\pm 10\%$  (A) and  $\pm 5\%$  (B). For other Voltage and Voltage Tolerances, contact SSDI's Marketing Department

### PEAK PULSE POWER VS. TEMPERATURE DERATING CURVE



Package shown is standard configuration. SSDI can custom design your module with terminals that meet your unique design criteria. Additionally, SSDI can package these devices with an irregular footprint or offset mounting positions. This data sheet is meant to serve as an example of SSDI's Transient Protection Module Capabilities. For custom configurations, please contact SSDI's Marketing Department.

**NOTE:** All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #: T00006C**

**DOC**



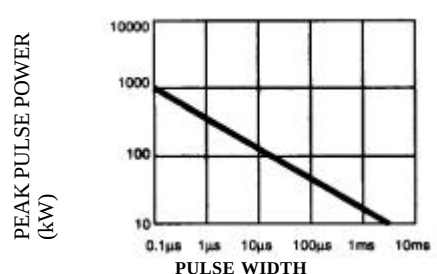
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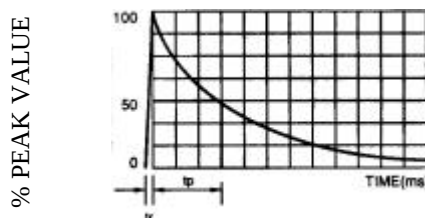
### ELECTRICAL CHARACTERISTICS

| Part Number<br>(note 5) | Break Down (note 1) |                    | Max Reverse Stand Off |                                  | Peak Pulse Clamping |                                 | Maximum Continuous Current<br>(note 4) | Dynamic Impedance<br>(note 2) | Max Temperature Coefficient |
|-------------------------|---------------------|--------------------|-----------------------|----------------------------------|---------------------|---------------------------------|----------------------------------------|-------------------------------|-----------------------------|
|                         | Nominal Voltage     | Test Current       | Voltage               | Reverse Leakage Current          | Voltage (Max)       | @ Current<br>Tp=1ms<br>(note 4) |                                        |                               |                             |
|                         | V <sub>BR</sub>     | @ I <sub>BRT</sub> | V <sub>RWM</sub>      | I <sub>R</sub> @V <sub>RWM</sub> | V <sub>C</sub>      | I <sub>PP</sub>                 |                                        |                               |                             |
|                         | Volts               | Amps               | Volts                 | mA                               | Volts               | Amps                            | Amps                                   | Ohms                          | %/°C                        |
| STA15K7.5P              | 7.5                 | 1.75               | 5.6                   | 15.0                             | 11.7                | 1280                            | 12.5                                   | 0.07                          | .03                         |
| STA15K8.2P              | 8.2                 | 1.50               | 6.2                   | 12.0                             | 12.5                | 1200                            | 11.5                                   | 0.08                          | .03                         |
| STA15K9.1P              | 9.1                 | 1.50               | 6.8                   | 0.40                             | 13.8                | 1090                            | 10.2                                   | 0.09                          | .03                         |
| STA15K10P               | 10                  | 1.25               | 7.5                   | 0.20                             | 15.0                | 1000                            | 9.5                                    | 0.10                          | .05                         |
| STA15K11P               | 11                  | 1.25               | 8.2                   | 0.15                             | 16.2                | 930                             | 8.6                                    | 0.11                          | .05                         |
| STA15K12P               | 12                  | 1.00               | 9.1                   | 0.10                             | 17.3                | 870                             | 7.7                                    | 0.11                          | .05                         |
| STA15K13P               | 13                  | 1.00               | 10                    | 0.04                             | 19.0                | 790                             | 7.0                                    | 0.12                          | .05                         |
| STA15K15P               | 15                  | 0.75               | 11                    | 0.02                             | 22.0                | 680                             | 6.0                                    | 0.12                          | .05                         |
| STA15K16P               | 16                  | 0.75               | 12                    | 0.02                             | 23.5                | 640                             | 5.5                                    | 0.13                          | .06                         |
| STA15K18P               | 18                  | 0.65               | 13                    | 0.02                             | 26.5                | 570                             | 5.0                                    | 0.13                          | .06                         |
| STA15K20P               | 20                  | 0.65               | 15                    | 0.02                             | 29.0                | 520                             | 4.4                                    | 0.15                          | .06                         |
| STA15K22P               | 22                  | 0.50               | 16                    | 0.02                             | 31.9                | 470                             | 3.9                                    | 0.16                          | .06                         |
| STA15K24P               | 24                  | 0.50               | 18                    | 0.02                             | 34.7                | 430                             | 3.6                                    | 0.18                          | .06                         |
| STA15K27P               | 27                  | 0.50               | 20                    | 0.02                             | 38.5                | 390                             | 3.1                                    | 0.25                          | .06                         |
| STA15K30P               | 30                  | 0.40               | 22                    | 0.02                             | 42.9                | 350                             | 2.8                                    | 0.40                          | .06                         |
| STA15K33P               | 33                  | 0.40               | 24                    | 0.02                             | 46.9                | 320                             | 2.6                                    | 0.50                          | .06                         |
| STA15K36P               | 36                  | 0.30               | 27                    | 0.02                             | 50.0                | 300                             | 2.4                                    | 0.60                          | .06                         |
| STA15K39P               | 39                  | 0.30               | 30                    | 0.02                             | 55.6                | 270                             | 2.1                                    | 0.70                          | .06                         |
| STA15K43P               | 43                  | 0.30               | 33                    | 0.02                             | 60.0                | 250                             | 1.8                                    | 1.0                           | .06                         |
| STA15K47P               | 47                  | 0.25               | 36                    | 0.02                             | 65.2                | 230                             | 1.75                                   | 1.2                           | .07                         |
| STA15K51P               | 51                  | 0.25               | 39                    | 0.02                             | 71.4                | 210                             | 1.7                                    | 1.4                           | .07                         |
| STA15K56P               | 56                  | 0.20               | 43                    | 0.02                             | 78.9                | 190                             | 1.6                                    | 1.8                           | .07                         |
| STA15K62P               | 62                  | 0.20               | 47                    | 0.02                             | 88.2                | 170                             | 1.5                                    | 2.0                           | .07                         |
| STA15K68P               | 68                  | 0.20               | 51                    | 0.02                             | 93.7                | 160                             | 1.3                                    | 2.2                           | .08                         |
| STA15K75P               | 75                  | 0.20               | 56                    | 0.02                             | 107.1               | 140                             | 1.2                                    | 2.5                           | .08                         |
| STA15K82P               | 82                  | 0.15               | 62                    | 0.02                             | 115.4               | 130                             | 1.1                                    | 3.0                           | .08                         |
| STA15K91P               | 91                  | 0.15               | 68                    | 0.02                             | 125.0               | 120                             | 1.0                                    | 4.0                           | .08                         |
| STA15K100P              | 100                 | 0.15               | 75                    | 0.02                             | 136.4               | 110                             | .9                                     | 4.5                           | .09                         |

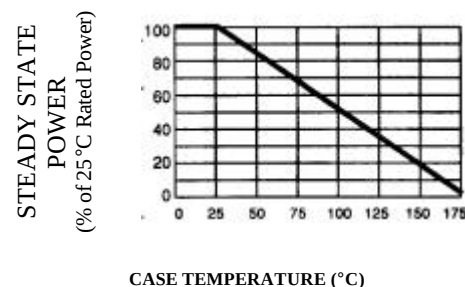
#### PEAK PULSE POWER VS. PULSE WIDTH



#### CURRENT PULSE WAVEFORM



#### STEADY STATE POWER DERATING



For optional high reliability screening or higher zener voltages, consult SSDI MARKETING Department.

#### Notes:

1. All voltages are measured with automated test set using 35 msec test time. Longer or shorter test times will have a corresponding effect on the measured value due to heating effects.
2. Dynamic impedance is derived from the AC voltage divided by the AC current with RMS value of 10% of DC test current superimposed on the test current.
3. Ratings based on 25° C case temperature.
4. Pulse width (tp) is defined as the time from rated peak pulse current IPP to the point where peak pulse current decayed to 50% of rated IPP. (10ms X 1000ms waveform as defined by R.E.A.)
5. Part Number- For 5% Voltage Tolerance, specify "B" in place of "A"