*New Jersey Semi-Conductor Products, Inc.*

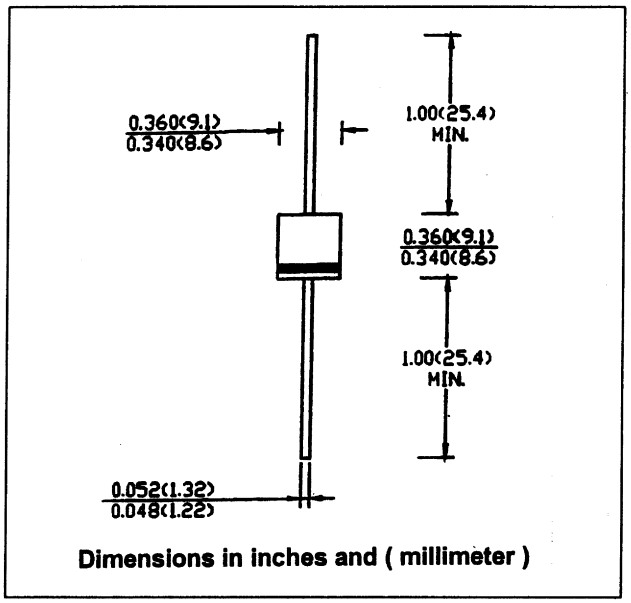
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# 15KP SERIES

# TRANSIENT VOLTAGE SUPPRESSOR

**$V_R$ : 12 - 240 Volts**
**$P_{PK}$ : 15,000 Watts**




**Dimensions in inches and ( millimeter )**

## 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

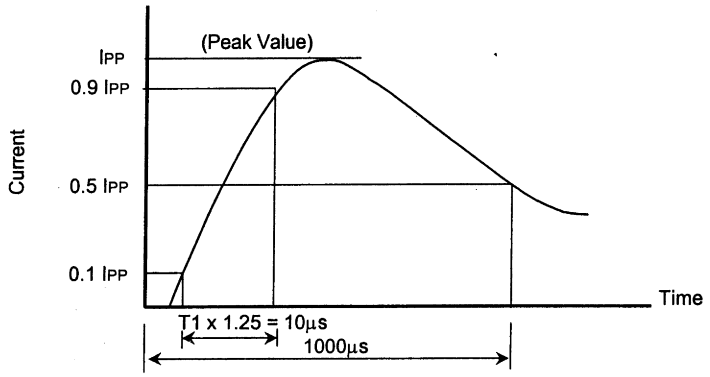
## MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power Dissipation (10X1000μs, see Fig.1 ) | $P_{PK}$ | 15,000 | Watts |
| Steady State Power Dissipation | $P_D$ | 7.0 | Watts |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Uni-directional devices only) | $I_{FSM}$ | 200 | Amps. |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | - 55 to + 150 | °C |

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

Fig. 1



# ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Part Number (Uni-directional) | Part Number (Bi-directional) | Reverse Stand Off Voltage | Breakdown Voltage @ $I_T$ | | Maximum Reverse Leakage @ $V_R$ | Maximum Clamping Voltage @ $I_{PP}$ | Maximum Peak Pulse Current | Max. Voltage Temperature Variation of $V_{BR}$ |
|---|---|---|---|---|---|---|---|---|
| | | $V_R$ | $V_{BR}$ (V) | $I_T$ | $I_R$ | $V_C$ | $I_{PP}$ | |
| | | (V) | Min. | (mA) | (μA) | (V) | (A) | (mV/°C) |
| **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 (Uni-directional) | Part Number (Bi-directional) | Reverse Stand Off Voltage | Breakdown Voltage @ $I_T$ | | Maximum Reverse Leakage @ $V_R$ | Maximum Clamping Voltage @ $I_{PP}$ | Maximum Peak Pulse Current | Max. Voltage Temperature Variation of $V_{BR}$ |
|---|---|---|---|---|---|---|---|---|
| | | $V_R$ | $V_{BR}$ (V) | $I_T$ | $I_R$ | $V_C$ | $I_{PP}$ | |
| | | (V) | Min. | (mA) | (μA) | (V) | (A) | (mV/°C) |
| **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.

* Prefered Voltages.

Fig. 2 - Peak Pulse Power vs. Pulse Time

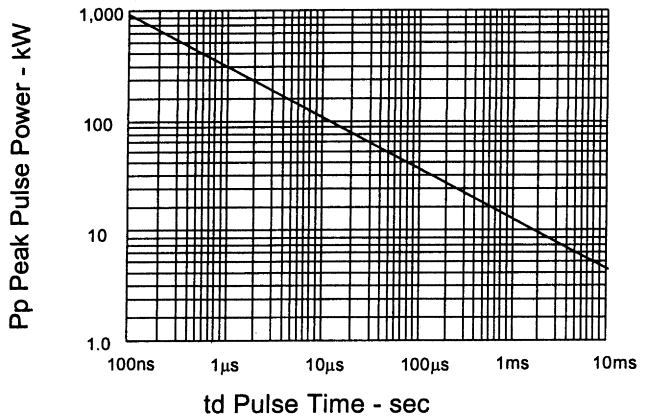



Fig. 3 - Typical Capacitance vs. Breakdown Voltage

