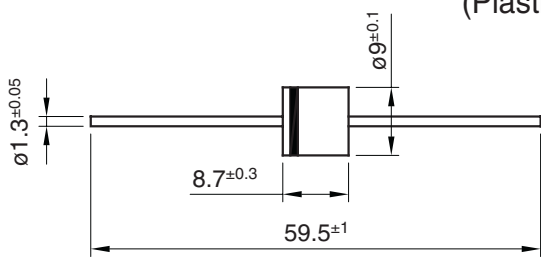



**5000W Unidirectional and Bidirectional Load Dump Glass Passivated Automotive T.V.S.**

<p><b>Dimensions in mm.</b></p> <p style="text-align: right;"><b>P-6 (Plastic)</b></p>  <p><b>Mounting instructions</b></p> <ol style="list-style-type: none"> <li>1. Min. distance from body to soldering point, 4 mm.</li> <li>2. Max. solder temperature, 350 °C.</li> <li>3. Max. soldering time, 3.5 sec.</li> <li>4. Do not bend lead at a point closer than 4 mm. to the body.</li> </ol>	<ul style="list-style-type: none"> <li>• Developed to suppress transient in the automotive system, protecting mobile transceivers, radios and tape decks from overvoltages (width pulses).</li> </ul>  <ul style="list-style-type: none"> <li>• <b>Glass passivated junction</b></li> <li>• Low Capacitance AC signal protection</li> <li>• Response time typically &lt; 1 ns.</li> <li>• Molded case</li> <li>• The plastic material carries U/L recognition 94 V-0</li> <li>• Terminal: Axial leads</li> </ul>
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**Maximum Ratings, According to IEC Publication No. 134**

$P_{pp}$	Peak pulse power with 10/1000 $\mu$ s exponential pulse	5000 W
$P_{M(AV)}$	Steady State Power Dissipation at $T_L = 75\text{ }^\circ\text{C}$ Mounted in copper leaf area of 20 mm <sup>2</sup>	8 W
$I_{FSM}$	Non repetitive surge peak forward current (t = 10 msec.) (Note 1)	500 A
$T_j$	Operating temperature range	- 65 to + 175 °C
$T_{stg}$	Storage temperature range	- 65 to + 175 °C

**Electrical Characteristics at  $T_{amb} = 25\text{ }^\circ\text{C}$**

$V_F$	Max. forward voltage drop at $I_F = 100\text{A}$ (Note 1)	3.5 V
$R_{thj-l}$	Max. thermal resistance (l = 10 mm.)	10 °C/W

Note 1: Valid only for Unidirectional.

## Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Type	Breakdown Voltage V <sub>BR</sub> Volts (Note 1)		@ I <sub>R</sub> (mA)	Maximum Reverse Leakage Current		Maximum Clamping Voltage		Maximum Temperature Coefficient of V <sub>BR</sub> (%/°C)
	Min.	Max.		I <sub>RM</sub> (μA)	V <sub>RM</sub> (V)	V <sub>CL</sub> (V) (Note 2)	I <sub>PP</sub> (A)	
5KP7.5	8.33	10.20	5.0	250	7.5	14.3	350	+0.073
5KP7.5A	8.33	9.21	5.0	250	7.5	12.9	388	+0.073
5KP8.0	8.89	10.90	5.0	150	8.0	15.0	333	+0.075
5KP8.0A	8.89	9.83	5.0	150	8.0	13.6	367	+0.075
5KP8.5	9.44	11.50	5.0	50	8.5	15.9	314	+0.078
5KP8.5A	9.44	10.40	5.0	50	8.5	14.4	347	+0.078
5KP9.0	10.00	12.20	5.0	20	9.0	16.9	295	+0.081
5KP9.0A	10.00	11.10	5.0	20	9.0	15.4	325	+0.081
5KP10	11.10	13.60	5.0	15	10.0	18.8	266	+0.084
5KP10A	11.10	12.30	5.0	15	10.0	17.0	294	+0.084
5KP11	12.20	14.90	5.0	10	11.0	20.1	249	+0.086
5KP11A	12.20	13.50	5.0	10	11.0	18.2	274	+0.086
5KP12	13.30	16.30	5.0	10	12.0	22.0	227	+0.088
5KP12A	13.30	14.70	5.0	10	12.0	19.9	251	+0.088
5KP13	14.40	17.60	5.0	10	13.0	23.8	210	+0.090
5KP13A	14.40	15.90	5.0	10	13.0	21.5	232	+0.090
5KP14	15.60	19.10	5.0	10	14.0	25.8	194	+0.092
5KP14A	15.60	17.20	5.0	10	14.0	23.2	215	+0.092
5KP15	16.70	20.40	5.0	10	15.0	26.9	188	+0.094
5KP15A	16.70	18.50	5.0	10	15.0	24.4	206	+0.094
5KP16	17.80	21.80	5.0	10	16.0	28.8	176	+0.096
5KP16A	17.80	19.70	5.0	10	16.0	26.1	191	+0.096
5KP17	18.90	23.10	5.0	10	17.0	30.5	164	+0.097
5KP17A	18.90	20.90	5.0	10	17.0	27.6	161	+0.097
5KP18	20.00	24.40	5.0	10	18.0	32.2	155	+0.098
5KP18A	20.00	22.10	5.0	10	18.0	29.2	172	+0.098
5KP20	22.20	27.10	5.0	10	20.0	35.8	139	+0.099
5KP20A	22.20	24.50	5.0	10	20.0	32.4	154	+0.099
5KP22	24.40	29.80	5.0	10	22.0	39.4	127	+0.100
5KP22A	24.40	26.90	5.0	10	22.0	35.5	141	+0.100
5KP24	26.70	32.60	5.0	10	24.0	43.0	116	+0.101
5KP24A	26.70	29.50	5.0	10	24.0	38.9	128	+0.101
5KP26	28.90	35.30	5.0	10	26.0	46.6	107	+0.101
5KP26A	28.90	31.90	5.0	10	26.0	42.1	119	+0.101
5KP28	31.10	38.00	5.0	10	28.0	50.1	99	+0.102
5KP28A	31.10	34.40	5.0	10	28.0	45.4	110	+0.102
5KP30	33.30	40.70	5.0	10	30.0	53.5	93	+0.103
5KP30A	33.30	36.80	5.0	10	30.0	48.4	103	+0.103

NOTES:

1 V<sub>BR</sub> measured after I<sub>T</sub> = Square Wave Pulse or equivalent.

2. Surge Current waveform per Figure (Pulse Waveform) and Derate per Figure (Pulse Derating Curve).

**Electrical Characteristics** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

Type	Breakdown Voltage $V_{BR}$ Volts (Note 1)		@ $I_R$ (mA)	Maximum Reverse Leakage Current		Maximum Clamping Voltage		Maximum Temperature Coefficient of $V_{BR}$ (%/°C)
	Min.	Max.		$I_{RM}$ ( $\mu\text{A}$ )	$V_{RM}$ (V)	$V_{CL}$ (V) (Note 2)	$I_{PP}$ (A)	
5KP33	36.70	44.90	5.0	10	33.0	59.0	85	+0.104
5KP33A	36.70	40.60	5.0	10	33.0	53.3	94	+0.104
5KP36	40.00	48.90	5.0	10	36.0	64.3	78	+0.104
5KP36A	40.00	44.20	5.0	10	36.0	58.1	85	+0.104
5KP40	44.40	54.30	5.0	10	40.0	71.4	70	+0.105
5KP40A	44.40	49.10	5.0	10	40.0	64.5	78	+0.105
5KP43	47.80	58.40	5.0	10	43.0	76.7	65	+0.105
5KP43A	47.80	52.80	5.0	10	43.0	69.4	72	+0.105
5KP45	50.00	61.10	5.0	10	45.0	80.3	62	+0.106
5KP45A	50.00	55.30	5.0	10	45.0	72.7	69	+0.106
5KP48	53.30	65.20	5.0	10	48.0	85.5	58	+0.106
5KP48A	53.30	58.90	5.0	10	48.0	77.4	65	+0.106
5KP51	56.70	69.30	5.0	10	51.0	91.1	55	+0.107
5KP51A	56.70	62.70	5.0	10	51.0	82.4	61	+0.107
5KP54	60.00	73.30	5.0	10	54.0	96.3	52	+0.107
5KP54A	60.00	66.30	5.0	10	54.0	87.1	57	+0.107
5KP58	64.40	78.70	5.0	10	58.0	103	49	+0.107
5KP58A	64.40	71.20	5.0	10	58.0	94	53	+0.107
5KP60		81.50	5.0	10	60.0	107	47	+0.108
5KP60A	66.70	73.70	5.0	10	60.0	97	52	+0.108
5KP64	71.10	86.90	5.0	10	64.0	114	44	+0.108
5KP64A	71.10	78.60	5.0	10	64.0	103	49	+0.108
5KP70	77.80	95.10	5.0	10	70.0	125	40	+0.108
5KP70A	77.80	86.00	5.0	10	70.0	113	44	+0.108
5KP75	83.30	102	5.0	10	75.0	134	37	+0.108
5KP75A	83.30	92.10	5.0	10	75.0	121	41	+0.108
5KP78	86.70	106	5.0	10	78.0	126	36	+0.108
5KP78A	86.70	95.80	5.0	10	78.0	126	40	+0.108
5KP85	94.40	115	5.0	10	85.0	151	33	+0.108
5KP85A	94.40	104	5.0	10	85.0	137	36	+0.110
5KP90	100	122	5.0	10	90.0	160	31	+0.110
5KP90A	100	111	5.0	10	90.0	146	34	+0.110
5KP100	111	136	5.0	10	100	179	28	+0.110
5KP100A	111	123	5.0	10	100	162	31	+0.110
5KP110	122	149	5.0	10	110	196	26	+0.112
5KP110A	122	135	5.0	10	110	177	28	+0.112
5KP150	167	204	5.0	5	150	268	18.7	+0.112
5KP150A	167	185	5.0	5	150	243	20.6	+0.112
5KP180	200	245	1.0	5	180	340	15	+0.112
5KP180A	200	222	1.0	5	180	322	16	+0.112

NOTES:

1  $V_{BR}$  measured after  $I_T =$  Square Wave Pulse or equivalent.

2. Surge Current waveform per Figure (Pulse Waveform) and Derate per Figure (Pulse Derating Curve).

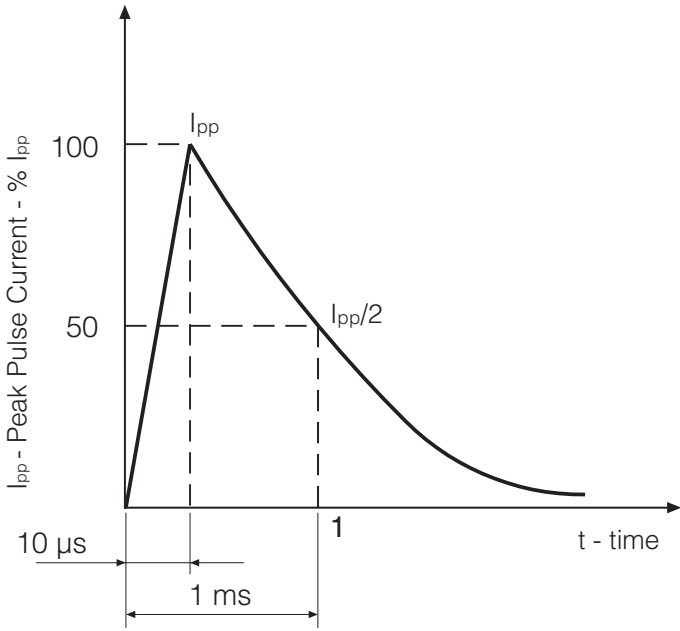
## Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Type	Breakdown Voltage V <sub>BR</sub> Volts (Note 1)		@ I <sub>R</sub> (mA)	Maximum Reverse Leakage Current		Maximum Clamping Voltage		Maximum Temperature Coefficient of V <sub>BR</sub> (%/°C)
	Min.	Max.		I <sub>RM</sub> (μA)	V <sub>RM</sub> (V)	V <sub>CL</sub> (V) (Note 2)	I <sub>PP</sub> (A)	
5KP7.5C	8.33	10.20	5.0	250	7.5	14.3	350	+0.073
5KP8.0C	8.89	10.90	5.0	150	8.0	15.0	333	+0.075
5KP8.5C	9.44	11.50	5.0	50	8.5	15.9	314	+0.078
5KP9.0C	10.00	12.20	5.0	20	9.0	16.9	295	+0.081
5KP10C	11.10	13.60	5.0	15	10.0	18.8	266	+0.084
5KP11C	12.20	14.90	5.0	10	11.0	20.1	249	+0.086
5KP12C	13.30	16.30	5.0	10	12.0	22.0	227	+0.088
5KP13C	14.40	17.60	5.0	10	13.0	23.8	210	+0.090
5KP14C	15.60	19.10	5.0	10	14.0	25.8	194	+0.092
5KP15C	16.70	20.40	5.0	10	15.0	26.9	188	+0.094
5KP16C	17.80	21.80	5.0	10	16.0	28.8	176	+0.096
5KP17C	18.90	23.10	5.0	10	17.0	30.5	164	+0.097
5KP18C	20.00	24.40	5.0	10	18.0	32.2	155	+0.098
5KP20C	22.20	27.10	5.0	10	20.0	35.8	139	+0.099
5KP22C	24.40	29.80	5.0	10	22.0	39.4	127	+0.100
5KP24C	26.70	32.60	5.0	10	24.0	43.0	116	+0.101
5KP26C	28.90	35.30	5.0	10	26.0	46.6	107	+0.101
5KP28C	31.10	38.00	5.0	10	28.0	50.1	99	+0.102
5KP30C	33.30	40.70	5.0	10	30.0	53.5	93	+0.103
5KP33C	36.70	44.90	5.0	10	33.0	59.0	85	+0.104
5KP36C	40.00	48.90	5.0	10	36.0	64.3	78	+0.104
5KP40C	44.40	54.30	5.0	10	40.0	71.4	70	+0.105
5KP43C	47.80	58.40	5.0	10	43.0	76.7	65	+0.105
5KP45C	50.00	61.10	5.0	10	45.0	80.3	62	+0.106
5KP48C	53.30	65.20	5.0	10	48.0	85.5	58	+0.106
5KP51C	56.70	69.30	5.0	10	51.0	91.1	55	+0.107
5KP54C	60.00	73.30	5.0	10	54.0	96.3	52	+0.107
5KP58C	64.40	78.70	5.0	10	58.0	103	49	+0.107
5KP60C	66.70	81.50	5.0	10	60.0	107	47	+0.108
5KP64C	71.10	86.90	5.0	10	64.0	114	44	+0.108
5KP70C	77.80	95.10	5.0	10	70.0	125	40	+0.108
5KP75C	83.30	102	5.0	10	75.0	134	37	+0.108
5KP78C	86.70	106	5.0	10	78.0	126	36	+0.108
5KP85C	94.40	115	5.0	10	85.0	151	33	+0.108
5KP90C	100	122	5.0	10	90.0	160	31	+0.110
5KP100C	111	136	5.0	10	100	179	28	+0.110
5KP110C	122	149	5.0	10	110	196	26	+0.112
5KP150C	167	204	5.0	5	150	268	18.7	+0.112
5KP180C	200	245	1.0	5	180	340	15	+0.112

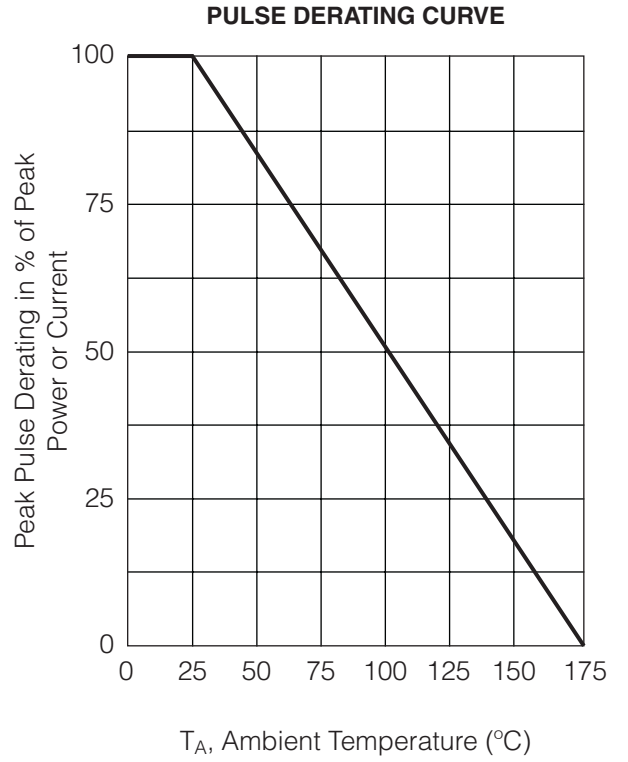
**NOTES:**

 1 V<sub>BR</sub> measured after I<sub>T</sub> = Square Wave Pulse or equivalent.

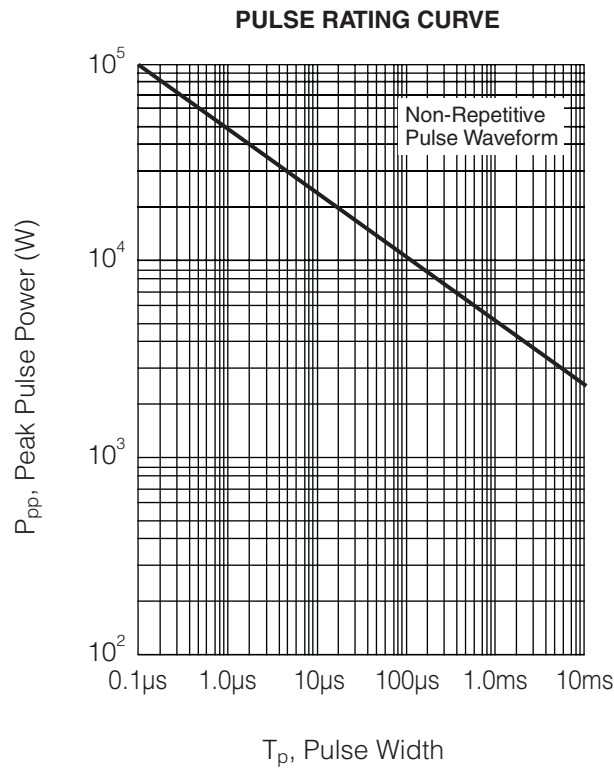
2. Surge Current waveform per Figure (Pulse Waveform) and Derate per Figure (Pulse Derating Curve).



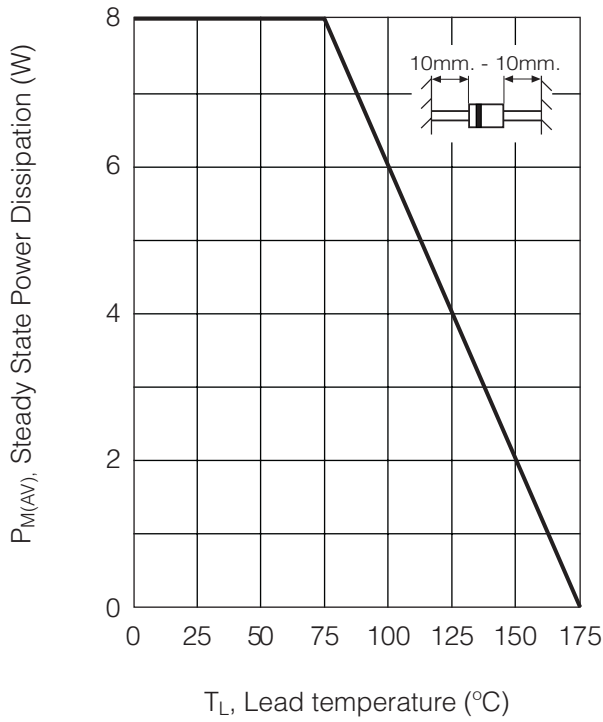
Pulse wave form 10/1000



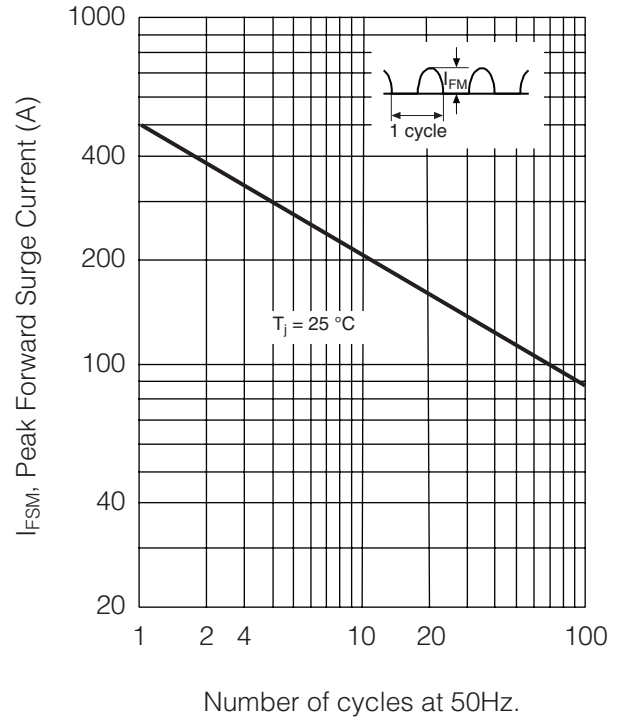
$T_A$ , Ambient Temperature ( $^{\circ}C$ )



### STEADY STATE POWER DERATING



### MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



### TYPICAL JUNCTION CAPACITANCE

