

# 15KP SERIES

# TRANSIENT VOLTAGE SUPPRESSOR

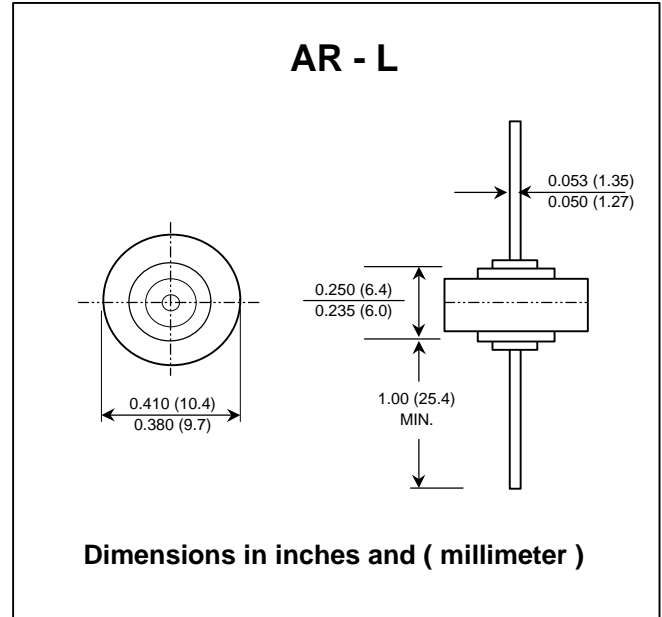
**V<sub>R</sub> : 12 - 240 Volts**  
**P<sub>PK</sub> : 15,000 Watts**

### FEATURES :

- \* Excellent Clamping Capability
- \* Fast Response Time
- \* Low Zener Impedance
- \* Low Leakage Current

### MECHANICAL DATA

- \* Case : Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- \* Polarity : Cathode polarity band
- \* Mounting position : Any
- \* Weight : 2.73 grams

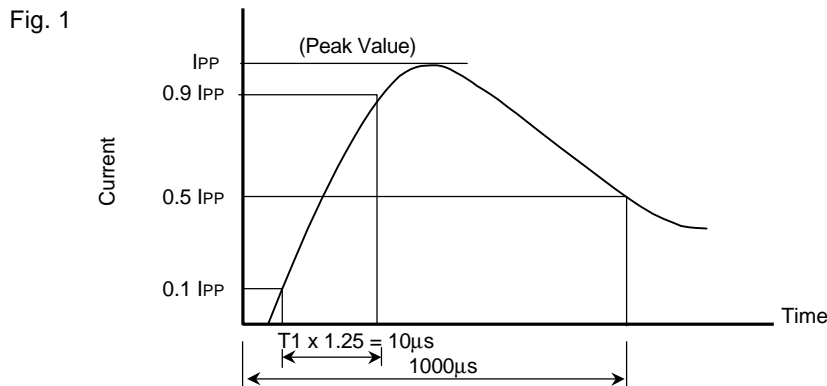


### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

| Rating   | Symbol                            | Value         | Unit  |
|--|-----------------------------------|---------------|-------|
| Peak Pulse Power Dissipation (10X1000µs, see Fig.1 )                                   | P <sub>PK</sub>                   | 15,000        | Watts |
| Steady State Power Dissipation   | P <sub>D</sub>                    | 7.0           | Watts |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Uni-directional devices only) | I <sub>FSM</sub>                  | 200           | Amps. |
| Operating and Storage Temperature Range  | T <sub>J</sub> , T <sub>STG</sub> | - 55 to + 150 | °C    |

This pulse is a standard test waveform used for protection devices.





Certificate Number: Q10561



Certificate Number: E17276

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Part Number<br>(Uni-directional) | Part Number<br>(Bi-directional) | Reverse Stand Off Voltage | Breakdown Voltage @ I <sub>T</sub> |                | Maximum Reverse Leakage @ V <sub>R</sub> | Maximum Clamping Voltage @ I <sub>PP</sub> | Maximum Peak Pulse Current | Max. Voltage Temperature Variation of V <sub>BR</sub> (mV/°C) |
|----------------------------------|---------------------------------|---------------------------|------------------------------------|----------------|--|--|----------------------------|---|
|                                  |                                 | V <sub>R</sub>            | V <sub>BR</sub> (V)                | I <sub>T</sub> | I <sub>R</sub>                           | V <sub>C</sub>                             | I <sub>PP</sub>            |   |
|                                  |                                 | (V)                       | Min.                               | (mA)           | (μA)                                     | (V)  | (A)                        |   |
| 15KP12                           | 15KP12C                         | 12                        | 13.3                               | 50.0           | 10,000                                   | 22.0                                       | 658                        | 12  |
| 15KP12A                          | 15KP12CA                        | 12                        | 13.3                               | 50.0           | 10,000                                   | 19.9                                       | 725                        | 12  |
| 15KP13                           | 15KP13C                         | 13                        | 14.4                               | 50.0           | 10,000                                   | 23.8                                       | 607                        | 13  |
| 15KP13A                          | 15KP13CA                        | 13                        | 14.4                               | 50.0           | 10,000                                   | 21.5                                       | 669                        | 13  |
| 15KP14                           | 15KP14C                         | 14                        | 15.6                               | 50.0           | 8,000                                    | 25.8                                       | 564                        | 14  |
| 15KP14A                          | 15KP14CA                        | 14                        | 15.6                               | 50.0           | 8,000                                    | 23.2                                       | 622                        | 14  |
| 15KP15                           | 15KP15C                         | 15                        | 16.7                               | 50.0           | 8,000                                    | 26.9                                       | 526                        | 16  |
| 15KP15A                          | 15KP15CA                        | 15                        | 16.7                               | 50.0           | 8,000                                    | 24.4                                       | 580                        | 16  |
| 15KP16                           | 15KP16C                         | 16                        | 17.8                               | 50.0           | 8,000                                    | 28.8                                       | 493                        | 19  |
| 15KP16A                          | 15KP16CA                        | 16                        | 17.8                               | 50.0           | 8,000                                    | 26.0                                       | 544                        | 17  |
| 15KP17                           | 15KP17C                         | 17                        | 18.9                               | 50.0           | 5,000                                    | 32.2                                       | 464                        | 19  |
| 15KP17A                          | 15KP17CA                        | 17                        | 18.9                               | 50.0           | 5,000                                    | 29.3                                       | 512                        | 17  |
| 15KP18                           | 15KP18C                         | 18                        | 20.0                               | 50.0           | 5,000                                    | 34.2                                       | 439                        | 20  |
| 15KP18A                          | 15KP18CA                        | 18                        | 20.0                               | 50.0           | 5,000                                    | 30.9                                       | 485                        | 18  |
| 15KP20                           | 15KP20C                         | 20                        | 22.2                               | 20.0           | 1,500                                    | 37.9                                       | 396                        | 24  |
| 15KP20A                          | 15KP20CA                        | 20                        | 22.2                               | 20.0           | 1,500                                    | 34.3                                       | 437                        | 21  |
| 15KP22                           | 15KP22C                         | 22                        | 24.4                               | 10.0           | 500                                      | 41.1                                       | 365                        | 27  |
| 15KP22A                          | 15KP22CA                        | 22                        | 24.4                               | 10.0           | 500                                      | 37.1                                       | 404                        | 24  |
| 15KP24                           | 15KP24C                         | 24                        | 26.7                               | 5.0            | 150                                      | 45.0                                       | 333                        | 30  |
| 15KP24A                          | 15KP24CA                        | 24                        | 26.7                               | 5.0            | 150                                      | 40.7                                       | 369                        | 27  |
| 15KP26                           | 15KP26C                         | 26                        | 28.9                               | 5.0            | 50                                       | 48.7                                       | 308                        | 32  |
| 15KP26A                          | 15KP26CA                        | 26                        | 28.9                               | 5.0            | 50                                       | 44.0                                       | 341                        | 29  |
| 15KP28                           | 15KP28C                         | 28                        | 31.1                               | 5.0            | 25                                       | 52.4                                       | 286                        | 35  |
| 15KP28A                          | 15KP28CA                        | 28                        | 31.1                               | 5.0            | 25                                       | 47.5                                       | 316                        | 31  |
| 15KP30                           | 15KP30C                         | 30                        | 33.3                               | 5.0            | 15                                       | 56.2                                       | 267                        | 37  |
| 15KP30A                          | 15KP30CA                        | 30                        | 33.3                               | 5.0            | 15                                       | 50.7                                       | 296                        | 33  |
| 15KP33*                          | 15KP33C                         | 33                        | 36.7                               | 5.0            | 10                                       | 60.6                                       | 248                        | 42  |
| 15KP33A*                         | 15KP33CA                        | 33                        | 36.7                               | 5.0            | 10                                       | 54.8                                       | 274                        | 38  |
| 15KP36*                          | 15KP36C*                        | 36                        | 40.0                               | 5.0            | 10                                       | 66.0                                       | 227                        | 46  |
| 15KP36A*                         | 15KP36CA*                       | 36                        | 40.0                               | 5.0            | 10                                       | 59.7                                       | 251                        | 41  |
| 15KP40*                          | 15KP40C                         | 40                        | 44.4                               | 5.0            | 10                                       | 72.8                                       | 206                        | 51  |
| 15KP40A*                         | 15KP40CA                        | 40                        | 44.4                               | 5.0            | 10                                       | 65.8                                       | 228                        | 46  |
| 15KP43                           | 15KP43C                         | 43                        | 47.8                               | 5.0            | 10                                       | 77.1                                       | 195                        | 55  |
| 15KP43A                          | 15KP43CA                        | 43                        | 47.8                               | 5.0            | 10                                       | 69.7                                       | 215                        | 50  |
| 15KP45                           | 15KP45C                         | 45                        | 50.0                               | 5.0            | 10                                       | 80.7                                       | 186                        | 57  |
| 15KP45A                          | 15KP45CA                        | 45                        | 50.0                               | 5.0            | 10                                       | 73.0                                       | 205                        | 52  |
| 15KP48*                          | 15KP48C*                        | 48                        | 53.3                               | 5.0            | 10                                       | 85.9                                       | 175                        | 62  |
| 15KP48A*                         | 15KP48CA*                       | 48                        | 53.3                               | 5.0            | 10                                       | 77.7                                       | 193                        | 56  |
| 15KP51                           | 15KP51C                         | 51                        | 56.7                               | 5.0            | 10                                       | 91.5                                       | 164                        | 66  |
| 15KP51A                          | 15KP51CA                        | 51                        | 56.7                               | 5.0            | 10                                       | 82.5                                       | 181                        | 60  |
| 15KP54                           | 15KP54C                         | 54                        | 60.0                               | 5.0            | 10                                       | 96.8                                       | 155                        | 70  |
| 15KP54A                          | 15KP54CA                        | 54                        | 60.0                               | 5.0            | 10                                       | 87.5                                       | 171                        | 63  |
| 15KP58                           | 15KP58C                         | 58                        | 64.4                               | 5.0            | 10                                       | 104  | 144                        | 76  |
| 15KP58A                          | 15KP58CA                        | 58                        | 64.4                               | 5.0            | 10                                       | 94   | 160                        | 68  |
| 15KP60                           | 15KP60C                         | 60                        | 66.7                               | 5.0            | 10                                       | 107  | 140                        | 78  |
| 15KP60A                          | 15KP60CA                        | 60                        | 66.7                               | 5.0            | 10                                       | 97.3                                       | 154                        | 70  |
| 15KP64                           | 15KP64C                         | 64                        | 71.1                               | 5.0            | 10                                       | 115  | 130                        | 84  |
| 15KP64A                          | 15KP64CA                        | 64                        | 71.1                               | 5.0            | 10                                       | 104  | 144                        | 76  |
| 15KP70                           | 15KP70C*                        | 70                        | 77.8                               | 5.0            | 10                                       | 126  | 119                        | 92  |
| 15KP70A                          | 15KP70CA*                       | 70                        | 77.8                               | 5.0            | 10                                       | 114  | 132                        | 83  |

# ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Part Number<br>(Uni-directional) | Part Number<br>(Bi-directional) | Reverse Stand Off Voltage | Breakdown Voltage @ I <sub>T</sub> |                | Maximum Reverse Leakage @ V <sub>R</sub> | Maximum Clamping Voltage @ I <sub>PP</sub> | Maximum Peak Pulse Current | Max. Voltage Temperature Variation of V <sub>BR</sub> (mV/°C) |
|----------------------------------|---------------------------------|---------------------------|------------------------------------|----------------|--|--|----------------------------|---|
|                                  |                                 | V <sub>R</sub>            | V <sub>BR</sub> (V)                | I <sub>T</sub> | I <sub>R</sub>                           | V <sub>C</sub>                             | I <sub>PP</sub>            |   |
|                                  |                                 | (V)                       | Min.                               | (mA)           | (μA)                                     | (V)  | (A)                        |   |
| 15KP75                           | 15KP75C                         | 75                        | 83.3                               | 5.0            | 10                                       | 135  | 111                        | 100   |
| 15KP75A                          | 15KP75CA                        | 75                        | 83.3                               | 5.0            | 10                                       | 122  | 123                        | 89  |
| 15KP78                           | 15KP78C                         | 78                        | 86.7                               | 5.0            | 10                                       | 140  | 107                        | 104   |
| 15KP78A                          | 15KP78CA                        | 78                        | 86.7                               | 5.0            | 10                                       | 126  | 119                        | 93  |
| 15KP85                           | 15KP85C                         | 85                        | 94.4                               | 5.0            | 10                                       | 152  | 99                         | 113   |
| 15KP85A                          | 15KP85CA                        | 85                        | 94.4                               | 5.0            | 10                                       | 137  | 109                        | 102   |
| 15KP90                           | 15KP90C                         | 90                        | 100                                | 5.0            | 10                                       | 160  | 94                         | 120   |
| 15KP90A                          | 15KP90CA                        | 90                        | 100                                | 5.0            | 10                                       | 146  | 103                        | 110   |
| 15KP100                          | 15KP100C                        | 100                       | 111                                | 5.0            | 10                                       | 179  | 84                         | 134   |
| 15KP100A                         | 15KP100CA                       | 100                       | 111                                | 5.0            | 10                                       | 162  | 93                         | 123   |
| 15KP110                          | 15KP110C                        | 110                       | 122                                | 5.0            | 10                                       | 196  | 77                         | 147   |
| 15KP110A                         | 15KP110CA                       | 110                       | 122                                | 5.0            | 10                                       | 178  | 84                         | 133   |
| 15KP120                          | 15KP120C                        | 120                       | 133                                | 5.0            | 10                                       | 214  | 70                         | 161   |
| 15KP120A                         | 15KP120CA                       | 120                       | 133                                | 5.0            | 10                                       | 193  | 78                         | 146   |
| 15KP130                          | 15KP130C                        | 130                       | 144                                | 5.0            | 10                                       | 231  | 65                         | 174   |
| 15KP130A                         | 15KP130CA                       | 130                       | 144                                | 5.0            | 10                                       | 209  | 72                         | 158   |
| 15KP150                          | 15KP150C                        | 150                       | 167                                | 5.0            | 10                                       | 268  | 56                         | 202   |
| 15KP150A                         | 15KP150CA                       | 150                       | 167                                | 5.0            | 10                                       | 243  | 62                         | 184   |
| 15KP160                          | 15KP160C                        | 160                       | 178                                | 5.0            | 10                                       | 287  | 52                         | 216   |
| 15KP160A                         | 15KP160CA                       | 160                       | 178                                | 5.0            | 10                                       | 259  | 58                         | 196   |
| 15KP170                          | 15KP170C                        | 170                       | 189                                | 5.0            | 10                                       | 304  | 49                         | 229   |
| 15KP170A                         | 15KP170CA                       | 170                       | 189                                | 5.0            | 10                                       | 275  | 55                         | 208   |
| 15KP180                          | 15KP180C                        | 180                       | 200                                | 5.0            | 10                                       | 321  | 47                         | 242   |
| 15KP180A                         | 15KP180CA                       | 180                       | 200                                | 5.0            | 10                                       | 287  | 52                         | 220   |
| 15KP200                          | 15KP200C                        | 200                       | 222                                | 5.0            | 10                                       | 356  | 42                         | 296   |
| 15KP200A                         | 15KP200CA                       | 200                       | 222                                | 5.0            | 10                                       | 325  | 46                         | 274   |
| 15KP220                          | 15KP220C                        | 220                       | 245                                | 5.0            | 10                                       | 393  | 38                         | 297   |
| 15KP220A                         | 15KP220CA                       | 220                       | 245                                | 5.0            | 10                                       | 347  | 43                         | 273   |
| 15KP240                          | 15KP240C                        | 240                       | 267                                | 5.0            | 10                                       | 428  | 35                         | 324   |
| 15KP240A                         | 15KP240CA                       | 240                       | 267                                | 5.0            | 10                                       | 387  | 39                         | 300   |

**Note:**

Suffix " A " denotes 5% tolerance device , no suffix denotes a 10% tolerance device.

\* Preferred Voltages.

Fig. 2 - Peak Pulse Power vs. Pulse Time

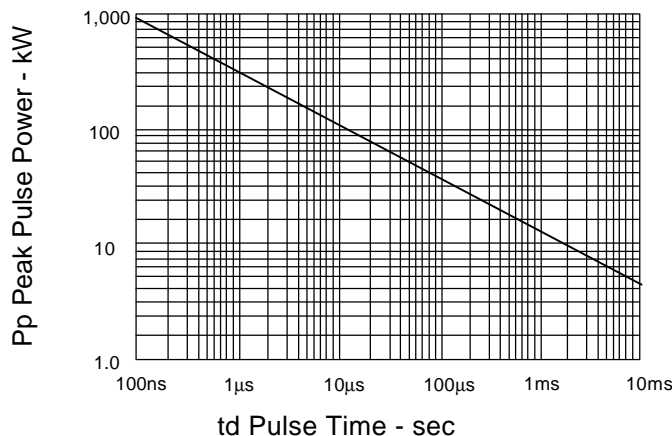


Fig. 3 - Typical Capacitance vs. Breakdown Voltage

