

## Axial Leaded Uni/Bi-Directional TVS Diodes

**Peak Pulse Power - 3000 W**  
**Reverse Working Voltage - 5.0 to 250 V**

### Description



The 3KP series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

### Features

- Glass passivated chip junction in R-6 Package
- 3000W Peak pulse power capability at 10/1000 $\mu$ s waveform
- Excellent clamping capability
- Typical IR less than 1 $\mu$ A above 13V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- High temperature soldering: 260 $^{\circ}$ C/10s

### Mechanical Data

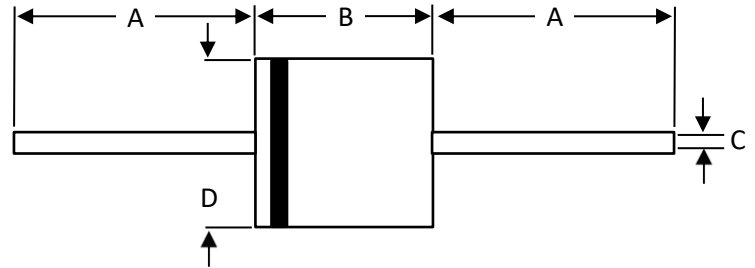
- Case:R-6 package
- Case material: "green" molding compound
- UL flammability classification rating 94V-0
- Polarity : by cathode band denotes uni-directional device, none cathode band denotes bi-directional device
- Weight: 1.2grams

Note: Products with logo  or  are made by HY Electronic (Cayman) Limited

### Applications

TVS devices are ideal for the protection of I/O Interfaces, Vcc bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

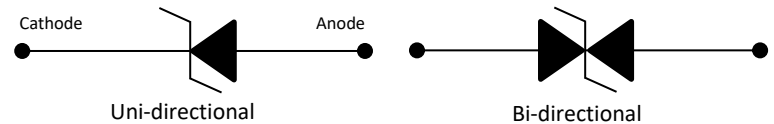
### Package Outline Dimensions



R-6 Package		
Dim	Min	Max
A	25.4	-
B	8.60	9.40
C	1.20	1.40
D	8.60	9.10

All Dimensions in mm

### Device Schematic



### Ordering Information

- Package :R-6
- Packing Option:Tape Box
- Quantity Per Box :0.5Kpcs
- Quantity Per Carton :5Kpcs

### Maximum Ratings (@TA = +25 $^{\circ}$ C, unless otherwise specified.)

#### Absolute Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25 $^{\circ}$ C by 10/1000 $\mu$ s Waveform (Note 1)	PPP	3000	W
Power Dissipation on Infinite Heat Sink at TL=75 $^{\circ}$ C	P <sub>M(AV)</sub>	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2)	I <sub>FSM</sub>	300	A
Operating Temperature Range	T <sub>j</sub>	-55 to +150	$^{\circ}$ C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	$^{\circ}$ C

Note:

1. Non-repetitive current pulse, per Fig.4 and derated above T<sub>j</sub>(initial) =25 $^{\circ}$ C per Fig.1
2. For unidirectional units only

Electrical Characteristics (@T<sub>A</sub> = 25°C, unless otherwise specified.)

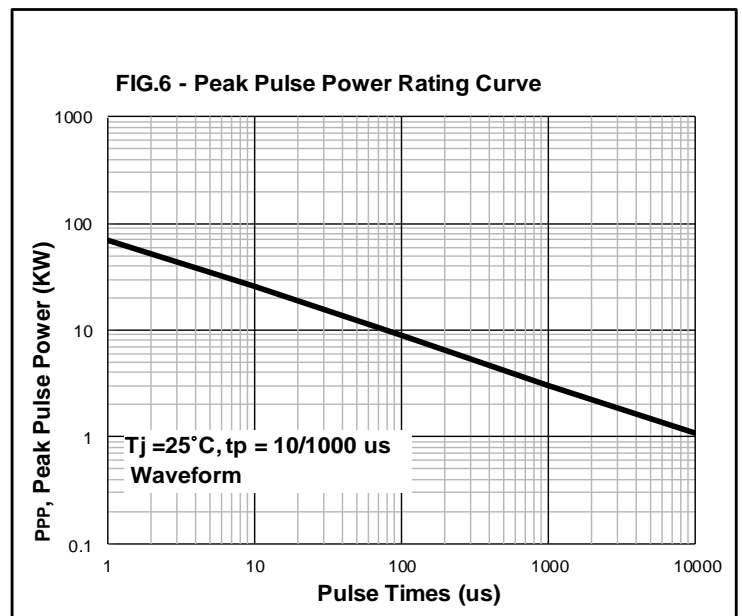
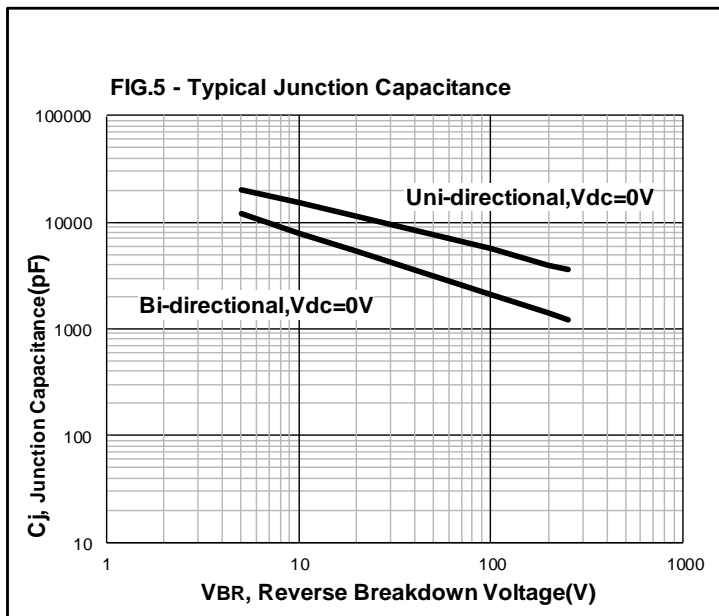
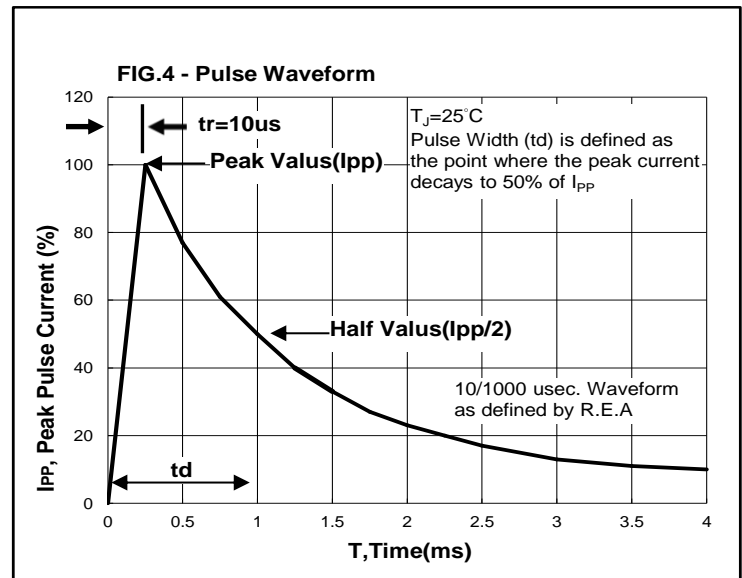
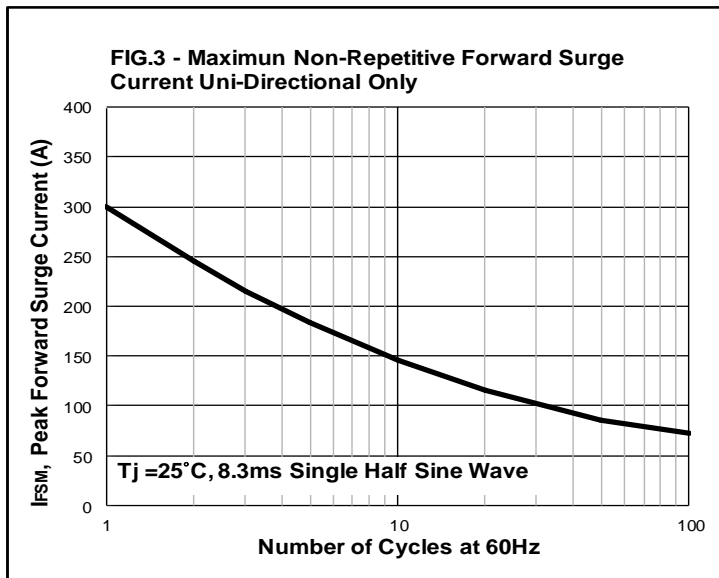
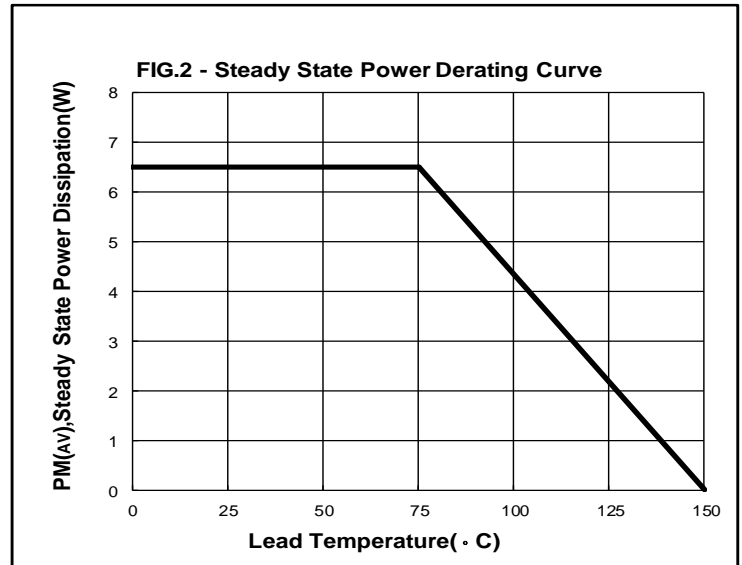
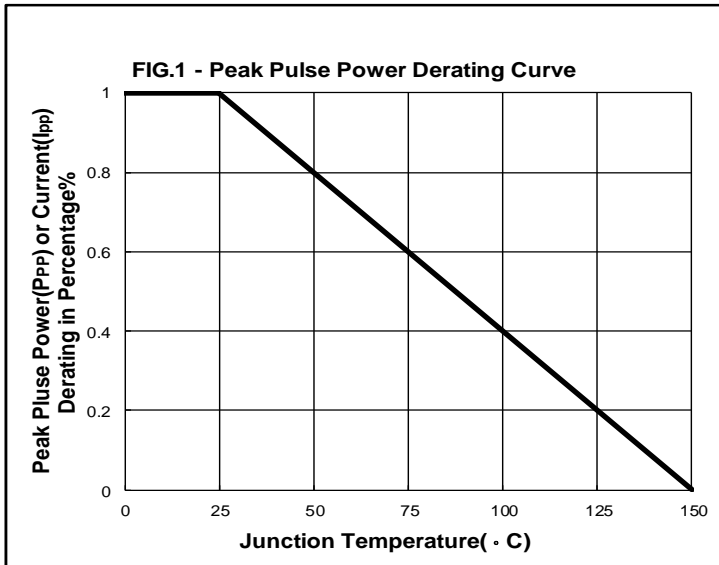
Part Number		Marking Code		Reverse Working Voltage V <sub>RWM</sub> (V)	Reverse Breakdown Voltage V <sub>B</sub> (V)			Reverse Leakage (Max) I <sub>R</sub> ( $\mu$ A) @V <sub>R</sub>	Reverse Clamping Voltage (Max) V <sub>C</sub> (V) @I <sub>PP</sub>	Peak Pulse Current (Max) I <sub>PP</sub> (A)
Uni.	Bi.	Uni.	Bi.		Min.	Max.	@I <sub>T</sub> (mA)			
3KP5.0A	3KP5.0CA	3KP5.0A	3KP5.0CA	5.0	6.40	7.00	10	150	9.2	326.1
3KP6.0A	3KP6.0CA	3KP6.0A	3KP6.0CA	6.0	6.67	7.37	10	100	10.3	291.3
3KP6.5A	3KP6.5CA	3KP6.5A	3KP6.5CA	6.5	7.22	7.98	10	50	11.2	267.9
3KP7.0A	3KP7.0CA	3KP7.0A	3KP7.0CA	7.0	7.78	8.60	10	20	12.0	250.0
3KP7.5A	3KP7.5CA	3KP7.5A	3KP7.5CA	7.5	8.33	9.21	1	10	12.9	232.6
3KP8.0A	3KP8.0CA	3KP8.0A	3KP8.0CA	8.0	8.89	9.83	1	10	13.6	220.6
3KP8.5A	3KP8.5CA	3KP8.5A	3KP8.5CA	8.5	9.44	10.40	1	10	14.4	208.3
3KP9.0A	3KP9.0CA	3KP9.0A	3KP9.0CA	9.0	10.0	11.1	1	10	15.4	194.8
3KP10A	3KP10CA	3KP10A	3KP10CA	10	11.1	12.3	1	5	17.0	176.5
3KP11A	3KP11CA	3KP11A	3KP11CA	11	12.2	13.5	1	5	18.2	164.8
3KP12A	3KP12CA	3KP12A	3KP12CA	12	13.3	14.7	1	2	19.9	150.8
3KP13A	3KP13CA	3KP13A	3KP13CA	13	14.4	15.9	1	2	21.5	139.5
3KP14A	3KP14CA	3KP14A	3KP14CA	14	15.6	17.2	1	1	23.2	129.3
3KP15A	3KP15CA	3KP15A	3KP15CA	15	16.7	18.5	1	1	24.4	123.0
3KP16A	3KP16CA	3KP16A	3KP16CA	16	17.8	19.7	1	1	26.0	115.0
3KP17A	3KP17CA	3KP17A	3KP17CA	17	18.9	20.9	1	1	27.6	108.7
3KP18A	3KP18CA	3KP18A	3KP18CA	18	20.0	22.1	1	1	29.2	102.7
3KP20A	3KP20CA	3KP20A	3KP20CA	20	22.2	24.5	1	1	32.4	92.6
3KP22A	3KP22CA	3KP22A	3KP22CA	22	24.4	26.9	1	1	35.5	84.5
3KP24A	3KP24CA	3KP24A	3KP24CA	24	26.7	29.5	1	1	38.9	77.1
3KP26A	3KP26CA	3KP26A	3KP26CA	26	28.9	31.9	1	1	42.1	71.3
3KP28A	3KP28CA	3KP28A	3KP28CA	28	31.1	34.4	1	1	45.4	66.1
3KP30A	3KP30CA	3KP30A	3KP30CA	30	33.3	36.8	1	1	48.4	62.0
3KP33A	3KP33CA	3KP33A	3KP33CA	33	36.7	40.6	1	1	53.3	56.3
3KP36A	3KP36CA	3KP36A	3KP36CA	36	40.0	44.2	1	1	58.1	51.6
3KP40A	3KP40CA	3KP40A	3KP40CA	40	44.4	49.1	1	1	64.5	46.5
3KP43A	3KP43CA	3KP43A	3KP43CA	43	47.8	52.8	1	1	69.4	43.2
3KP45A	3KP45CA	3KP45A	3KP45CA	45	50.0	55.3	1	1	72.7	41.3
3KP48A	3KP48CA	3KP48A	3KP48CA	48	53.3	58.9	1	1	77.4	38.8
3KP51A	3KP51CA	3KP51A	3KP51CA	51	56.7	62.7	1	1	82.4	36.4
3KP54A	3KP54CA	3KP54A	3KP54CA	54	60.0	66.3	1	1	87.1	34.4
3KP58A	3KP58CA	3KP58A	3KP58CA	58	64.4	71.2	1	1	93.6	32.1
3KP60A	3KP60CA	3KP60A	3KP60CA	60	66.7	73.7	1	1	96.8	31.0
3KP64A	3KP64CA	3KP64A	3KP64CA	64	71.1	78.6	1	1	103.0	29.1
3KP70A	3KP70CA	3KP70A	3KP70CA	70	77.8	86.0	1	1	113.0	26.5
3KP75A	3KP75CA	3KP75A	3KP75CA	75	83.3	92.1	1	1	121.0	24.8
3KP78A	3KP78CA	3KP78A	3KP78CA	78	86.7	95.8	1	1	126.0	23.8
3KP85A	3KP85CA	3KP85A	3KP85CA	85	94.4	104.0	1	1	137.0	21.9
3KP90A	3KP90CA	3KP90A	3KP90CA	90	100	111	1	1	146.0	20.5
3KP100A	3KP100CA	3KP100A	3KP100CA	100	100	111	1	1	162.0	18.5
3KP110A	3KP110CA	3KP110A	3KP110CA	110	111	123	1	1	177.0	16.9
3KP120A	3KP120CA	3KP120A	3KP120CA	120	122	135	1	1	193.0	15.5
3KP130A	3KP130CA	3KP130A	3KP130CA	130	133	147	1	1	209.0	14.4
3KP150A	3KP150CA	3KP150A	3KP150CA	150	144	159	1	1	243.0	12.3
3KP160A	3KP160CA	3KP160A	3KP160CA	160	167	185	1	1	259.0	11.6
3KP170A	3KP170CA	3KP170A	3KP170CA	170	178	197	1	1	275.0	10.9
3KP180A	3KP180CA	3KP180A	3KP180CA	180	189	209	1	1	292.0	10.3
3KP190A	3KP190CA	3KP190A	3KP190CA	190	211	233	1	1	310.0	9.7
3KP200A	3KP200CA	3KP200A	3KP200CA	200	224	247	1	1	329.2	9.3
3KP210A	3KP210CA	3KP210A	3KP210CA	210	237	263	1	1	349.5	8.8
3KP220A	3KP220CA	3KP220A	3KP220CA	220	246	272	1	1	371.1	8.4
3KP250A	3KP250CA	3KP250A	3KP250CA	250	277	306	1	1	425.0	7.1

Note:

1. Suffix "A" denotes 5% tolerance device.
2. Add suffix "CA" after part number to specify bi-directional devices.
3. The IR limit is double for bi-directional devices.



### Rating and Characteristic Curves





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