

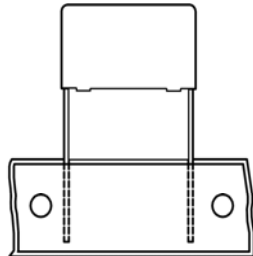
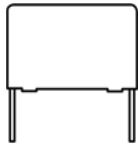


# Series Impedance Film Capacitors

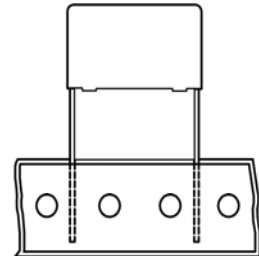
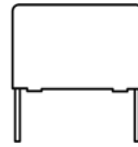
236D

## MKT RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm



15mm



22.5 and 27.5mm

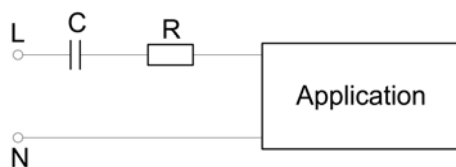
### QUICK REFERENCE DATA

· Capacitance range(E6 series)	: 0.0047 $\mu$ F to 2.2 $\mu$ F
· Capacitance tolerance	: $\pm$ 10%, $\pm$ 20%
· Rated (AC) voltage 50 to 60hz	: 310 Vac
· Climatic category	: 55 / 110 / 56
· Temperature range	: -5585 $^{\circ}$ C 85%RH,240Vac,1000 hours ~ +110 $^{\circ}$ C
· Reference IEC, UL specification	: IEC 60384-14(3rd edition) and UL 60384-14
· Safety approvals	: UL, ENEC
	: UL60384-14
· Potting & Encapsulation material	: Qualified in accordance with UL 94V-0
· Safety Class	: X2

\*Intermediate values of the E12 series are available to special order

FEATURES	APPLICATIONS
<ul style="list-style-type: none"> <li>· 15.0 to 27.5mm lead pitch</li> <li>· Supplied loose in box and taped on reel</li> <li>· Consist of a low-inductive wound cell of Metallized Polyester film</li> <li>· potted in a flame retardant case</li> </ul>	<ul style="list-style-type: none"> <li>· For X2-electromagnetic interference suppression</li> <li>· Specially designed to meet the NEW REQUIREMENTS in new IEC60384-14 Specification (3rd edition) / UL60384-14 / requiring for X2 a 2.5kV peak pulse voltage test</li> <li>· Energy meter</li> <li>· Stable capacitance in damp heat environment 85<math>^{\circ}</math>C 85%RH,240Vac,1000 hours</li> </ul>

### Main application \_ In series with the powerline (capacitive power supply)





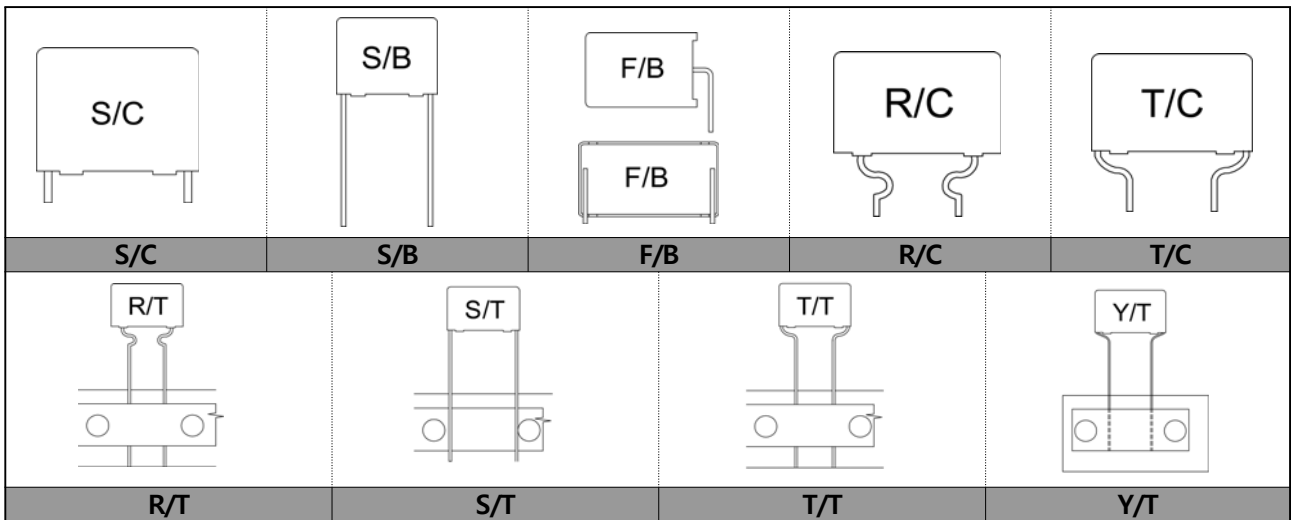
# Series Impedance Film Capacitors

## TYPE DESIGNATION

The type designation is specified as the following form.

<u>236D</u>	<u>310V</u>	<u>334</u>	<u>K</u>	<u>(1785)</u>	<u>S/C</u>	<u>3.5</u>	mm
①	②	③	④	⑤	⑥	⑦	⑧



- ① Series name
- ② Rated voltage(Vac)
- ③ Capacitance : 33 : Capacitance / 4 : Unit( $10^4$  )  
 $33 \times 10^4 = 330000\text{pF} = 330\text{nF} = 0.33\mu\text{F}$
- ④ Tolerance
- ⑤ Case Size (Dimension)  
**17** : L(Length) : Abandoned after the decimal point, and the nearest integer  
 Example : **17.5**  
**85** : T(Thickness) : Shooting a point between two digitsh  
 Example : **8.5**
- ⑥ Style : **S/C** = Straight Cut    ⑦ L : 3.5    ⑧ Unit



## Series Impedance Film Capacitors

**236D**

### SAFETY APPROVALS

REQUIREMENTS of the "IEC-60384-14-3 <sup>rd</sup> edition for X2 2.5kV peak pulse voltage test Climatic category : 55/110/56 Maximum application temperature : 110°C			
Approvals	File numbers	Approvals	File numbers
UL	E199061	ENEC	SE / 06107-4
			

### SPECIFIC REFERENCE DATA FOR 310Vac

Tangent of loss angle	at 1 khz	at 10 khz
$C \leq 1\mu F$ $C > 1\mu F$	$\leq 80 \times 10^{-4}$ $\leq 80 \times 10^{-4}$	$\leq 150 \times 10^{-4}$ -
Rated voltage pulse slope (dV/dt) <sub>R</sub>	100V/ $\mu$ s	
R between leads, for $C \leq 0.33 \mu F$	> 15,000 M $\Omega$	
RC between leads, for $C > 0.33 \mu F$	> 5000s	
Withstanding(DC) Voltage (cut-off current 10mA)	4.3* V <sub>Rac</sub> ,1 min	
Withstanding(AC) Voltage between leads and case	2400V ;1 min	
Maximun application temperature	110°C	
Rated AC voltage (V <sub>rac</sub> )	310 V <sub>ac</sub>	

**Series Impedance  
Film Capacitors**

236D

Pitch = 15.0 ± 0.5mm

Cap(μF)	Dimension(mm)			Pitch ±0.4mm	dt ±0.05mm
	L	H	T		
0.0047	17.5	11.0	5.0	15.0	0.6
0.0068	17.5	11.0	5.0	15.0	0.6
0.01	17.5	11.0	5.0	15.0	0.6
0.015	17.5	11.0	5.0	15.0	0.6
0.018	17.5	11.0	5.0	15.0	0.6
0.022	17.5	11.0	5.0	15.0	0.6
0.027	17.5	11.0	5.0	15.0	0.6
0.033	17.5	11.0	5.0	15.0	0.6
0.039	17.5	12.0	6.0	15.0	0.6
0.047	17.5	11.0	5.0	15.0	0.6
0.047	17.5	12.0	6.0	15.0	0.6
0.056	17.5	12.0	6.0	15.0	0.6
0.068	17.5	11.0	5.0	15.0	0.6
0.068	17.5	13.5	7.0	15.0	0.6
0.082	17.5	13.5	8.5	15.0	0.6
0.1	17.5	11.0	5.0	15.0	0.6
0.1	17.5	12.0	6.0	15.0	0.6
0.1	26.0	15.5	6.0	15.0	0.6
0.12	17.5	13.5	8.5	15.0	0.6
0.15	17.5	12.0	6.0	15.0	0.6
0.15	17.5	13.5	8.5	15.0	0.6
0.22	17.5	13.5	8.5	15.0	0.6
0.22	17.5	16.5	10.0	15.0	0.6
0.33	17.5	16.5	10.0	15.0	0.6

**Series Impedance****Film Capacitors****236D**

Pitch = 22.5 ± 0.5mm

Cap(μF)	Dimension(mm)			Pitch ±0.4mm	dt ±0.05mm
	L	H	T		
0.1	26.0	15.5	6.0	22.5	0.7
0.15	26.0	15.5	6.0	22.5	0.7
0.15	26.0	16.5	7.0	22.5	0.7
0.18	26.0	16.5	7.0	22.5	0.7
0.22	26.0	15.5	6.0	22.5	0.7
0.22	26.0	18.0	8.5	22.5	0.7
0.22	26.0	18.5	8.5	22.5	0.7
0.27	26.0	19.5	10.0	22.5	0.7
0.33	26.0	15.5	6.0	22.5	0.7
0.33	26.0	19.5	10.0	22.5	0.7
0.47	26.0	18.0	8.5	22.5	0.7
0.47	26.0	22.0	12.0	22.5	0.7
0.68	26.0	19.5	10.0	22.5	0.7
1.0	26.0	22.0	12.0	22.5	0.7
1.5	26.0	22.0	12.0	22.5	0.7

**Series Impedance****Film Capacitors****236D**

Pitch = 27.5 ± 0.5mm

Cap(μF)	Dimension(mm)			Pitch ±0.4mm	dt ±0.05mm
	L	H	T		
0.39	31.0	21.0	11.0	27.5	0.7
0.47	31.0	19.0	9.0	27.5	0.7
0.47	31.0	21.0	11.0	27.5	0.7
0.56	31.0	21.0	11.0	27.5	0.7
0.68	31.0	19.0	9.0	27.5	0.7
0.68	31.0	23.0	13.0	27.5	0.7
0.82	31.0	23.0	13.0	27.5	0.7
1.0	31.0	23.0	13.0	27.5	0.7
1.0	31.0	25.0	15.0	27.5	0.7
1.5	31.0	23.0	13.0	27.5	0.7
1.5	31.0	28.0	18.0	27.5	0.7
2.2	31.0	31.0	21.0	27.5	0.7



# Series Impedance Film Capacitors

236D

## MARKING

Position	Marking	Explanation
TOP	<p>The diagram shows a capacitor with the following markings: 330 nK 310V, 236D MKT X2, SIC, 1701, 55/110/56, and safety certification marks. Numbered callouts 1-10 point to these specific markings.</p>	<p>① Capacitance : (330nF)</p> <p>② Tolerance on rated capacitance (<math>\pm 10\%</math>)</p> <p>③ Rated voltage(Vac)</p> <p>④ Series name</p> <p>⑤ Metallized polyester film(MKT)</p> <p>⑥ Safety class</p> <p>⑦ Manufacture' s Series name</p> <p>⑧ Year &amp; Week of manufacture</p> <p>⑨ Safety Certification Mark(C UL US, ENEC)</p> <p>⑩ Climatic category Minimum temperature -55 / maximum temperature +110/56 day test</p>

Position	Marking	Explanation
Front	<p>The diagram shows the front view of a capacitor with the text 'NO Marking' written on its surface.</p>	<p>· NO Marking</p>

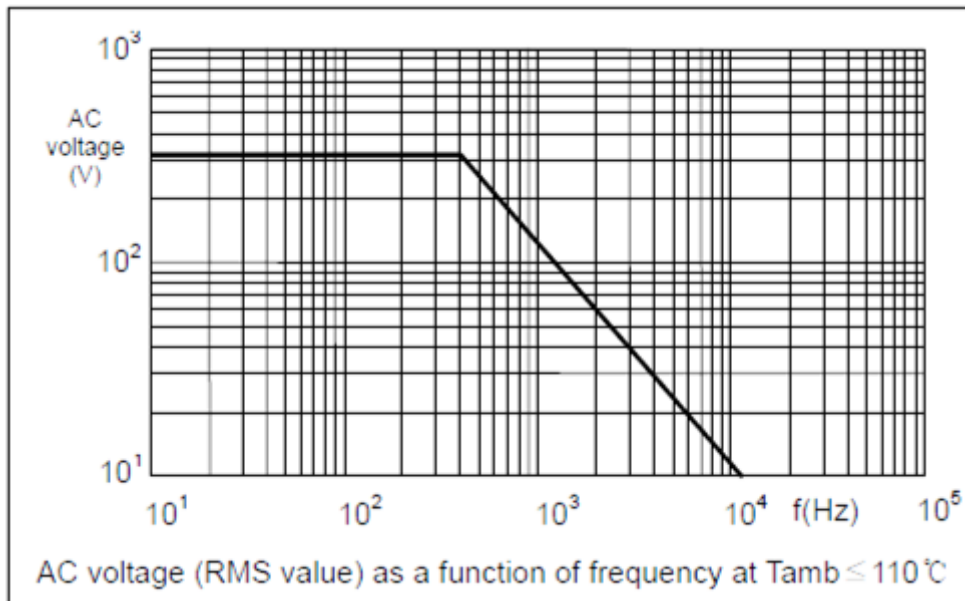


## Series Impedance

### Film Capacitors

236D

#### Maximum RMS Voltage as a function of frequency



#### APPLICATION NOTES AND LIMITING CONDITIONS

- . For X2 electromagnetic interference suppression in standard across the line applications (50 Hz / 60 Hz) with a maximum mains voltage of 310VAC
- . These capacitors are suitable for the application as voltage-division impedance in series with the mains (50 Hz / 60 Hz) with a maximum mains voltage of URAC.