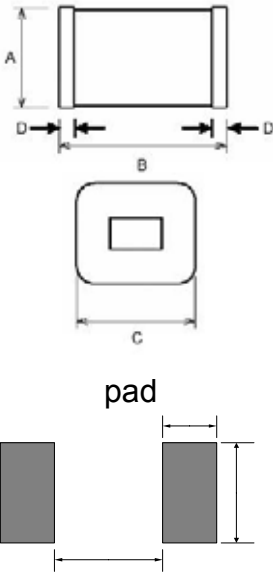
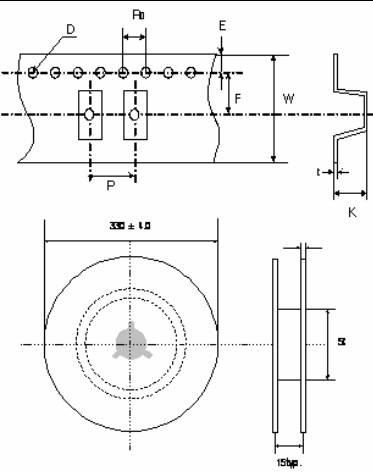


	TYPE	<b>45S</b>	MODEL		PAGE	<b>1/5</b>
CITATION				DATE	<b>Nov. 06, 2008</b>	
SUBJECT	<b>STRUCTURE</b>			REV.	<b>C02</b>	

## 1. . STRUCTURE

NO.	ITEM	DESCRIPTION																
1.1	Main Material	Ceramic cylinder, electrode, inert gas																
1.2	Marking	□□□																
1.3	Appearance	Without dirt and crack, marking should be clear																
1.4	Dimensions	 <p style="text-align: right;">Unit: mm</p> <table border="1" style="float: right; margin-top: 10px;"> <tr> <td>A</td> <td>2.70 ± 0.3</td> </tr> <tr> <td>B</td> <td>4.50 ± 0.3</td> </tr> <tr> <td>C</td> <td>3.20 ± 0.3</td> </tr> <tr> <td>D</td> <td>0.5 ± 0.1</td> </tr> </table>	A	2.70 ± 0.3	B	4.50 ± 0.3	C	3.20 ± 0.3	D	0.5 ± 0.1								
A	2.70 ± 0.3																	
B	4.50 ± 0.3																	
C	3.20 ± 0.3																	
D	0.5 ± 0.1																	
1.5	Taping	 <p style="text-align: right;">unit :mm</p> <table border="1" style="float: right; margin-top: 10px;"> <tr> <td>P</td> <td>8.0 ± 0.1</td> </tr> <tr> <td>P0</td> <td>4.0 ± 0.1</td> </tr> <tr> <td><b>W</b></td> <td>12.0 ± 0.3</td> </tr> <tr> <td>F</td> <td>5.45 ± 0.1</td> </tr> <tr> <td>E</td> <td>1.75 ± 0.1</td> </tr> <tr> <td>D</td> <td>Φ1.55 ± 0.05</td> </tr> <tr> <td>K</td> <td>3.5 ± 0.2</td> </tr> <tr> <td>t</td> <td>0.3 ± 0.1</td> </tr> </table>	P	8.0 ± 0.1	P0	4.0 ± 0.1	<b>W</b>	12.0 ± 0.3	F	5.45 ± 0.1	E	1.75 ± 0.1	D	Φ1.55 ± 0.05	K	3.5 ± 0.2	t	0.3 ± 0.1
P	8.0 ± 0.1																	
P0	4.0 ± 0.1																	
<b>W</b>	12.0 ± 0.3																	
F	5.45 ± 0.1																	
E	1.75 ± 0.1																	
D	Φ1.55 ± 0.05																	
K	3.5 ± 0.2																	
t	0.3 ± 0.1																	
1.6	packing	<p>Quantity: 3000 pcs per reel (13")</p> <p>3 reels per inner box</p> <p>5 inners box per car</p> <p>Inner Box: L x W x H 33.5 x 34 x 6.5 (mm)</p> <p>Carton: L x W x H 36.5 x 36.5 x 36.5(mm)</p>																

	TYPE	<b>45S</b>	MODEL		PAGE	<b>2/5</b>
CITATION				DATE	<b>Nov. 06, 2008</b>	
SUBJECT	<b>ELECTRICAL CHARACTERISTICS</b>			REV.	<b>C02</b>	

## 2. ELECTRICAL CHARACTERISTICS

NO.	ITEM	PERFORMANCE	TEST METHODS
2.0	Standard Conditions		Unless otherwise specified, all tests are made under environmental conditions as given below: Temperature: 5~35°C Relative humidity: 45~85 % RH
2.1	Nominal dc spark-over voltage ( $V_{sdc}$ )	@ V	The Gas Discharge Tubes shall be placed in darkness for at least 24 hours immediately prior to testing and tested in darkness with a voltage which a rate of rise of 100 V/S is used.
2.2	Gas Discharge Tube dc spark-over voltage	@ V	Voltage across the Gas Discharge Tubes measured at a rate of rise of 100 V/S is used.
2.3	Nominal impulse discharge current ( $I_{di}$ )	@ A	For rated discharge current of 8×20μs waveform, Gas Discharge Tubes shall be subjected to 10 discharges at intervals of 1 minute.
		@ A	For rated discharge current of 8×20μs waveform, Gas Discharge Tubes shall be subjected to 300 discharges at intervals of 3 minute.
2.4	Impulse Withstanding Voltage Capacity	@ V	For rated discharge current of 10×700μs waveform, Gas Discharge Tubes shall be subjected to 5 positive and 5 negative discharges at intervals of 3 minute.
2.5	Insulation resistance ( $R_{is}$ )	≥ @ Ω	The measuring source shall be limited to a short current of less than 10mA.
		at @ V	
2.6	Capacitance	≤ @ pF	The capacitance shall be measured between each terminal and every other terminal of Gas Discharge Tubes.

@ See Page 3

	TYPE	<b>45S</b>	MODEL		PAGE	<b>3/5</b>
CITATION				DATE	<b>Nov. 06, 2008</b>	
SUBJECT	<b>ELECTRICAL CHARACTERISTICS</b>			REV.	<b>C02</b>	

Model	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Nominal impulse discharge current (8/20 us)		Impulse Withstanding Voltage Capacity (10/700 us)	Insulation Resistance		Capacitance (1MHz 1V)
	(V <sub>sdc</sub> ) (V)	(V)	(i <sub>di</sub> ) (A)		(V)  (+/- 5times)	V (V)	MΩ	pF
			1 time	300 times				
45S75	75	55~95	2000	100	4000	50	100 Min	0.5 Max.
45S90	90	63~117				50		
45S120	120	84~156				50		
45S150	150	105~195				50		
45S200	200	140~260				100		
45S230	230	161~299				100		
45S300	300	210~390				100		
45S350	350	245~455				100		
45S400	400	280~520				100		
45S420	420	294~546				100		
45S470	470	329~611				100		
45S500	500	350~650				100		
45S600	600	420~780				100		

	TYPE	<b>45S</b>	MODEL		PAGE	<b>4/5</b>
CITATION				DATE	<b>Nov. 06, 2008</b>	
SUBJECT	<b>RELIABILITY</b>			REV.	<b>C02</b>	

### 3. ENVIRONMENTAL CHARACTERISTICS

NO.	ITEM	PERFORMANCE	TEST METHODS
3.1	Damp heat cyclic	Insulation resistance $\geq 1000 \text{ M}\Omega$	IEC 68-2-30, Test D <sub>b</sub> ; 2 cycles, 24hrs/cycle Start conditions: 25±3°C/3±0.5 hrs, 45~75%RH Damp heat, cyclic(first cycle): 55±2°C/12±0.5 hrs, 90~96%RH Recovery conditions: 25±3°C/3±0.5 hrs, 95~100%RH Damp heat, cyclic(remaining cycle): 55±2°C/12±0.5 hrs, 90~96%RH End conditions: 15~35°C/≤3 hrs, 45~75%RH
3.2	Low temperature	V <sub>sdC</sub> , V <sub>si</sub> shall be within the limits in Specifications.	IEC 68-2-1, test Aa Temperature/Duration: -40°C/ 2 hrs

### 4. MECHANICAL CHARACTERISTICS

NO.	Item	Requirements	Test Specifications
4.1	Vibration	1. No visible Damage 2. V <sub>sdC</sub> shall be within the limits in Specifications. 3. Insulation resistance $\geq 1000 \text{ M}\Omega$	IEC 68-2-6, Test F <sub>C</sub> Method B4 Frequency range: 10~500 Hz Amplitude : 0.15mm or 20 m/s <sup>2</sup> Duration : 90minutes
4.2	Solderability	95% of the immersed portion covered with solder	IEC 68-2-20, Test T <sub>a</sub> Method 1 Solder temp. : 235±5°C Immersed time : 2 ±0.5 sec
4.3	Resistance to Soldering Heat	1. No visible Damage 2. V <sub>sdC</sub> shall be within the limits in Specifications.	IEC 68-2-20, Test T <sub>b</sub> Method 1B Solder temp. : 350±5°C Immersed time : 4 ±0.5sec
4.4	Robustness of Terminations	No visible Damage	IEC 68-2-21, Test U <sub>a</sub> Force : 1 kg <sub>f</sub> for 0.8φmm wire 2 kg <sub>f</sub> for 1.0φmm wire Duration: 10 sec
4.5	Sealing	Leak rate $\leq 10^{-7} \text{ bar}\cdot\text{cm}^3\cdot\text{s}^{-1}$	IEC 68-2-17, Test Qk Duration : 600 hours

	TYPE	<b>45S</b>	MODEL		PAGE	<b>5/5</b>
CITATION				DATE	<b>Nov. 06, 2008</b>	
SUBJECT	<b>RELIABILITY</b>			REV.	<b>C02</b>	

## 5. TECHNICAL TERM

No.	Item	Specifications	Description
5.1	Storage conditions	Temperature:-40°C to 100°C Relative humidity: up to 95%	Storage conditions without voltage applied.