



# 3KP5.0A ~ 3KP220CA Series

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR PEAK PULSE POWER 3000 Watt

**STAND-OFF VOLTAGE**

**5 to 220 Volt**

**P-600**

Unit : inch(mm)

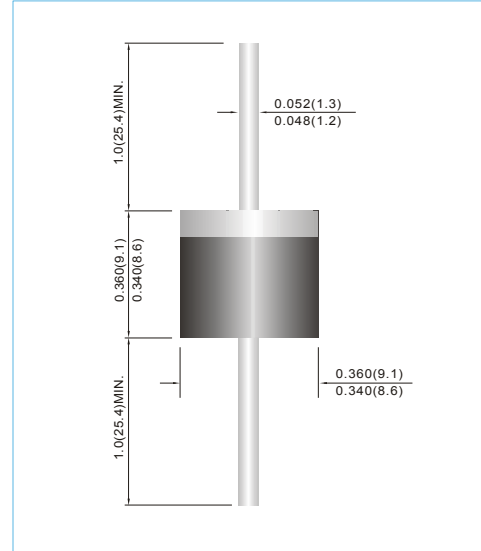
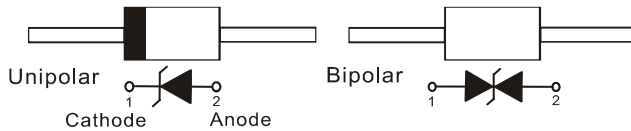
**Recognized File # E210467**

### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated chip junction in P-600 package
- 3000W Peak Pulse Power capability at on  $t_p=10/1000\mu s$  waveform
- Excellent clamping capability
- Low zener impedance
- Repetition rate(Duty Cycle) : 0.05%
- Fast response time: typically less than 1 ps from 0 volts to BV min
- High temperature soldering guaranteed : 260°C/10 seconds/0.375", (9.5mm) lead length/5lbs., (2.3kg) tension
- ESD IEC-61000-4-2 Air  $\pm 30kV$ , Contact  $\pm 30kV$
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### MECHANICAL DATA

- Case: JEDEC P-600 molded plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Approx. Weight: 2.04 grams



### DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use CA Suffix for types 3KP5.0CA thru types 3KP220CA  
Electrical characteristics apply in both directions.

### MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Power Dissipation at $T_A=25^\circ C$ , $T_p=1ms$ (Notes 1)	$P_{PP}$	3000	Watts
Typical Thermal Resistance Junction to Air Lead Lengths 0.375", (9.5mm) (Notes 2)	$R_{\theta JA}$	15	$^\circ C / W$
Peak Pulse Current on $T_p=10/1000\mu s$ waveform (Notes 1)	$I_{PPM}$	see Table	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Notes 3)	$I_{FSM}$	300	Amps
ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact)	$V_{ESD}$	$\pm 30$ $\pm 30$	kV
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +175	$^\circ C$

#### NOTES :

1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ C$  per Fig. 2.
2. Mounted on Copper Leaf area of  $0.79in^2(20mm^2)$ .
3. 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.
4. A transient suppressor is selected according to the working peak reverse voltage ( $V_{RWM}$ ), which should be equal to or greater than the DC or continuous peak operating voltage level.

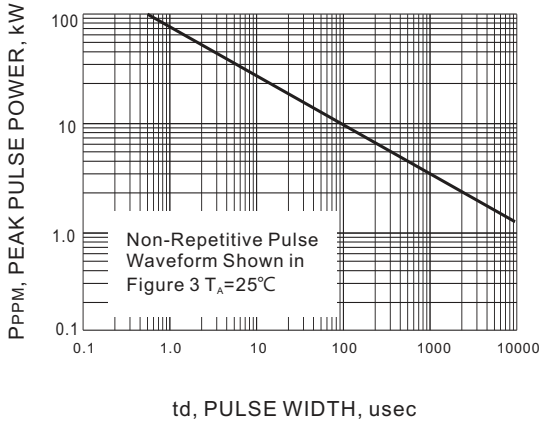


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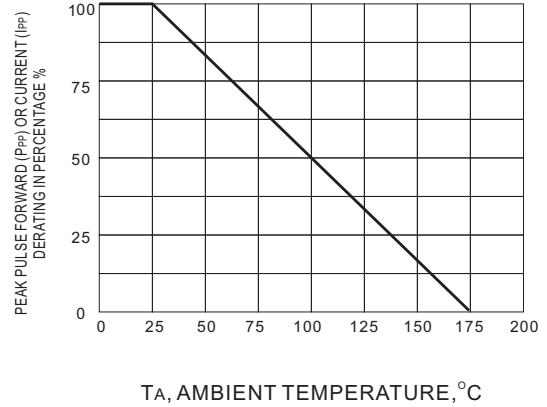
Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000us	Peak Pulse Current 10/1000us	Marking Code	
			V <sub>BR</sub> @ I <sub>T</sub>			I <sub>R</sub> @ V <sub>RWM</sub>					
			Min.	Max.		UNI	BI				
UNI	BI	V	V	V	mA	uA	uA	V	A	UNI	BI
3000W Transient Voltage Suppressor											
3KP5.0A	3KP5.0CA	5	6.4	7.25	10	1000	2000	9.2	326	3KP5.0A	3KP5.0CA
3KP6.0A	3KP6.0CA	6	6.67	7.67	10	1000	2000	10.3	291.3	3KP6.0A	3KP6.0CA
3KP6.5A	3KP6.5CA	6.5	7.22	8.3	10	500	1000	11.2	267.9	3KP6.5A	3KP6.5CA
3KP7.0A	3KP7.0CA	7	7.78	8.95	10	200	400	12	250	3KP7.0A	3KP7.0CA
3KP7.5A	3KP7.5CA	7.5	8.33	9.58	1	100	200	12.9	232.6	3KP7.5A	3KP7.5CA
3KP8.0A	3KP8.0CA	8	8.89	10.23	1	50	100	13.6	220.6	3KP8.0A	3KP8.0CA
3KP8.5A	3KP8.5CA	8.5	9.44	10.82	1	25	50	14.4	208.4	3KP8.5A	3KP8.5CA
3KP9.0A	3KP9.0CA	9	10	11.5	1	10	20	15.4	194.8	3KP9.0A	3KP9.0CA
3KP10A	3KP10CA	10	11.1	12.8	1	3	3	17	176.4	3KP10A	3KP10CA
3KP11A	3KP11CA	11	12.2	14	1	3	3	18.2	184.8	3KP11A	3KP11CA
3KP12A	3KP12CA	12	13.3	15.3	1	3	3	19.9	150.6	3KP12A	3KP12CA
3KP13A	3KP13CA	13	14.4	16.5	1	3	3	21.5	139.4	3KP13A	3KP13CA
3KP14A	3KP14CA	14	15.6	17.9	1	3	3	23.2	129.4	3KP14A	3KP14CA
3KP15A	3KP15CA	15	16.7	19.2	1	3	3	24.4	123	3KP15A	3KP15CA
3KP16A	3KP16CA	16	17.8	20.5	1	3	3	26	115.4	3KP16A	3KP16CA
3KP17A	3KP17CA	17	18.9	21.7	1	3	3	27.6	106.6	3KP17A	3KP17CA
3KP18A	3KP18CA	18	20	23.3	1	3	3	29.2	102.8	3KP18A	3KP18CA
3KP20A	3KP20CA	20	22.2	25.5	1	3	3	32.4	92.6	3KP20A	3KP20CA
3KP22A	3KP22CA	22	24.4	28	1	3	3	35.5	84.4	3KP22A	3KP22CA
3KP24A	3KP24CA	24	26.7	30.7	1	3	3	38.9	77.2	3KP24A	3KP24CA
3KP26A	3KP26CA	26	28.9	33.2	1	3	3	42.1	71.2	3KP26A	3KP26CA
3KP28A	3KP28CA	28	31.1	35.8	1	3	3	45.4	66	3KP28A	3KP28CA
3KP30A	3KP30CA	30	33.3	38.3	1	3	3	48.4	62	3KP30A	3KP30CA
3KP33A	3KP33CA	33	36.7	42.2	1	3	3	53.3	56.2	3KP33A	3KP33CA
3KP36A	3KP36CA	36	40	46	1	3	3	58.1	51.6	3KP36A	3KP36CA
3KP40A	3KP40CA	40	44.4	51.1	1	3	3	64.5	46.4	3KP40A	3KP40CA
3KP43A	3KP43CA	43	47.8	54.9	1	3	3	69.4	43.2	3KP43A	3KP43CA
3KP45A	3KP45CA	45	50	57.5	1	3	3	72.7	41.2	3KP45A	3KP45CA
3KP48A	3KP48CA	48	53.3	61.3	1	3	3	77.4	38.8	3KP48A	3KP48CA
3KP51A	3KP51CA	51	56.7	65.2	1	3	3	82.4	36.4	3KP51A	3KP51CA
3KP54A	3KP54CA	54	60	69	1	3	3	87.1	34.4	3KP54A	3KP54CA
3KP58A	3KP58CA	58	64.4	74.1	1	3	3	93.6	32	3KP58A	3KP58CA
3KP60A	3KP60CA	60	66.7	76.7	1	3	3	96.8	31	3KP60A	3KP60CA
3KP64A	3KP64CA	64	71.1	81.8	1	3	3	103	29.2	3KP64A	3KP64CA
3KP70A	3KP70CA	70	77.8	89.5	1	3	3	113	26.6	3KP70A	3KP70CA
3KP75A	3KP75CA	75	83.3	95.8	1	3	3	121	24.8	3KP75A	3KP75CA
3KP78A	3KP78CA	78	86.7	99.7	1	3	3	126	22.8	3KP78A	3KP78CA
3KP85A	3KP85CA	85	94.4	108.2	1	3	3	137	20.8	3KP85A	3KP85CA
3KP90A	3KP90CA	90	100	115.5	1	3	3	146	20.6	3KP90A	3KP90CA
3KP100A	3KP100CA	100	111	128	1	3	3	162	18.6	3KP100A	3KP100CA
3KP110A	3KP110CA	110	122	140.5	1	3	3	177	16.8	3KP110A	3KP110CA
3KP120A	3KP120CA	120	133	153	1	3	3	193	15.6	3KP120A	3KP120CA
3KP130A	3KP130CA	130	144	165.5	1	3	3	209	14.4	3KP130A	3KP130CA
3KP150A	3KP150CA	150	167	192.5	1	3	3	243	12.4	3KP150A	3KP150CA
3KP160A	3KP160CA	160	178	205	1	3	3	259	11.6	3KP160A	3KP160CA
3KP170A	3KP170CA	170	189	217.5	1	3	3	275	11	3KP170A	3KP170CA
3KP180A	3KP180CA	180	198	230.4	1	3	3	292	10.3	3KP180A	3KP180CA
3KP190A	3KP190CA	190	209	243.2	1	3	3	308	9.7	3KP190A	3KP190CA
3KP200A	3KP200CA	200	220	256	1	3	3	324	9.3	3KP200A	3KP200CA
3KP210A	3KP210CA	210	231	268.8	1	3	3	340	8.8	3KP210A	3KP210CA
3KP220A	3KP220CA	220	242	281.6	1	3	3	356	8.4	3KP220A	3KP220CA



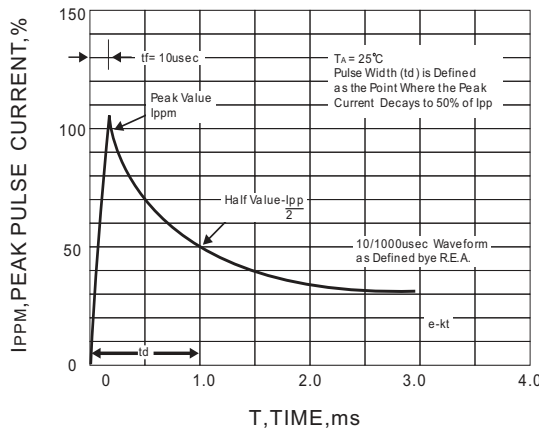
# 3KP5.0A ~ 3KP220CA Series



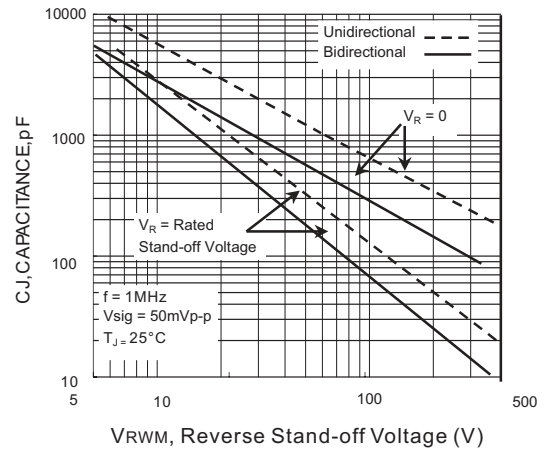
**Fig.1 PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE**



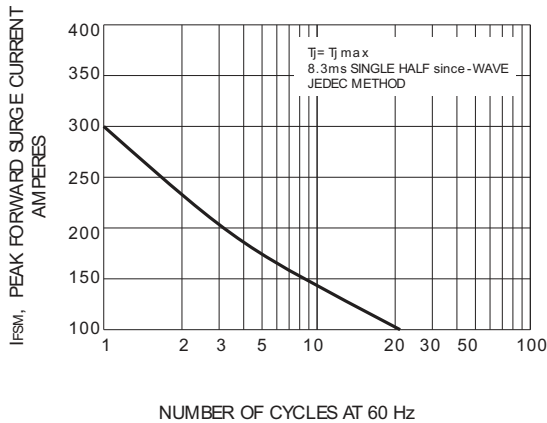
**Fig.2 PULSE DERATING CURVE**



**Fig.3 PULSE WAVEFORM**



**Fig.4 TYPICAL JUNCTION CAPACITANCE**



**Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL**



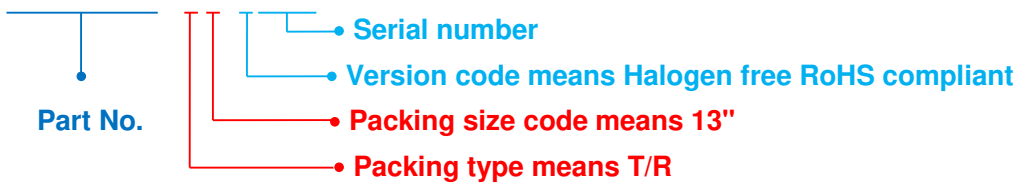
## 3KP5.0A ~ 3KP220CA Series

### Part No.\_packing code\_Version

3KP5.0A\_AY\_00001  
 3KP5.0A\_AY\_10001  
 3KP5.0A\_B0\_00001  
 3KP5.0A\_B0\_10001  
 3KP5.0A\_R2\_00001  
 3KP5.0A\_R2\_10001

For example :

**RB500V-40\_R2\_00001**



Packing Code <b>XX</b>				Version Code <b>X</b>		Serial number <b>XXXX</b>
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HSF Level	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	Halogen free RoHS compliant	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	RoHS compliant	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



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