

## 3000W Transient Voltage Suppressor

### Features

- Glass passivated junction
- 3000W peak pulse power capability at 10/1000µs waveform repetition rate (duty cycles): 0.01%
- Fast response time: typically less than 1.0ps from 0v to VBR min.
- Excellent clamping capability
- Low incremental surge resistance
- High temperature soldering guaranteed:  
260°C/40 seconds, 0.375" (9.5mm) lead length at 5lbs. (2.3kg) tension
- 3KP series is UL recognized under component index. File number E315008
- RoHS Compliant



T6L



### Mechanical Data

<b>Case:</b>	Molded plastic body, T6L
<b>Lead:</b>	Plated axial leads, solderable per MIL-STD-750, Method 2026
<b>Polarity:</b>	Color band denotes the cathode except Bi-directional
<b>Mounting position:</b>	Any
<b>Weight:</b>	0.07 ounce, 2.1 grams

### Maximum Ratings ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	Value	Unit	Conditions
<b>V<sub>WM</sub></b>	Maximum Recurrent Peak Reverse Voltage	5.0 to 220	V	
<b>P<sub>PPM</sub></b>	Peak Pulse Power Dissipation on 10/1000µs Waveform	3000	W	Note 1
<b>P<sub>D</sub></b>	Steady State Power Dissipation on infinite heat sink at TL=75° C	7.0	W	
<b>I<sub>FSM</sub></b>	Peak Forward Surge Current, Uni-directional only	300	A	8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum
<b>V<sub>F</sub></b>	Maximum Instantaneous Forward Voltage at 100A for Uni-directional only	3.5	V	3KP5.0~3KP200
		5.0		3KP210~3KP220
<b>R<sub>thJA</sub></b>	Typical Thermal Resistance to Ambient	40	° C/W	
<b>R<sub>thJL</sub></b>	Typical Thermal Resistance to Leadt	8.0	° C/W	
<b>T<sub>J</sub>,T<sub>STG</sub></b>	Operating Junction and Storage Temperature Range	-55 to +175	° C	

**Notes:** (1) Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig. 2

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## 3KP5.0A - 3KP220CA

### Electrical Characteristics ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

P/N (note3)		Stand-Off Voltage	Breakdown Voltage @ Test Current (note1)			Max. Reverse Leakage Current @ $V_{WM}$	Max. Clamping Voltage @ $I_{PPM}$	Max. Peak Pulse Current
			$V_{BR}$		$I_T$ (mA)			
Uni-Polar	Bi-Polar	$V_{WM}$ (V)	Min.	Max.			$I_D$ ( $\mu A$ ) (note2)	$V_C$ (V)
3KP5.0A	3KP5.0CA	5.0	6.40	7.00	50	5000	9.2	326.1
3KP6.0A	3KP6.0CA	6.0	6.67	7.37	50	5000	10.3	291.3
3KP6.5A	3KP6.5CA	6.5	7.22	7.98	50	2000	11.2	267.9
3KP7.0A	3KP7.0CA	7.0	7.78	8.60	50	1000	12.0	250.0
3KP7.5A	3KP7.5CA	7.5	8.33	9.21	5	250	12.9	232.6
3KP8.0A	3KP8.0CA	8.0	8.89	9.83	5	150	13.6	220.6
3KP8.5A	3KP8.5CA	8.5	9.44	10.40	5	50	14.4	208.3
3KP9.0A	3KP9.0CA	9.0	10.00	11.10	5	20	15.4	194.8
3KP10A	3KP10CA	10.0	11.10	12.30	5	15	17.0	176.5
3KP11A	3KP11CA	11.0	12.20	13.50	5	2	18.2	164.8
3KP12A	3KP12CA	12.0	13.30	14.70	5	2	19.9	150.8
3KP13A	3KP13CA	13.0	14.40	15.90	5	2	21.5	139.5
3KP14A	3KP14CA	14.0	15.60	17.20	5	2	23.2	129.3
3KP15A	3KP15CA	15.0	16.70	18.50	5	2	24.4	123.0
3KP16A	3KP16CA	16.0	17.80	19.70	5	2	26.0	115.4
3KP17A	3KP17CA	17.0	18.90	20.90	5	2	27.6	108.7
3KP18A	3KP18CA	18.0	20.00	22.10	5	2	29.2	102.7
3KP20A	3KP20CA	20.0	22.20	24.50	5	2	32.4	92.6
3KP22A	3KP22CA	22.0	24.40	26.90	5	2	35.5	84.5
3KP24A	3KP24CA	24.0	26.70	29.50	5	2	38.9	77.1
3KP26A	3KP26CA	26.0	28.90	31.90	5	2	42.1	71.3
3KP28A	3KP28CA	28.0	31.10	34.40	5	2	45.4	66.1
3KP30A	3KP30CA	30.0	33.30	36.80	5	2	48.4	62.0
3KP33A	3KP33CA	33.0	36.70	40.60	5	2	53.3	56.3
3KP36A	3KP36CA	36.0	40.00	44.20	5	2	58.1	51.6

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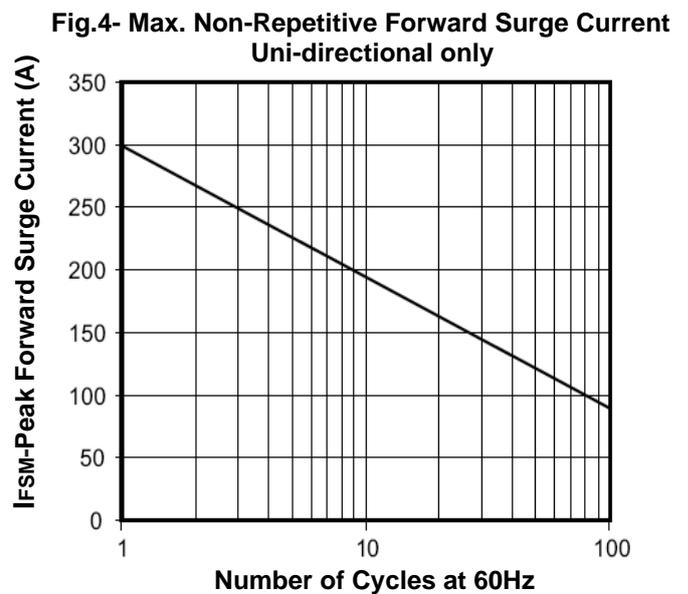
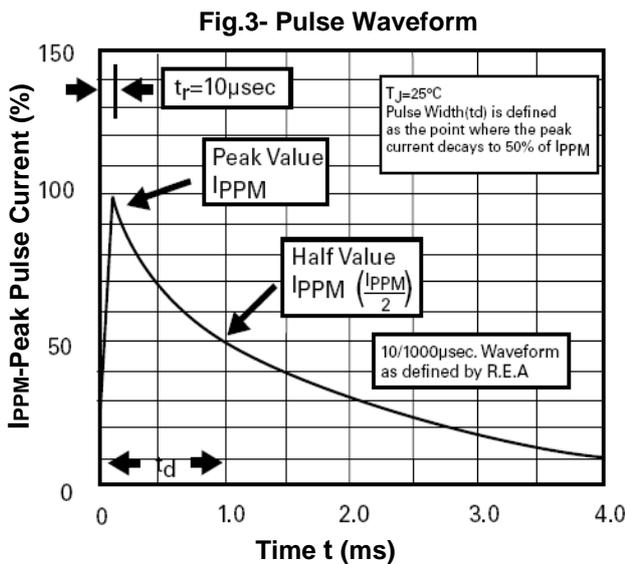
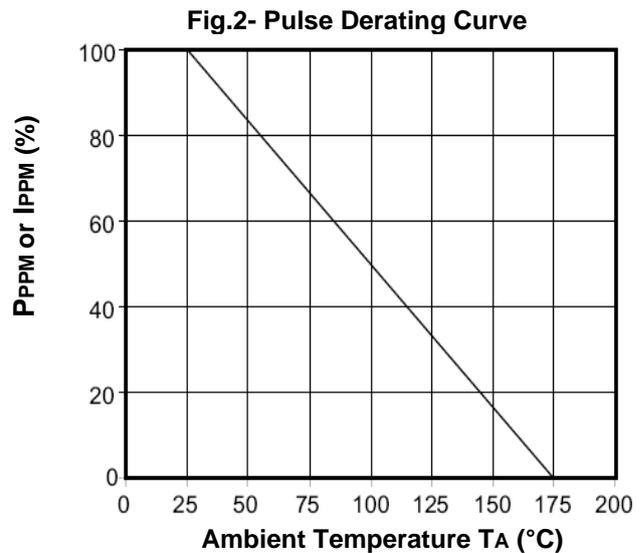
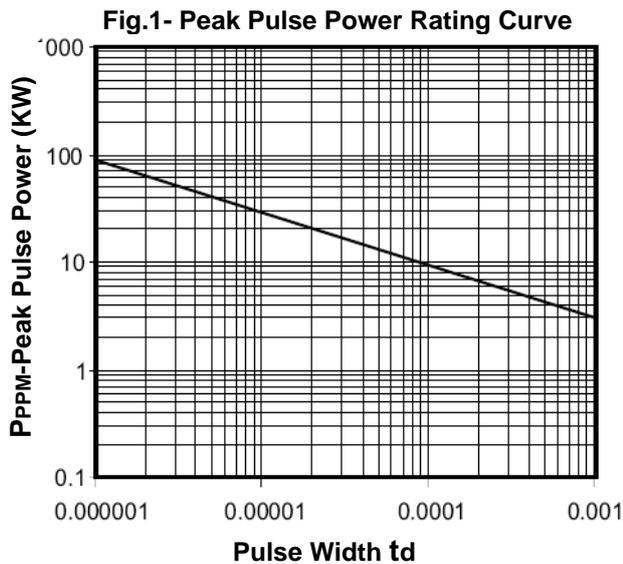
P/N (note3)		Stand-Off Voltage	Breakdown Voltage @ Test Current (note1)			Max. Reverse Leakage Current @ V <sub>WM</sub>	Max. Clamping Voltage @ I <sub>PPM</sub>	Max. Peak Pulse Current
			V <sub>BR</sub>		I <sub>T</sub> (mA)			
Uni-Polar	Bi-Polar	V <sub>WM</sub> (V)	Min.	Max.			I <sub>D</sub> (μA) (note2)	V <sub>C</sub> (V)
3KP40A	3KP40CA	40.0	44.40	49.10	5	2	64.5	46.5
3KP43A	3KP43CA	43.0	47.80	52.80	5	2	69.4	43.2
3KP45A	3KP45CA	45.0	50.00	55.30	5	2	72.7	41.3
3KP48A	3KP48CA	48.0	53.30	58.90	5	2	77.4	38.8
3KP51A	3KP51CA	51.0	56.70	62.70	5	2	82.4	36.4
3KP54A	3KP54CA	54.0	60.00	66.30	5	2	87.1	34.4
3KP58A	3KP58CA	58.0	64.40	71.20	5	2	93.6	32.1
3KP60A	3KP60CA	60.0	66.70	73.70	5	2	96.8	31.0
3KP64A	3KP64CA	64.0	71.10	78.60	5	2	103.0	29.1
3KP70A	3KP70CA	70.0	77.80	86.00	5	2	113.0	26.5
3KP75A	3KP75CA	75.0	83.30	92.10	5	2	121.0	24.8
3KP78A	3KP78CA	78.0	86.70	95.80	5	2	126.0	23.8
3KP85A	3KP85CA	85.0	94.40	104.00	5	2	137.0	21.9
3KP90A	3KP90CA	90.0	100.00	111.00	5	2	146.0	20.5
3KP100A	3KP100CA	100.0	111.00	123.00	5	2	162.0	18.5
3KP110A	3KP110CA	110.0	122.00	135.00	5	2	177.0	16.9
3KP120A	3KP120CA	120.0	133.00	147.00	5	2	193.0	15.5
3KP130A	3KP130CA	130.0	144.00	159.00	5	2	209.0	14.4
3KP150A	3KP150CA	150.0	167.00	185.00	5	2	243.0	12.3
3KP160A	3KP160CA	160.0	178.00	197.00	5	2	259.0	11.6
3KP170A	3KP170CA	170.0	189.00	209.00	5	2	275.0	10.9
3KP180A	3KP180CA	180.0	200.00	221.00	5	2	289.0	10.4
3KP190A	3KP190CA	190.0	211.00	233.00	5	2	310.0	9.7
3KP200A	3KP200CA	200.0	222.00	246.00	5	2	329.2	9.1
3KP210A	3KP210CA	210.0	233.00	258.00	5	2	349.5	8.6
3KP220A	3KP220CA	220.0	244.00	270.00	5	2	371.1	8.1

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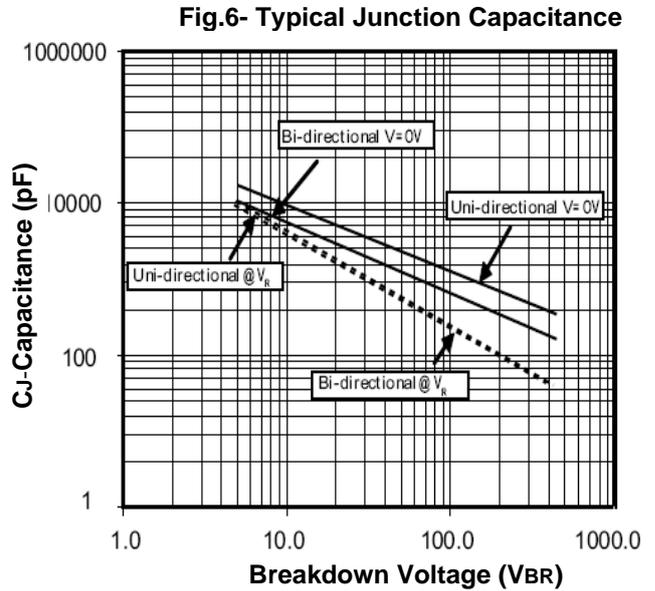
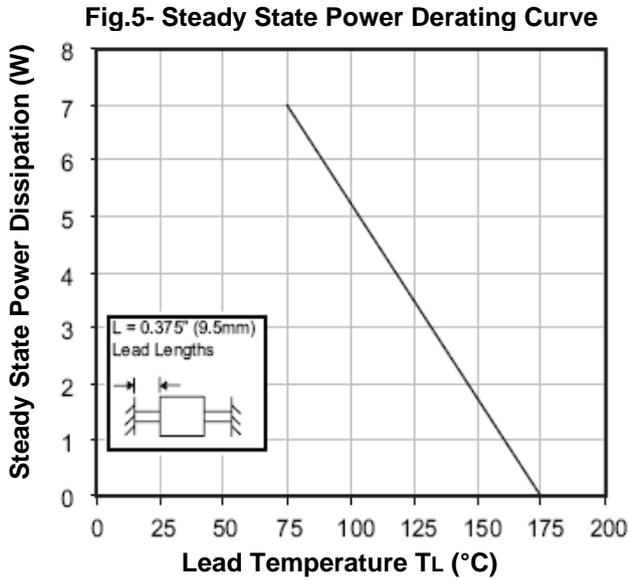
- Note:**
1. Surge current waveform per Fig. 3 and derate per Fig. 2
  2. For Bi-directional types with  $V_{WM}$  of 10 volts and less, the  $I_D$  limit is doubled.
  3. C suffix for Bidirectional use, A suffix for 5% tolerance.

### Typical Characteristics Curves



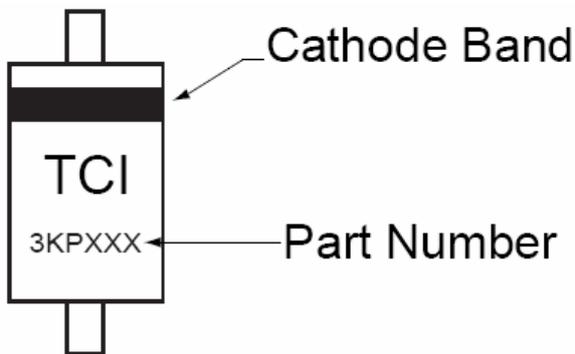
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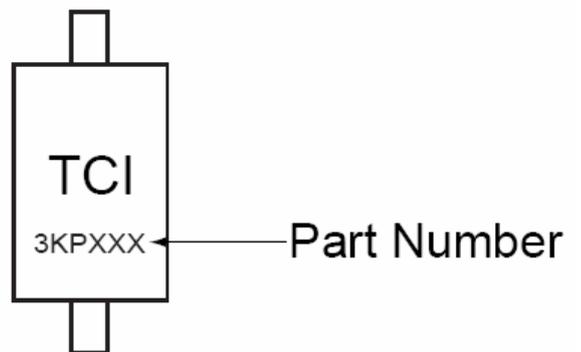


### Marking Information

Uni-directional



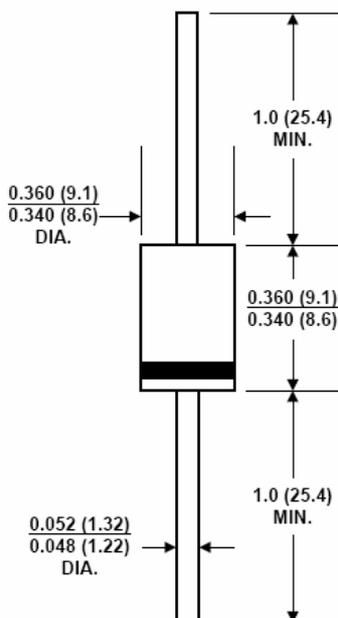
Bi-directional



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## 3KP5.0A - 3KP220CA

### Dimensions in inch (mm)



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T6L

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