



## 5,000 Watt Transient Voltage Suppressor (TVS) Protection Device



### DESCRIPTION

This RoHS compliant transient voltage suppressor series 5KP5.0e3 - 5KP250CAe3 provides a range of standoff voltage options from 5.0 to 250V in both unidirectional and bidirectional options. Clamping action is almost instantaneous. As a result, they provide effective protection from ESD and EFT per IEC61000-4-2 and IEC61000-4-4, as well as transients caused by inductive switching and RFI. They also protect from secondary lightning effects per 61000-4-5 at the class levels specified below.

**Important:** For the latest information, visit our website <http://www.microsemi.com>.

### FEATURES

- Available in both unidirectional and bidirectional configurations
- Moisture classification is level 1 with no dry pack required per IPC/JEDEC J-STD-020B
- RoHS compliant

### APPLICATIONS / BENEFITS

- Selections for 5.0 to 250 volts stand-off voltage ( $V_{WM}$ )
- Economical TVS series for thru-hole mounting
- Pico- to nano-second response time
- Protection from transients caused by inductive switching and RFI
- Compliant to IEC 61000-4-2 and IEC 61000-4-4 for ESD and EFT protection respectively
- Secondary lightning protection per IEC61000-4-5 with 42 ohms source impedance:
  - Class 1, 2, 3, 4: 5KP5.0 to 5KP110CA
  - Class 5: 5KP5.0 to 5KP110CA (short distance)
  - Class 5: 5KP5.0 to 5KP36CA (long distance)
- Secondary lightning protection per IEC61000-4-5 with 12 ohms source impedance:
  - Class 1 & 2: 5KP5.0 to 5KP110CA
  - Class 3: 5KP5.0 to 5KP78CA
  - Class 4: 5KP5.0 to 5KP40CA
- Secondary lightning protection per IEC61000-4-5 with 2 ohms source impedance:
  - Class 2: 5KP5.0 to 5KP70CA
  - Class 3: 5KP5.0 to 5KP36CA
  - Class 4: 5KP5.0 to 5KP18CA



**P600 Package**

Also available in:

**Case 5A (DO-204AR)  
package**

(hirel plastic axial-leaded)

 [M5KP5.0A – M5KP110CA](#)

**DO-13 package**

(metal axial-leaded)

 [LC6.5A – LC170A](#)

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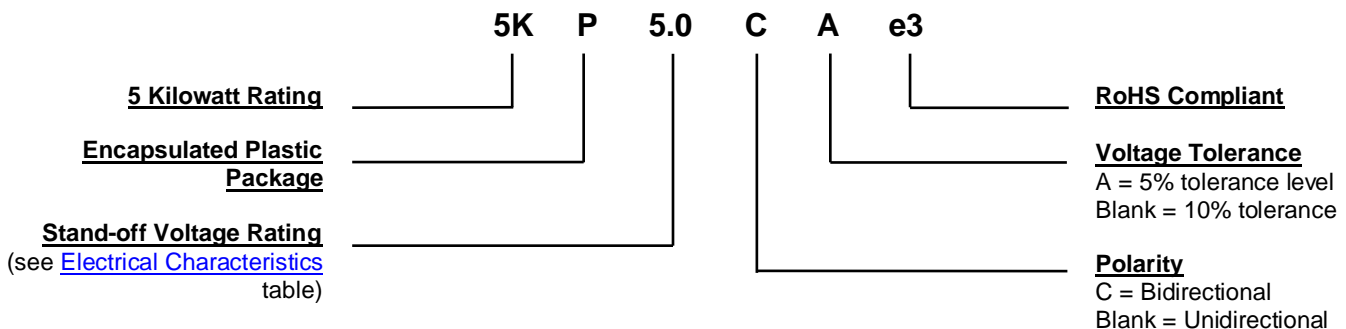
**MAXIMUM RATINGS @ 25 °C unless otherwise noted**

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T <sub>J</sub> and T <sub>STG</sub>	-55 to +175	°C
Thermal Resistance, Junction to Lead @ 0.375 inch (9.5 mm) lead length from body	R <sub>θJL</sub>	8.0	°C/W
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	40	°C/W
Peak Pulse Power Dissipation 10/1000 μs	P <sub>PP</sub>	5000	W
Rated Average Power Dissipation @ T <sub>L</sub> = 75 °C 0.375 inch (9.5 mm) from body <sup>(1)</sup>	P <sub>M(AV)</sub>	8.0	W
Surge Peak Forward Current <sup>(2)</sup>	I <sub>FSM</sub>	500	A
Solder Temperature @ 10 s		260	°C

- Notes:**
- When mounted as shown in [Figure 5](#)
  - Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

**MECHANICAL and PACKAGING**

- CASE: Void-free transfer molded thermosetting epoxy body meeting UL94V-0
- TERMINALS: RoHS compliant annealed matte-tin plating. Solderable per MIL-STD-750, method 2026.
- MARKING: Manufacturer, date code, part number, polarity and tolerance suffixes
- POLARITY: For unidirectional types the color band denotes the cathode, which is positive with respect to the anode under normal TVS operation.
- TAPE & REEL option: Standard per EIA-296 (add "TR" suffix to part number). Consult factory for quantities.
- WEIGHT: Approximately 2.1 grams
- See [Package Dimensions](#) on last page.

**PART NOMENCLATURE**


<b>SYMBOLS &amp; DEFINITIONS</b>	
<b>Symbol</b>	<b>Definition</b>
$\alpha_{V(BR)}$	Temperature Coefficient of Breakdown Voltage: The change in breakdown voltage divided by the change in temperature that caused it expressed in %/°C or mV/°C.
$I_D$	Standby Current: The current through the device at rated stand-off voltage.
$I_{PP}$	Peak Impulse Current: The maximum rated random recurring peak impulse current or nonrepetitive peak impulse current that may be applied to a device. A random recurring or nonrepetitive transient current is usually due to an external cause, and it is assumed that its effect will have completely disappeared before the next transient arrives.
$P_{PP}$	Peak Pulse Power. The rated random recurring peak impulse power or rated nonrepetitive peak impulse power. The impulse power is the maximum-rated value of the product of $I_{PP}$ and $V_C$ .
$V_{(BR)}$	Breakdown Voltage: The voltage across the device at a specified current $I_{(BR)}$ in the breakdown region.
$V_C$	Clamping Voltage: The voltage across the device in a region of low differential resistance during the application of an impulse current ( $I_{PP}$ ) for a specified waveform.
$V_{WM}$	Working Standoff Voltage: The maximum-rated value of dc or repetitive peak positive cathode-to-anode voltage that may be continuously applied over the standard operating temperature.

**ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise stated**

DEVICE NUMBER	BREAKDOWN VOLTAGE <sup>(1)</sup> V <sub>(BR)</sub> @ I <sub>T</sub>		TEST CURRENT I <sub>T</sub>	WORKING STAND-OFF VOLTAGE V <sub>WM</sub>	MAXIMUM STANDBY CURRENT <sup>(3)</sup> I <sub>D</sub> @ V <sub>WM</sub>	MAXIMUM PEAK PULSE CURRENT <sup>(2)</sup> I <sub>PP</sub>	MAXIMUM CLAMPING VOLTAGE V <sub>C</sub> @ I <sub>PP</sub>	MAXIMUM TEMPERATURE COEFFICIENT OF V <sub>(BR)</sub> α <sub>V(BR)</sub>
	Min	Max						
	Volts	mA						
5KP5.0e3 / 5KP5.0Ce3	6.40	7.30	50	5.0	5000	521	9.6	0.057
<b>5KP5.0Ae3 / 5KP5.0CAe3</b>	<b>6.40</b>	<b>7.00</b>	<b>50</b>	<b>5.0</b>	<b>5000</b>	<b>543</b>	<b>9.2</b>	<b>0.057</b>
5KP6.0e3 / 5KP6.0Ce3	6.67	8.15	50	6.0	5000	439	11.4	0.061
<b>5KP6.0Ae3 / 5KP6.0CAe3</b>	<b>6.67</b>	<b>7.37</b>	<b>50</b>	<b>6.0</b>	<b>5000</b>	<b>485</b>	<b>10.3</b>	<b>0.061</b>
5KP6.5e3 / 5KP6.5Ce3	7.22	8.82	50	6.5	2000	407	12.3	0.065
<b>5KP6.5Ae3 / 5KP6.5CAe3</b>	<b>7.22</b>	<b>7.98</b>	<b>50</b>	<b>6.5</b>	<b>2000</b>	<b>446</b>	<b>11.2</b>	<b>0.065</b>
5KP7.0e3 / 5KP7.0Ce3	7.78	9.51	50	7.0	1000	376	13.3	0.068
<b>5KP7.0Ae3 / 5KP7.0CAe3</b>	<b>7.78</b>	<b>8.60</b>	<b>50</b>	<b>7.0</b>	<b>1000</b>	<b>417</b>	<b>12.0</b>	<b>0.068</b>
5KP7.5e3 / 5KP7.5Ce3	8.33	10.2	5	7.5	250	350	14.3	0.073
<b>5KP7.5Ae3 / 5KP7.5CAe3</b>	<b>8.33</b>	<b>9.21</b>	<b>5</b>	<b>7.5</b>	<b>250</b>	<b>388</b>	<b>12.9</b>	<b>0.073</b>
5KP8.0e3 / 5KP8.0Ce3	8.89	10.9	5	8.0	150	333	15.0	0.075
<b>5KP8.0Ae3 / 5KP8.0CAe3</b>	<b>8.89</b>	<b>9.83</b>	<b>5</b>	<b>8.0</b>	<b>150</b>	<b>368</b>	<b>13.6</b>	<b>0.075</b>
5KP8.5e3 / 5KP8.5Ce3	9.44	11.5	5	8.5	50	314	15.9	0.078
<b>5KP8.5Ae3 / 5KP8.5CAe3</b>	<b>9.44</b>	<b>10.4</b>	<b>5</b>	<b>8.5</b>	<b>50</b>	<b>347</b>	<b>14.4</b>	<b>0.078</b>
5KP9.0e3 / 5KP9.0Ce3	10.0	12.2	5	9.0	20	296	16.9	0.081
<b>5KP9.0Ae3 / 5KP9.0CAe3</b>	<b>10.0</b>	<b>11.1</b>	<b>5</b>	<b>9.0</b>	<b>20</b>	<b>325</b>	<b>15.4</b>	<b>0.081</b>
5KP10e3 / 5KP10Ce3	11.1	13.6	5	10	15	266	18.8	0.084
<b>5KP10Ae3 / 5KP10CAe3</b>	<b>11.1</b>	<b>12.3</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>294</b>	<b>17.0</b>	<b>0.084</b>
5KP11e3 / 5KP11Ce3	12.2	14.9	5	11	10	249	20.1	0.086
<b>5KP11Ae3 / 5KP11CAe3</b>	<b>12.2</b>	<b>13.5</b>	<b>5</b>	<b>11</b>	<b>10</b>	<b>275</b>	<b>18.2</b>	<b>0.086</b>
5KP12e3 / 5KP12Ce3	13.3	16.3	5	12	5	227	22.0	0.088
<b>5KP12Ae3 / 5KP12CAe3</b>	<b>13.3</b>	<b>14.7</b>	<b>5</b>	<b>12</b>	<b>5</b>	<b>251</b>	<b>19.9</b>	<b>0.088</b>
5KP13e3 / 5KP13Ce3	14.4	17.6	5	13	2	210	23.8	0.090
<b>5KP13Ae3 / 5KP13CAe3</b>	<b>14.4</b>	<b>15.9</b>	<b>5</b>	<b>13</b>	<b>2</b>	<b>233</b>	<b>21.5</b>	<b>0.090</b>
5KP14e3 / 5KP14Ce3	15.6	19.1	5	14	2	194	25.8	0.092
<b>5KP14Ae3 / 5KP14CAe3</b>	<b>15.6</b>	<b>17.2</b>	<b>5</b>	<b>14</b>	<b>2</b>	<b>216</b>	<b>23.2</b>	<b>0.092</b>
5KP15e3 / 5KP15Ce3	16.7	20.4	5	15	2	186	26.9	0.094
<b>5KP15Ae3 / 5KP15CAe3</b>	<b>16.7</b>	<b>18.5</b>	<b>5</b>	<b>15</b>	<b>2</b>	<b>205</b>	<b>24.4</b>	<b>0.094</b>
5KP16e3 / 5KP16Ce3	17.8	21.8	5	16	2	174	28.8	0.096
<b>5KP16Ae3 / 5KP16CAe3</b>	<b>17.8</b>	<b>19.7</b>	<b>5</b>	<b>16</b>	<b>2</b>	<b>192</b>	<b>26.0</b>	<b>0.096</b>
5KP17e3 / 5KP17Ce3	18.9	23.1	5	17	2	164	30.5	0.097
<b>5KP17Ae3 / 5KP17CAe3</b>	<b>18.9</b>	<b>20.9</b>	<b>5</b>	<b>17</b>	<b>2</b>	<b>181</b>	<b>27.6</b>	<b>0.097</b>
5KP18e3 / 5KP18Ce3	20.0	24.4	5	18	2	155	32.2	0.098
<b>5KP18Ae3 / 5KP18CAe3</b>	<b>20.0</b>	<b>22.1</b>	<b>5</b>	<b>18</b>	<b>2</b>	<b>171</b>	<b>29.2</b>	<b>0.098</b>
5KP20e3 / 5KP20Ce3	22.2	27.1	5	20	2	140	35.8	0.099
<b>5KP20Ae3 / 5KP20CAe3</b>	<b>22.2</b>	<b>24.5</b>	<b>5</b>	<b>20</b>	<b>2</b>	<b>154</b>	<b>32.4</b>	<b>0.099</b>
5KP22e3 / 5KP22Ce3	24.4	29.8	5	22	2	127	39.4	0.100
<b>5KP22Ae3 / 5KP22CAe3</b>	<b>24.4</b>	<b>26.9</b>	<b>5</b>	<b>22</b>	<b>2</b>	<b>141</b>	<b>35.5</b>	<b>0.100</b>
5KP24e3 / 5KP24Ce3	26.7	32.6	5	24	2	116	43.0	0.101
<b>5KP24Ae3 / 5KP24CAe3</b>	<b>26.7</b>	<b>29.5</b>	<b>5</b>	<b>24</b>	<b>2</b>	<b>129</b>	<b>38.9</b>	<b>0.101</b>

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**ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise stated (continued)**

DEVICE NUMBER	BREAKDOWN VOLTAGE <sup>(1)</sup> V <sub>(BR)</sub> @ I <sub>T</sub>		TEST CURRENT I <sub>T</sub>	STAND-OFF VOLTAGE V <sub>WM</sub>	MAXIMUM STANDBY CURRENT <sup>(3)</sup> I <sub>D</sub> @ V <sub>WM</sub>	MAXIMUM PEAK PULSE CURRENT <sup>(2)</sup> I <sub>PP</sub>	MAXIMUM CLAMPING VOLTAGE V <sub>C</sub> @ I <sub>PP</sub>	MAXIMUM TEMPERATURE COEFFICIENT OF V <sub>(BR)</sub> α <sub>V(BR)</sub>
	Min	Max						
	Volts	mA						
5KP26e3 / 5KP26Ce3	28.9	35.3	5	26	2	107	46.6	0.101
<b>5KP26Ae3 / 5KP26CAe3</b>	<b>28.9</b>	<b>31.9</b>	<b>5</b>	<b>26</b>	<b>2</b>	<b>119</b>	<b>42.1</b>	<b>0.101</b>
5KP28e3 / 5KP28Ce3	31.1	38.0	5	28	2	100	50.0	0.102
<b>5KP28Ae3 / 5KP28CAe3</b>	<b>31.1</b>	<b>34.4</b>	<b>5</b>	<b>28</b>	<b>2</b>	<b>110</b>	<b>45.4</b>	<b>0.102</b>
5KP30e3 / 5KP30Ce3	33.3	40.7	5	30	2	93.5	53.5	0.103
<b>5KP30Ae3 / 5KP30CAe3</b>	<b>33.3</b>	<b>36.8</b>	<b>5</b>	<b>30</b>	<b>2</b>	<b>103</b>	<b>48.4</b>	<b>0.103</b>
5KP33e3 / 5KP33Ce3	36.7	44.9	5	33	2	84.7	59.0	0.104
<b>5KP33Ae3 / 5KP33CAe3</b>	<b>36.7</b>	<b>40.6</b>	<b>5</b>	<b>33</b>	<b>2</b>	<b>93.8</b>	<b>53.3</b>	<b>0.104</b>
5KP36e3 / 5KP36Ce3	40.0	48.9	5	36	2	77.8	64.3	0.104
<b>5KP36Ae3 / 5KP36CAe3</b>	<b>40.0</b>	<b>44.2</b>	<b>5</b>	<b>36</b>	<b>2</b>	<b>86.1</b>	<b>58.1</b>	<b>0.104</b>
5KP40e3 / 5KP40Ce3	44.4	54.3	5	40	2	70.0	71.4	0.105
<b>5KP40Ae3 / 5KP40CAe3</b>	<b>44.4</b>	<b>49.1</b>	<b>5</b>	<b>40</b>	<b>2</b>	<b>77.5</b>	<b>64.5</b>	<b>0.105</b>
5KP43e3 / 5KP43Ce3	47.8	58.4	5	43	2	65.2	76.7	0.105
<b>5KP43Ae3 / 5KP43CAe3</b>	<b>47.8</b>	<b>52.8</b>	<b>5</b>	<b>43</b>	<b>2</b>	<b>72.0</b>	<b>69.4</b>	<b>0.105</b>
5KP45e3 / 5KP45Ce3	50.0	61.1	5	45	2	62.3	80.3	0.106
<b>5KP45Ae3 / 5KP45CAe3</b>	<b>50.0</b>	<b>55.3</b>	<b>5</b>	<b>45</b>	<b>2</b>	<b>68.8</b>	<b>72.7</b>	<b>0.106</b>
5KP48e3 / 5KP48Ce3	53.3	65.2	5	48	2	58.5	85.5	0.106
<b>5KP48Ae3 / 5KP48CAe3</b>	<b>53.3</b>	<b>58.9</b>	<b>5</b>	<b>48</b>	<b>2</b>	<b>64.6</b>	<b>77.4</b>	<b>0.106</b>
5KP51e3 / 5KP51Ce3	56.7	69.3	5	51	2	54.9	91.1	0.107
<b>5KP51Ae3 / 5KP51CAe3</b>	<b>56.7</b>	<b>62.7</b>	<b>5</b>	<b>51</b>	<b>2</b>	<b>60.7</b>	<b>82.4</b>	<b>0.107</b>
5KP54e3 / 5KP54Ce3	60.0	73.3	5	54	2	51.9	96.3	0.107
<b>5KP54Ae3 / 5KP54CAe3</b>	<b>60.0</b>	<b>66.3</b>	<b>5</b>	<b>54</b>	<b>2</b>	<b>57.4</b>	<b>87.1</b>	<b>0.107</b>
5KP58e3 / 5KP58Ce3	64.4	78.7	5	58	2	48.5	103	0.107
<b>5KP58Ae3 / 5KP58CAe3</b>	<b>64.4</b>	<b>71.2</b>	<b>5</b>	<b>58</b>	<b>2</b>	<b>53.4</b>	<b>94</b>	<b>0.107</b>
5KP60e3 / 5KP60Ce3	66.7	81.5	5	60	2	46.7	107	0.108
<b>5KP60Ae3 / 5KP60CAe3</b>	<b>66.7</b>	<b>73.7</b>	<b>5</b>	<b>60</b>	<b>2</b>	<b>51.7</b>	<b>97</b>	<b>0.108</b>
5KP64e3 / 5KP64Ce3	71.1	86.9	5	64	2	43.9	114	0.108
<b>5KP64Ae3 / 5KP64CAe3</b>	<b>71.1</b>	<b>78.6</b>	<b>5</b>	<b>64</b>	<b>2</b>	<b>48.5</b>	<b>103</b>	<b>0.108</b>
5KP70e3 / 5KP70Ce3	77.8	95.1	5	70	2	40.0	125	0.108
<b>5KP70Ae3 / 5KP70CAe3</b>	<b>77.8</b>	<b>86.0</b>	<b>5</b>	<b>70</b>	<b>2</b>	<b>44.2</b>	<b>113</b>	<b>0.108</b>
5KP75e3 / 5KP75Ce3	83.3	102	5	75	2	37.3	134	0.108
<b>5KP75Ae3 / 5KP75CAe3</b>	<b>83.3</b>	<b>92.1</b>	<b>5</b>	<b>75</b>	<b>2</b>	<b>41.3</b>	<b>121</b>	<b>0.108</b>
5KP78e3 / 5KP78Ce3	86.7	106	5	78	2	36.0	139	0.108
<b>5KP78Ae3 / 5KP78CAe3</b>	<b>86.7</b>	<b>95.8</b>	<b>5</b>	<b>78</b>	<b>2</b>	<b>39.7</b>	<b>126</b>	<b>0.108</b>
5KP85e3 / 5KP85Ce3	94.4	115	5	85	2	33.1	151	0.108
<b>5KP85Ae3 / 5KP85CAe3</b>	<b>94.4</b>	<b>104</b>	<b>5</b>	<b>85</b>	<b>2</b>	<b>36.5</b>	<b>137</b>	<b>0.108</b>
5KP90e3 / 5KP90Ce3	100	122	5	90	2	31.3	160	0.110
<b>5KP90Ae3 / 5KP90CAe3</b>	<b>100</b>	<b>111</b>	<b>5</b>	<b>90</b>	<b>2</b>	<b>34.2</b>	<b>146</b>	<b>0.110</b>
5KP100e3 / 5KP100Ce3	111	136	5	100	2	27.9	179	0.110
<b>5KP100Ae3 / 5KP100CAe3</b>	<b>111</b>	<b>123</b>	<b>5</b>	<b>100</b>	<b>2</b>	<b>30.9</b>	<b>162</b>	<b>0.110</b>

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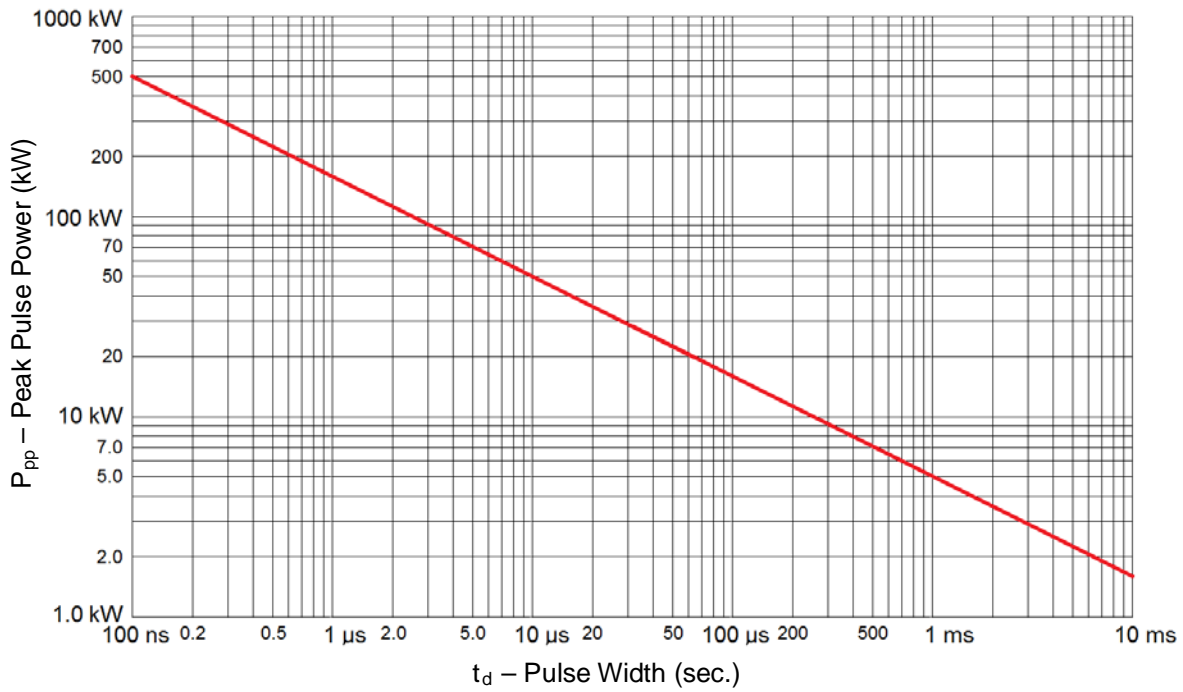
**ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise stated (continued)**

DEVICE NUMBER	BREAKDOWN VOLTAGE <sup>(1)</sup> $V_{(BR)}$ @ $I_T$		TEST CURRENT $I_T$	STAND-OFF VOLTAGE $V_{WM}$	MAXIMUM STANDBY CURRENT <sup>(3)</sup> $I_D$ @ $V_{WM}$	MAXIMUM PEAK PULSE CURRENT <sup>(2)</sup> $I_{PP}$	MAXIMUM CLAMPING VOLTAGE $V_C$ @ $I_{PP}$	MAXIMUM TEMPERATURE COEFFICIENT OF $V_{(BR)}$ $\alpha_{V(BR)}$
	Min	Max						
	Volts	mA						
5KP110e3 / 5KP110Ce3	122	149	5	110	2	25.5	196	0.110
<b>5KP110Ae3 / 5KP110CAe3</b>	<b>122</b>	<b>135</b>	<b>5</b>	<b>110</b>	<b>2</b>	<b>28.2</b>	<b>177</b>	<b>0.110</b>
5KP120e3 / 5KP120Ce3	133	162	5	120	2	23.5	213	0.110
<b>5KP120Ae3 / 5KP120CAe3</b>	<b>133</b>	<b>147</b>	<b>5</b>	<b>120</b>	<b>2</b>	<b>26.4</b>	<b>193</b>	<b>0.110</b>
5KP130e3 / 5KP130Ce3	144	175	5	130	2	21.6	231	0.110
<b>5KP130Ae3 / 5KP130CAe3</b>	<b>144</b>	<b>159</b>	<b>5</b>	<b>130</b>	<b>2</b>	<b>24.4</b>	<b>209</b>	<b>0.110</b>
5KP150e3 / 5KP150Ce3	167	204	5	150	2	18.7	268	0.110
<b>5KP150Ae3 / 5KP150CAe3</b>	<b>167</b>	<b>185</b>	<b>5</b>	<b>150</b>	<b>2</b>	<b>21.0</b>	<b>243</b>	<b>0.110</b>
5KP160e3 / 5KP160Ce3	178	217	5	160	2	17.4	287	0.110
<b>5KP160Ae3 / 5KP160CAe3</b>	<b>178</b>	<b>197</b>	<b>5</b>	<b>160</b>	<b>2</b>	<b>19.7</b>	<b>259</b>	<b>0.110</b>
5KP170e3 / 5KP170Ce3	189	231	5	170	2	16.4	304	0.110
<b>5KP170Ae3 / 5KP170CAe3</b>	<b>189</b>	<b>209</b>	<b>5</b>	<b>170</b>	<b>2</b>	<b>18.5</b>	<b>275</b>	<b>0.110</b>
5KP180e3 / 5KP180Ce3	200	244	5	180	2	15.5	323	0.110
<b>5KP180Ae3 / 5KP180CAe3</b>	<b>200</b>	<b>221</b>	<b>5</b>	<b>180</b>	<b>2</b>	<b>17.5</b>	<b>292</b>	<b>0.110</b>
5KP190e3 / 5KP190Ce3	211	258	5	190	2	14.6	343	0.110
<b>5KP190Ae3 / 5KP190CAe3</b>	<b>211</b>	<b>233</b>	<b>5</b>	<b>190</b>	<b>2</b>	<b>16.5</b>	<b>310</b>	<b>0.110</b>
5KP200e3 / 5KP200Ce3	222	271	5	200	2	13.7	364	0.110
<b>5KP200Ae3 / 5KP200CAe3</b>	<b>222</b>	<b>246</b>	<b>5</b>	<b>200</b>	<b>2</b>	<b>15.5</b>	<b>329</b>	<b>0.110</b>
5KP210e3 / 5KP210Ce3	233	284	5	210	2	12.9	386	0.110
<b>5KP210Ae3 / 5KP210CAe3</b>	<b>233</b>	<b>258</b>	<b>5</b>	<b>210</b>	<b>2</b>	<b>14.6</b>	<b>349</b>	<b>0.110</b>
5KP220e3 / 5KP220Ce3	244	298	5	220	2	12.2	410	0.110
<b>5KP220Ae3 / 5KP220CAe3</b>	<b>244</b>	<b>270</b>	<b>5</b>	<b>220</b>	<b>2</b>	<b>13.7</b>	<b>371</b>	<b>0.110</b>
5KP250e3 / 5KP250Ce3	277	338	5	250	2	10.6	470	0.110
<b>5KP250Ae3 / 5KP250CAe3</b>	<b>277</b>	<b>306</b>	<b>5</b>	<b>250</b>	<b>2</b>	<b>12.0</b>	<b>425</b>	<b>0.110</b>

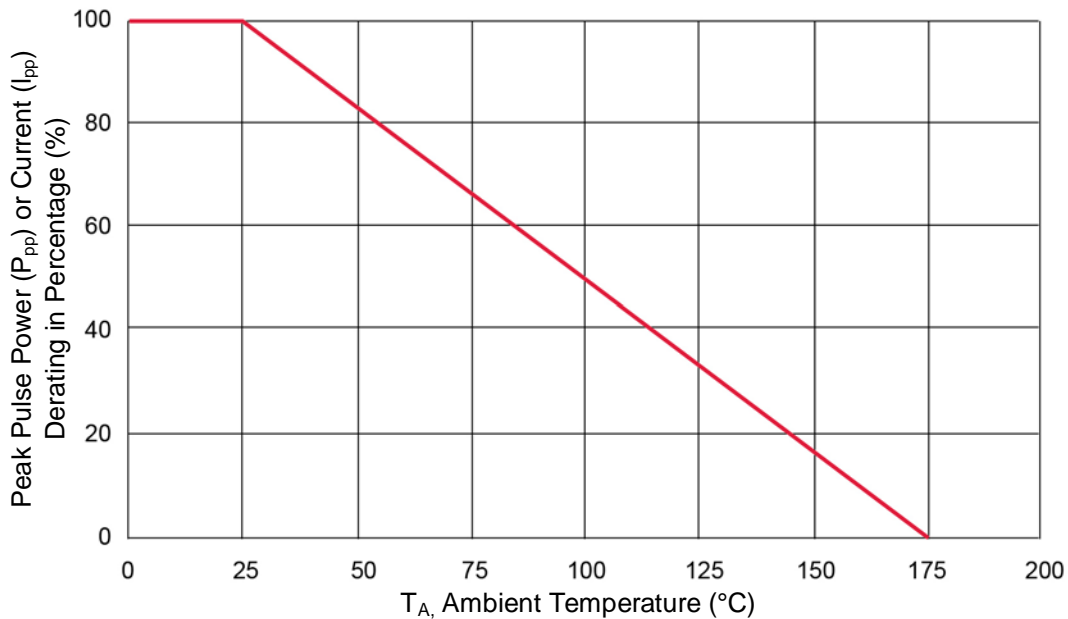
**NOTES:**

- (1)  $V_{(BR)}$  measured after  $I_T$  applied for 300  $\mu$ s,  $I_T$  = square wave pulse or equivalent
- (2) Surge current waveform per [Figure 3](#) and derated per [Figure 2](#)
- (3) For bidirectional types with  $V_{WM}$  of 30 volts and less, the  $I_D$  limit is doubled

GRAPHS

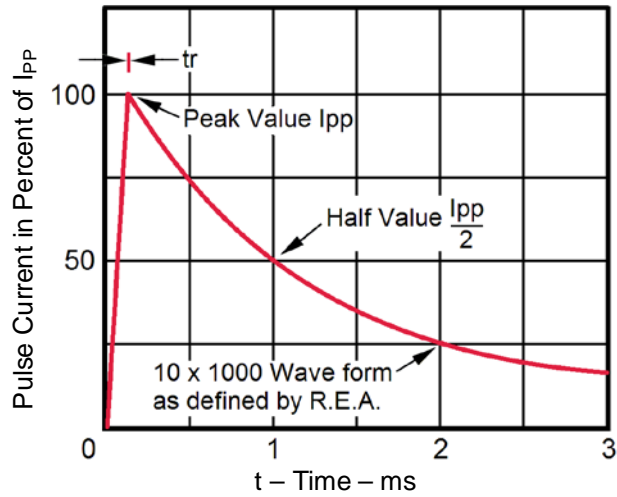


**FIGURE 1**  
Peak Pulse Power Rating Curve



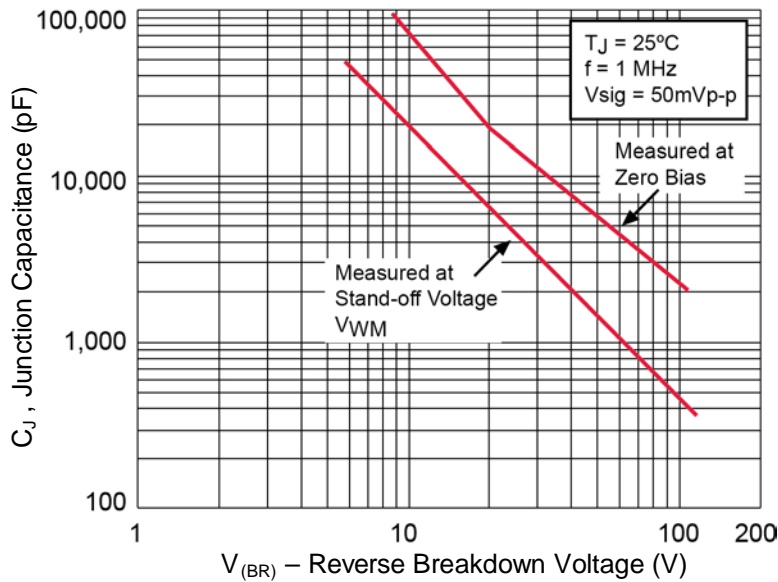
**FIGURE 2**  
Pulse Derating Curve

GRAPHS (continued)



Test waveform parameters:  $t_r=10 \mu s$ ,  $t_p=1000 \mu s$

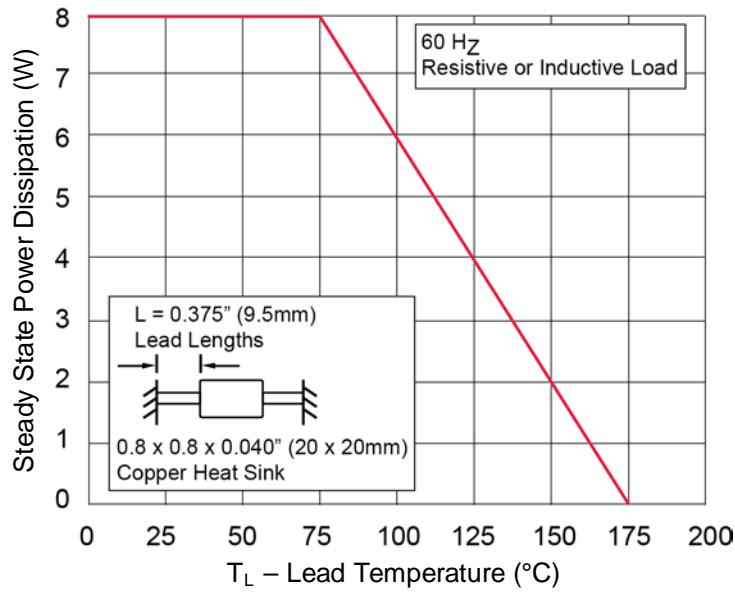
**FIGURE 3**  
Pulse Waveform for 10/1000  $\mu s$  Exponential Surge



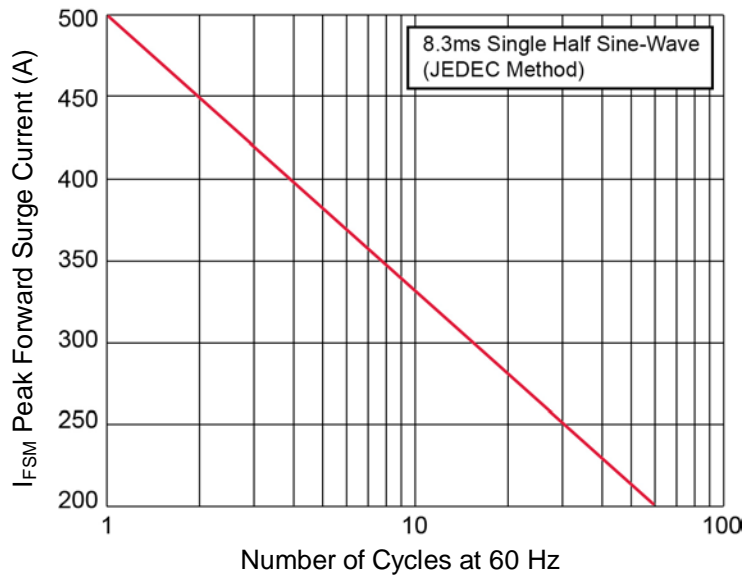
**FIGURE 4**  
Typical Junction Capacitance



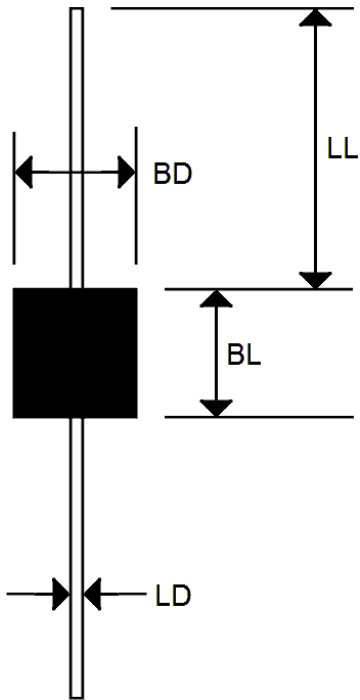
GRAPHS (continued)



**FIGURE 5**  
Steady State Power Derating Curve



**FIGURE 6**  
Maximum Non-repetitive Forward Surge Current

**PACKAGE DIMENSIONS**


Dim	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
<b>LL</b>	0.750	-	19.05	-
<b>BL</b>	0.340	0.360	8.645	9.135
<b>BD</b>	0.340	0.360	8.645	9.135
<b>LD</b>	0.047	0.053	1.194	1.346

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[5KP20Ce3/TR13](#) [5KP17e3/TR13](#) [5KP36Ae3/TR13](#) [5KP36CAe3/TR13](#) [5KP11Ce3/TR13](#) [5KP33e3/TR13](#)  
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[5KP78Ae3/TR13](#) [5KP10Ae3/TR13](#) [5KP9.0Ce3/TR13](#) [5KP75e3/TR13](#) [5KP8.5Ce3/TR13](#) [5KP43Ae3/TR13](#)  
[5KP8.5Ae3/TR13](#) [5KP20CAe3/TR13](#) [5KP7.5CAe3/TR13](#) [5KP6.0Ae3/TR13](#) [5KP26CAe3/TR13](#) [5KP10CAe3/TR13](#)  
[5KP5.0Ce3/TR13](#) [5KP8.5e3/TR13](#) [5KP78CAe3/TR13](#) [5KP6.0e3/TR13](#) [5KP8.5CAe3/TR13](#) [5KP17Ce3/TR13](#)  
[5KP14Ce3/TR13](#) [5KP33CAe3/TR13](#) [5KP14e3/TR13](#) [5KP18e3/TR13](#) [5KP54Ae3/TR13](#) [5KP78e3/TR13](#)  
[5KP20Ae3/TR13](#) [5KP5.0e3/TR13](#) [5KP11CAe3/TR13](#) [5KP110CAe3/TR13](#) [5KP12e3/TR13](#) [5KP28Ce3/TR13](#)  
[5KP75Ae3/TR13](#) [5KP7.0Ae3/TR13](#) [5KP10e3/TR13](#) [5KP58Ce3/TR13](#) [5KP90Ce3/TR13](#) [5KP36e3/TR13](#)  
[5KP75CAe3/TR13](#) [5KP100CAe3/TR13](#) [5KP6.5CAe3/TR13](#) [5KP64CAe3/TR13](#) [5KP75Ce3/TR13](#) [5KP40Ce3/TR13](#)  
[5KP51CAe3/TR13](#) [5KP7.0CAe3/TR13](#) [5KP24e3/TR13](#) [5KP48Ae3/TR13](#) [5KP22e3/TR13](#) [5KP70Ce3/TR13](#)  
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