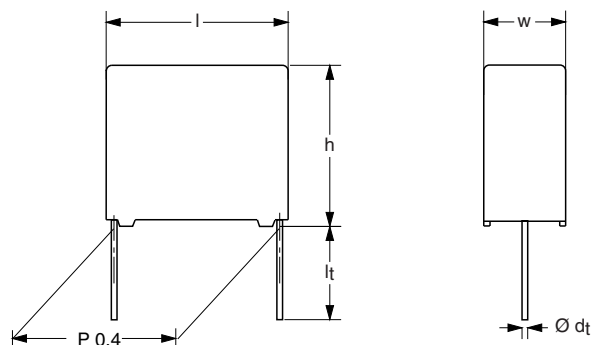


# Interference Suppression Film Capacitors

## MKP Radial Potted Type



**NO FOCUS PRODUCT: USE MKP 339 X2**

### APPLICATIONS

X2 class

For X2 electromagnetic interference suppression in across the line applications (50/60 Hz) with a maximum mains voltage of 275 VAC.

For application limitations please refer page 5.

### REFERENCE STANDARDS

"IEC 60384-14 2nd edition and EN 132400"

"IEC 60065, pass. flamm. class B"

250 V: CSA-C22.2 No 1; UL1414

275 V: ENEC; CQC;

### MARKING

C-value; tolerance; rated voltage; sub-class; manufacturer's type designation; code for dielectric material; manufacturer location; manufacturer's emblem; year and week

### DIELECTRIC

Polypropylene film

### ELECTRODES

Metallized film

### CONSTRUCTION

Mono construction

### RATED VOLTAGE

AC 275 V; 50 to 60 Hz

### FEATURES

15 to 22.5 mm lead pitch. Supplied loose in box and taped on reel

Lead (Pb)-free product

RoHS compliant product



**RoHS**  
COMPLIANT

### PERMISSIBLE DC VOLTAGE

DC 630 V

### ENCAPSULATION

Plastic case, epoxy resin sealed, flame retardant UL-class 94 V-0

### CLIMATIC TESTING CLASS ACC. TO EN 60068-1

55/100/56/B

### CAPACITANCE RANGE (E12 SERIES)

E12 series 0.01 to 0.47  $\mu$ F

Preferred values acc. to E6

### CAPACITANCE TOLERANCE

$\pm 20 \%$ ;  $\pm 10 \%$

### LEADS

Tinned wire

### RATED TEMPERATURE

100 °C

### MAXIMUM APPLICATION TEMPERATURE

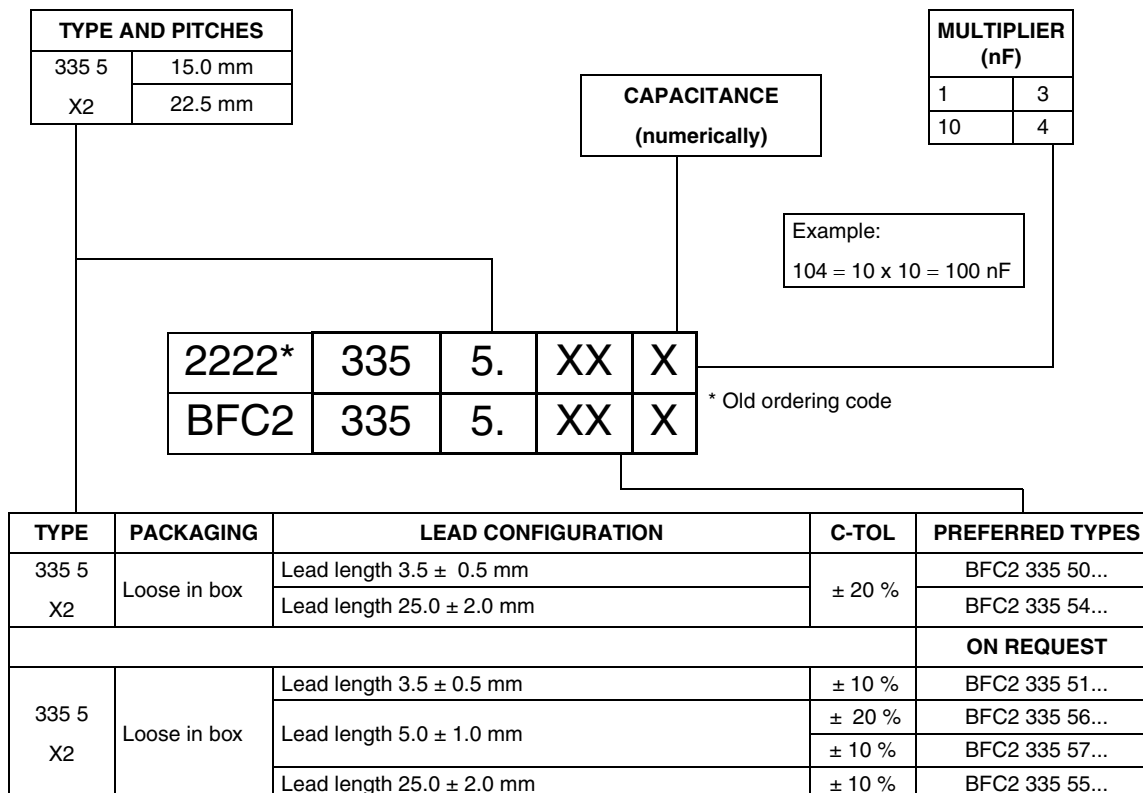
100 °C

### DETAIL SPECIFICATION

For more detailed data and test requirements, contact:

[RFI@vishay.com](mailto:RFI@vishay.com)

## COMPOSITION OF CATALOG NUMBER

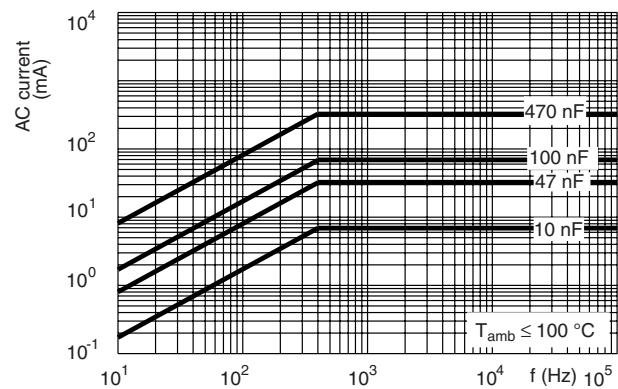
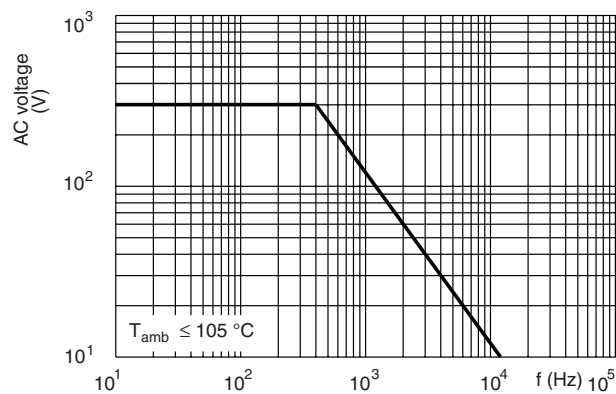


## SPECIFIC REFERENCE DATA MKP 335 5 275 Vac

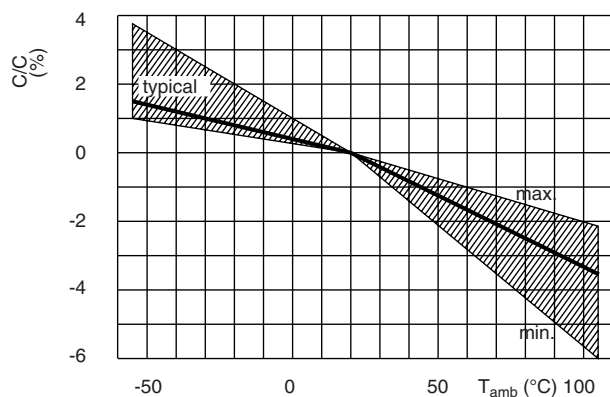
DESCRIPTION	VALUE	
Tangent of loss angle: $C \leq 100 \text{ nF}$ $100 \text{ nF} < C \leq 470 \text{ nF}$	at 1 kHz	at 10 kHz
	$\leq 7 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
	$\leq 10 \times 10^{-4}$	$\leq 20 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 385 Vdc	100 V/μs	
R between leads, for $C \leq 0.33 \text{ μF}$ at 100 V; 1 min	> 15 000 MΩ	
RC between leads, for $C > 0.33 \text{ μF}$ at 100 V; 1 min	> 5000 s	
R between leads and case; 100 V; 1 min	> 30 000 MΩ	
Withstanding voltage DC (cut off current 10 mA); rise time 100 V/s	2200 V; 1 min	
Withstanding voltage AC between leads and case	2050 V; 1 min	

 $U_{Rac} = 275 \text{ V}$ ;  $C\text{-tol} = \pm 20 \%$ 

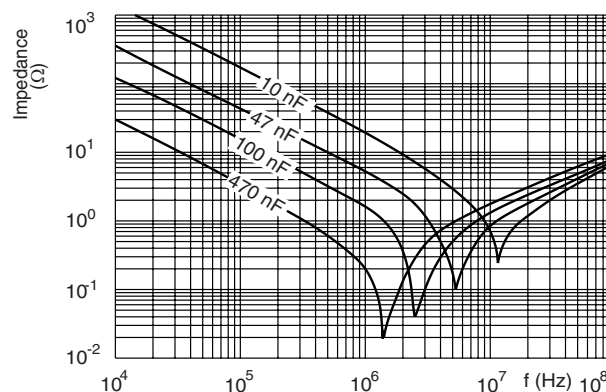
C (μF)	DIMENSIONS <sup>0</sup> w x h x l (mm)	MASS (g)	CATALOG NUMBER BFC2 335 ..... AND PACKAGING				
			LOOSE IN BOX				
			Short leads			Long leads	
			l <sub>t</sub> = 3.5 ± 0.5 mm	l <sub>t</sub> = 5.0 ± 1.0 mm	SPQ	l <sub>t</sub> = 25.0 ± 2.0 mm	
			Last 5 digits of catalog number	Last 5 digits of catalog number		Last 5 digits of catalog number	SPQ
Pitch = 15.0 ± 0.4 mm; d <sub>t</sub> = 0.60 ± 0.06 mm							
0.01 0.015 0.022 0.033	5.0 x 11.0 x 17.5	1.1	50103 50153 50223 50333	56103 56153 56223 56333	1250	54103 54153 54223 54333	1000
0.047	6.0 x 12.0 x 17.5	1.4	50473	56473	1000	54473	1000
Pitch = 15.0 ± 0.4 mm; d <sub>t</sub> = 0.80 ± 0.08 mm							
0.068 0.1 0.15	7.0 x 13.5 x 17.5 8.5 x 15.0 x 17.5 10.0 x 16.5 x 17.5	1.8 2.3 3.0	50683 50104 50154	56683 56104 56154	750 750 500	54683 54104 54154	500 500 450
Pitch = 22.5 ± 0.4 mm; d <sub>t</sub> = 0.80 ± 0.08 mm							
0.22 0.33 0.47	8.5 x 18.0 x 26.0 10.0 x 19.5 x 26.0 12.0 x 22.0 x 26.0	4.1 5.0 6.9	50224 50334 50474	56224 56334 56474	200 200 150	54224 54334 54474	250 200 200

**Note**<sup>(1)</sup> Specified dimensions only valid for  $\pm 20 \%$  tolerance values.**MAXIMUM RMS VOLTAGE AND AC CURRENT (SINEWAVE) AS A FUNCTION OF FREQUENCY**





## CAPACITANCE



## IMPEDANCE



## APPROVALS

COUNTRY	SPECIFICATION	ELECTRICAL VALUES	FILE NUMBERS	APPROVAL MARK
U.S.A. (for AC 250 V)	UL1414	10 nF to 1.0 $\mu$ F	E112471	
Canada (for AC 250 V)	CSA-C22.2 No.1	10 nF to 1.0 $\mu$ F	1104861 (LR94054-16)	
China (for AC 275 V)	CQC	10 nF to 1.5 $\mu$ F	CQC02001001482 (Shanghai factory) CQC03001004371 (Roeselare factory)	
CB TEST CERTIFICATE (for AC 275 V)		10 nF to 1.5 $\mu$ F: 55/100/56/B	FI 1185 A2	
Europe (for AC 275 V)	EN132400 IEC 60384-14 2 <sup>nd</sup> edition	10 nF to 1.5 $\mu$ F	14216	

## APPLICATION NOTES

- For X2 electromagnetic interference suppression in **across the line applications** (50/60 Hz) with a maximum mains voltage of 275 Vac.
- These capacitors are not intended for continuous pulse applications. For these situations, capacitors of the AC and pulse programs must be used.
- These capacitors are not intended for series impedance application. For these situations in case safety approvals are requested, please refer to our special capacitors of 1772 series with internal series connection.
- The maximum ambient temperature must not exceed 100 °C.
- Rated voltage pulse slope:  
If the pulse voltage is lower than the rated voltage, the values of the specific reference data can be multiplied by 385 Vdc and divided by the applied voltage.



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