



180 Lafayette Road  
 North Hampton, NH 03862-2448  
 PH: 603-964-3165  
 FX: 603-964-3168  
 WWW.PDEELECTRONICS.COM

## TRANSIENT VOLTAGE SUPPRESSOR 15KP SERIES

**Rev A**

**FEATURES:**

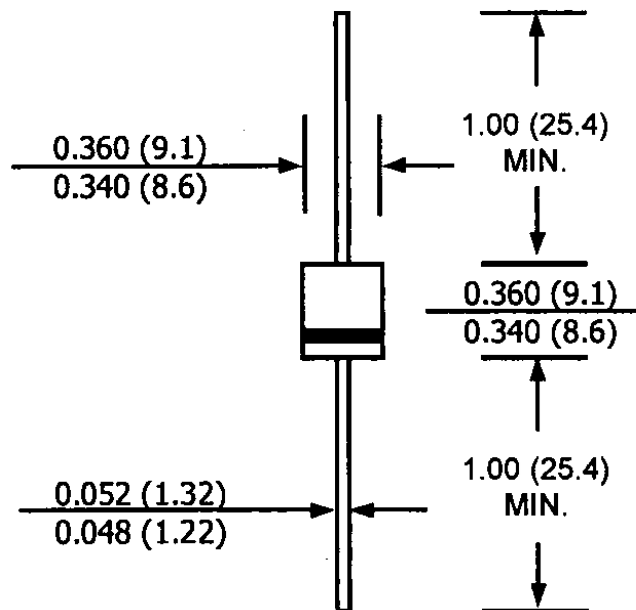
- Glass passivated junction chip
- Excellent Clamping Capability
- Fast Response Time
- Low Zener Impedance
- Low Leakage Current
- Fast Response Time: typically less than 1.0ps from 0 volt to BV, Bidirectional less than 10ns
- High temperature soldering guaranteed: 265°C/10 second  
 0.375", (9.5mm) lead length.
- Pb / RoHS Free

**MECHANICAL DATA**

- Case: Void-free molded plastic body
- Epoxy: UL94V-O rate flame retardant
- Lead: Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting position: Any
- Weight: 2.1 grams

**MAXIMUM RATINGS** (Ta = 25 °C)

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation (10X1000µs, see Fig.1)	P <sub>PK</sub>	15,000	W
Steady State Power Dissipation	P <sub>D</sub>	7.0	W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to +175	°C



**Dimensions in inches and ( millimeters )**

Specifications subject to change without notice.

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Part Number (Uni-directional)	Part Number (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>
		V <sub>WM</sub>	V <sub>BR</sub> (V)		I <sub>T</sub>	I <sub>R</sub>	V <sub>C</sub>	I <sub>PP</sub>	
		(V)	Min.	Max.	(mA)	(µA)	(V)	(A)	
15KP12	15KP12C	12	13.3	16.3	50	10,000	22.0	658	12
15KP12A	15KP12CA	12	13.3	14.7	50	10,000	19.9	725	12
15KP13	15KP13C	13	14.4	17.6	50	10,000	23.8	607	13
15KP13A	15KP13CA	13	14.4	15.9	50	10,000	21.5	669	13
15KP14	15KP14C	14	15.6	19.1	50	8,000	25.8	564	14
15KP14A	15KP14CA	14	15.6	17.2	50	8,000	23.2	622	14
15KP15	15KP15C	15	16.7	20.4	50	8,000	26.9	526	16
15KP15A	15KP15CA	15	16.7	18.5	50	8,000	24.4	580	16
15KP16	15KP16C	16	17.8	21.8	50	8,000	28.8	493	19
15KP16A	15KP16CA	16	17.8	19.7	50	8,000	26.0	544	17
15KP17	15KP17C	17	18.9	23.1	50	5,000	32.2	464	19
15KP17A	15KP17CA	17	18.9	20.9	50	5,000	29.3	512	17
15KP18	15KP18C	18	20.0	24.4	50	5,000	34.2	439	20
15KP18A	15KP18CA	18	20.0	22.1	50	5,000	30.9	485	18
15KP20	15KP20C	20	22.2	27.1	20	1,500	37.9	396	24
15KP20A	15KP20CA	20	22.2	24.5	20	1,500	34.3	437	21
15KP22	15KP22C	22	24.4	29.8	10	500	41.1	365	27
15KP22A	15KP22CA	22	24.4	26.9	10	500	37.1	404	24
15KP24	15KP24C	24	26.7	32.6	5.0	150	45.0	333	30
15KP24A	15KP24CA	24	26.7	29.5	5.0	150	40.7	369	27
15KP26	15KP26C	26	28.9	35.3	5.0	50	48.7	308	32
15KP26A	15KP26CA	26	28.9	31.9	5.0	50	44.0	341	29
15KP28	15KP28C	28	31.1	38.0	5.0	25	52.4	286	35
15KP28A	15KP28CA	28	31.1	34.4	5.0	25	47.5	316	31
15KP30	15KP30C	30	33.3	40.7	5.0	15	56.2	267	37
15KP30A	15KP30CA	30	33.3	36.8	5.0	15	50.7	296	33
15KP33	15KP33C	33	36.7	44.9	5.0	10	60.6	248	42
15KP33A	15KP33CA	33	36.7	40.6	5.0	10	54.8	274	38
15KP36	15KP36C	36	40.0	48.9	5.0	10	66.0	227	46
15KP36A	15KP36CA	36	40.0	44.2	5.0	10	59.7	251	41
15KP40	15KP40C	40	44.4	54.3	5.0	10	72.8	206	51
15KP40A	15KP40CA	40	44.4	49.1	5.0	10	65.8	228	46
15KP43	15KP43C	43	47.8	58.4	5.0	10	77.1	195	55
15KP43A	15KP43CA	43	47.8	52.8	5.0	10	69.7	215	50
15KP45	15KP45C	45	50.0	61.1	5.0	10	80.7	186	57
15KP45A	15KP45CA	45	50.0	55.3	5.0	10	73.0	205	52
15KP48	15KP48C	48	53.3	65.1	5.0	10	85.9	175	62
15KP48A	15KP48CA	48	53.3	58.9	5.0	10	77.7	193	56
15KP51	15KP51C	51	56.7	69.3	5.0	10	91.5	164	66
15KP51A	15KP51CA	51	56.7	62.7	5.0	10	82.5	181	60
15KP54	15KP54C	54	60.0	73.3	5.0	10	96.8	155	70
15KP54A	15KP54CA	54	60.0	66.3	5.0	10	87.5	171	63
15KP58	15KP58C	58	64.4	78.7	5.0	10	104	144	76
15KP58A	15KP58CA	58	64.4	71.2	5.0	10	94	160	68

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**Rev A**

### 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 <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>VM</sub>	V <sub>BR</sub> (V)		I <sub>T</sub>	I <sub>R</sub>	V <sub>C</sub>	I <sub>PP</sub>	
		(V)	Min.	Max.	(mA)	(μA)	(V)	(A)	
15KP60	15KP60C	60	66.7	81.5	5.0	10	107	140	78
15KP60A	15KP60CA	60	66.7	73.7	5.0	10	97.3	154	70
15KP64	15KP64C	64	71.1	86.9	5.0	10	115	130	84
15KP64A	15KP64CA	64	71.1	78.6	5.0	10	104	144	76
15KP70	15KP70C	70	77.8	95.1	5.0	10	126	119	92
15KP70A	15KP70CA	70	77.8	86.0	5.0	10	114	132	83
15KP75	15KP75C	75	83.3	102	5.0	10	135	111	100
15KP75A	15KP75CA	75	83.3	92.1	5.0	10	122	123	89
15KP78	15KP78C	78	86.7	106	5.0	10	140	107	104
15KP78A	15KP78CA	78	86.7	95.8	5.0	10	126	119	93
15KP85	15KP85C	85	94.4	115	5.0	10	152	99	113
15KP85A	15KP85CA	85	94.4	104	5.0	10	137	109	102
15KP90	15KP90C	90	100	122	5.0	10	160	94	120
15KP90A	15KP90CA	90	100	111	5.0	10	146	103	110
15KP100	15KP100C	100	111	136	5.0	10	179	84	134
15KP100A	15KP100CA	100	111	123	5.0	10	162	93	123
15KP110	15KP110C	110	122	149	5.0	10	196	77	147
15KP110A	15KP110CA	110	122	135	5.0	10	178	84	133
15KP120	15KP120C	120	133	163	5.0	10	214	70	161
15KP120A	15KP120CA	120	133	147	5.0	10	193	78	146
15KP130	15KP130C	130	144	176	5.0	10	231	65	174
15KP130A	15KP130CA	130	144	159	5.0	10	209	72	158
15KP150	15KP150C	150	167	204	5.0	10	268	56	202
15KP150A	15KP150CA	150	167	185	5.0	10	243	62	184
15KP160	15KP160C	160	178	218	5.0	10	287	52	216
15KP160A	15KP160CA	160	178	197	5.0	10	259	58	196
15KP170	15KP170C	170	189	231	5.0	10	304	49	229
15KP170A	15KP170CA	170	189	209	5.0	10	275	55	208
15KP180	15KP180C	180	200	244	5.0	10	321	47	242
15KP180A	15KP180CA	180	200	221	5.0	10	287	52	220
15KP200	15KP200C	200	222	271	5.0	10	356	42	296
15KP200A	15KP200CA	200	222	245	5.0	10	325	46	274
15KP220	15KP220C	220	245	299	5.0	10	393	38	297
15KP220A	15KP220CA	220	245	271	5.0	10	347	43	273
15KP240	15KP240C	240	267	326	5.0	10	428	35	324
15KP240A	15KP240CA	240	267	295	5.0	10	387	39	300
15KP260	15KP260C	260	289	353	5.0	10	464	32	352
15KP260A	15KP260CA	260	289	319	5.0	10	419	36	317
15KP280	15KP280C	280	311	380	5.0	10	500	30	378
15KP280A	15KP280CA	280	311	344	5.0	10	452	33	342

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		V <sub>WM</sub>	V <sub>BR</sub> (V)		I <sub>T</sub>	I <sub>R</sub>	V <sub>C</sub>	I <sub>PP</sub>	
		(V)	Min.	Max.	(mA)	(μA)	(V)	(A)	
<b>15KP300</b>	<b>15KP300C</b>	300	333	406	5.0	10	535	28	396
<b>15KP300A</b>	<b>15KP300CA</b>	300	333	369	5.0	10	483	31	368
<b>15KP320</b>	<b>15KP320C</b>	320	356	434	5.0	10	588	26	398
<b>15KP320A</b>	<b>15KP320CA</b>	320	356	392	5.0	10	530	29	370
<b>15KP350</b>	<b>15KP350C</b>	350	389	475	5.0	10	637	24	458
<b>15KP350A</b>	<b>15KP350CA</b>	350	389	431	5.0	10	564	27	430
<b>15KP360</b>	<b>15KP360C</b>	360	400	488	5.0	10	635	24	408
<b>15KP360A</b>	<b>15KP360CA</b>	360	400	436	5.0	10	567	27	380
<b>15KP400</b>	<b>15KP400C</b>	400	444	542	5.0	10	730	21	518
<b>15KP400A</b>	<b>15KP400CA</b>	400	444	492	5.0	10	644	23	490

**Note:** (1) Suffix " A" denotes 5% tolerance device, no suffix denotes a 10% tolerance device.  
 (2) For bidirectional type having V<sub>WM</sub> of 30 volts and less, the I<sub>R</sub> limit is double.



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Rev A

FIG.1 - PULSE WAVE FORM

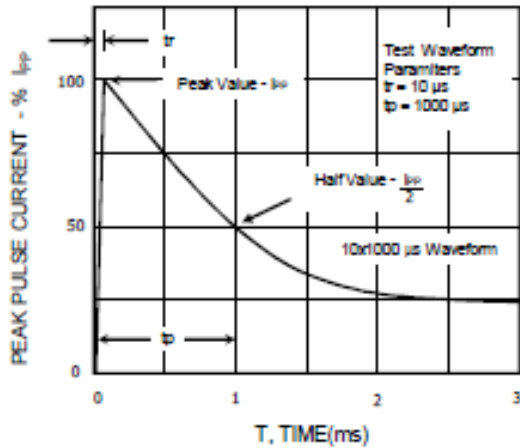


FIG.2 - PEAK PULSE POWER VS. PULSE TIME

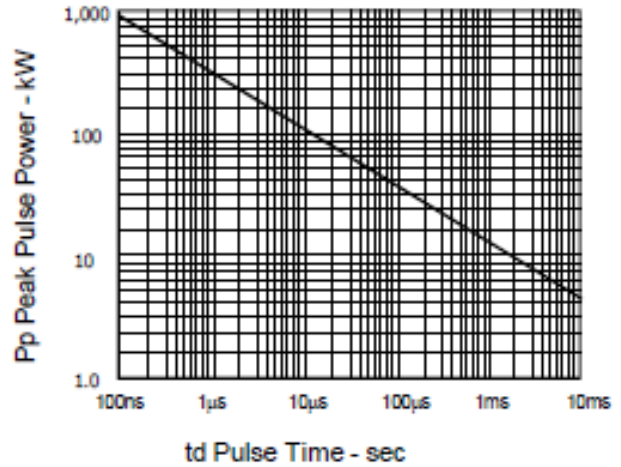


FIG.3 - TYPICAL CAPAITANCE  
VS. BREAKDOWN VOLTAGE

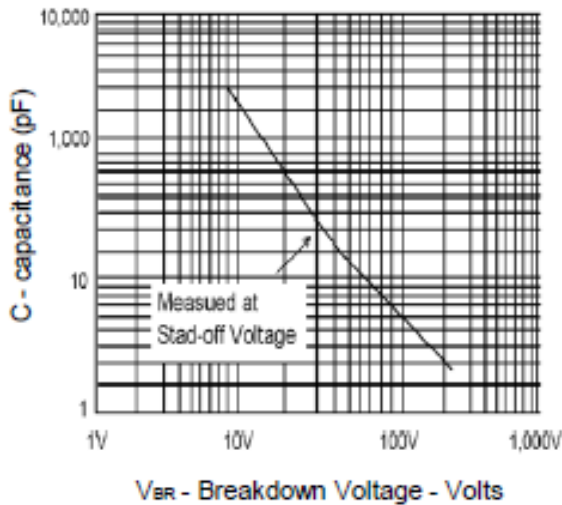
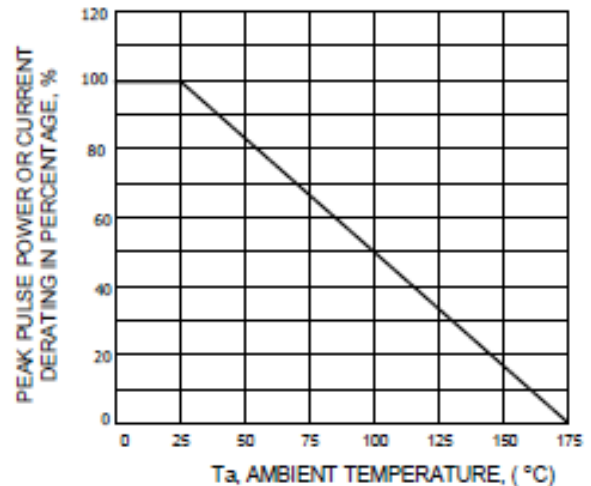


FIG.4 - PULSE DERATING CURVE



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