

Interference Suppression Film Capacitors

MKP Radial Potted Type

APPLICATIONS

X2 class

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

These capacitors are not intended for continuous pulse applications. For these situations, capacitors of the AC and Pulse program must be used.

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: CSA-C22.2 No 8; ENEC; CQC

305 V: UL1283

MARKING

C-value; tolerance; rated voltage; sub-class; manufacturer's type designation; code for dielectric material, only for pitch $\geq 15\text{mm}$; manufacturer location; year and week

DIELECTRIC

Polypropylene film

ELECTRODES

Metallized film

CONSTRUCTION

Mono construction

RATED VOLTAGE

AC 275 V; 50 to 60 Hz

PERMISSIBLE DC VOLTAGE

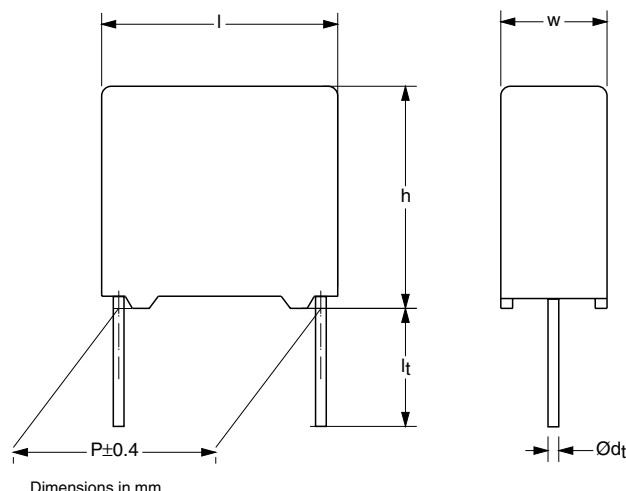
DC 630 V

ENCAPSULATION

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

CLIMATIC TESTING CLASS ACC. TO EN 60068-1

55/105/56/B



CAPACITANCE RANGE (E12 SERIES)

E12 series 0.001 to 2.2 μF

Preferred values acc. to E6

CAPACITANCE TOLERANCE

$\pm 20\%$; $\pm 10\%$; $\pm 5\%$

LEADS

Tinned wire



RATED TEMPERATURE

105 °C

MAXIMUM APPLICATION TEMPERATURE

105 °C

FEATURES

10 to 27.5 mm lead pitch. Supplied loose in box, taped on reel

Lead (Pb)-free product



DETAIL SPECIFICATION

For more detailed data and test requirements

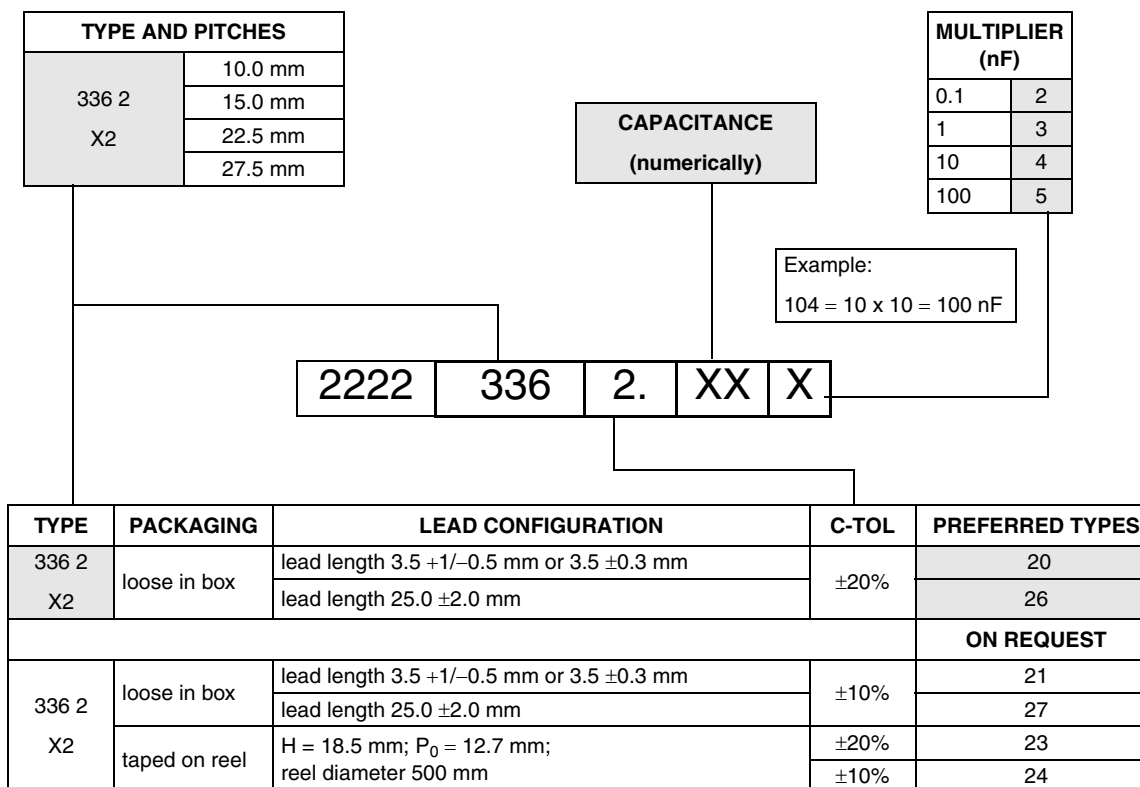
see "Type detail specification HQN-384-14/108"

MKP 336 2 X2

Vishay BCcomponents Interference Suppression Film Capacitors
MKP Radial Potted Type



COMPOSITION OF CATALOG NUMBER



SPECIFIC REFERENCE DATA MKP 336 2 275 VAC

DESCRIPTION	VALUE		
Tangent of loss angle: C < 470 nF 470 nF ≤ C ≤ 1 μF C > 1 μF	at 1 kHz	at 10 kHz	at 100 kHz
	≤10 × 10 ⁻⁴	≤20 × 10 ⁻⁴	≤100 × 10 ⁻⁴
	≤20 × 10 ⁻⁴	≤70 × 10 ⁻⁴	—
	≤30 × 10 ⁻⁴	—	—
Rated voltage pulse slope (dU/dt) _R at 385 V (DC)	100 V/μs		
R between leads, for C ≤ 0.33 μF at 100 V; 1 minute	>15000 MΩ		
RC between leads, for C > 0.33 μF at 100 V; 1 minute	>5000 s		
R between leads and case; 100 V; 1 minute	>30000 MΩ		
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s: C ≤ 1 μF C > 1 μF	2200 V; 1 minute		
	1800 V; 1 minute		
	2050 V; 1 minute		
Withstanding (AC) voltage between leads and case	2050 V; 1 minute		

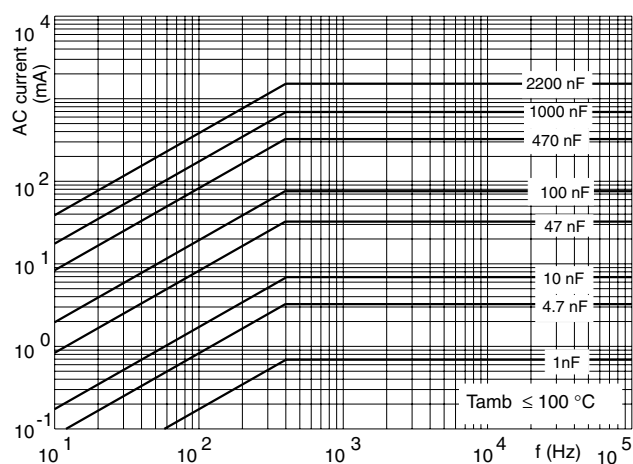
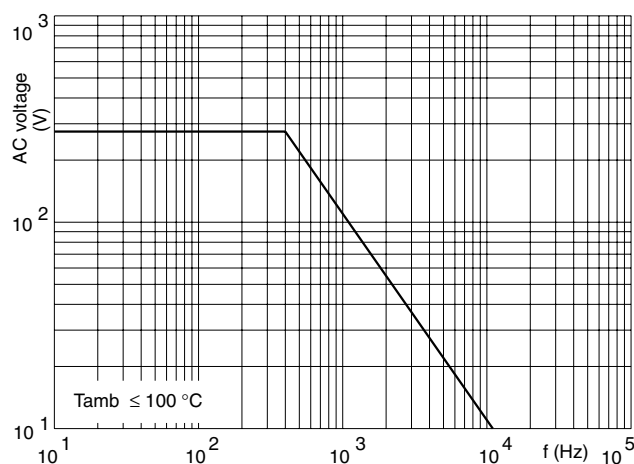
**U_{Rac} = 275 V; C-tol = ±20%**

C (μF)	DIMENSIONS ⁽¹⁾ w × h × l (mm)	MASS (g)	CATALOG NUMBER 336 AND PACKAGING							
			LOOSE IN BOX				REEL			
			l _t = 3.5 +1/−0.5 mm ⁽²⁾		l _t = 25.0 ±2.0 mm		H = 18.5 mm; P ₀ = 12.7 mm			
			last 5 digits of catalog number	SPQ	last 5 digits of catalog number	SPQ	last 5 digits of catalog number	SPQ		
Pitch = 10.0 ±0.4 mm; d _t = 0.60 ±0.06 mm										
0.001 0.0015 0.0022	4.0 × 10.0 × 12.5	0.6	20102	1000	26102	1250	23102	1400		
20152			26152		23152					
20222			26222		23222					
0.0033 0.0047 0.0068 0.01 0.015 0.022			4.0 × 10.0 × 12.5	0.6	20332	1000	26332	1000	23332	1100
20472					26472		23472			
20682					26682		23682			
20103					26103		23103			
20153					26153		23153			
20223	26223	23223								
0.033	20333	750	26333	750	23333	900				
Pitch = 15.0 ±0.4 mm; d _t = 0.60 ±0.06 mm										
0.01 0.015 0.022 0.033 0.047 0.068	5.0 × 11.0 × 17.5	1.2	29001	1000	29097	1000	29004	1100		
29011			29071		29014					
29021			29076		29024					
29031			29082		29034					
20473			26473		23473					
20683	26683	23683								
0.1	6.0 × 12.0 × 17.5	1.4	20104	1000	26104	500	23104	800		
0.15			20154	1000	26154	500	23154	650		
Pitch = 15.0 ±0.4 mm; d _t = 0.80 ±0.08 mm										
0.22	7.0 × 13.5 × 17.5	1.9	20224	500	26224	500	23224	600		
Pitch = 22.5 ±0.4 mm; d _t = 0.80 ±0.08 mm										
0.15	6.0 × 15.5 × 26.0	2.9	29041	300	29087	500	29044	600		
0.22			29051	200	29093	500	29053	550		
0.33			20334	200	26334	500	23334	450		
0.47	7.0 × 16.5 × 26.0	3.2	20474	200	26474	500	23474	400		
Pitch = 27.5 ±0.4 mm; d _t = 0.80 ±0.08 mm										
0.47	9.0 × 19.0 × 31.0	5.5	29055	100	29095	150				
0.68			20684	100	26684	125				
1		7.8	20105	100	26105	125				
1.5		10.4	20155	100	26155	125				
2.2		12.8	20225	100	26225	75				

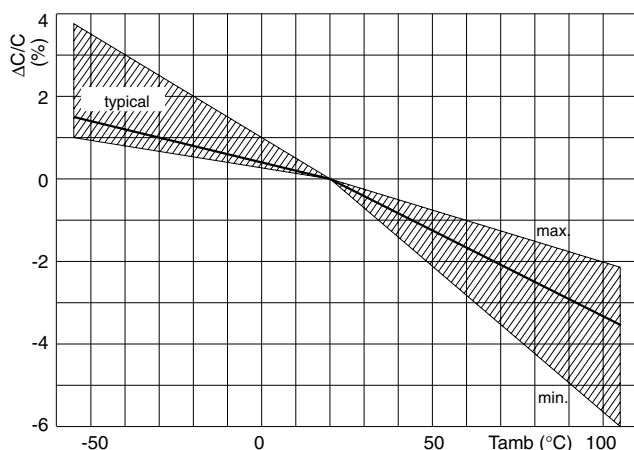
Notes

- Specified dimensions only valid for ±20% tolerance values.
- l_t = 3.5 ±0.3 mm for pitch = 15 mm; 22.5 mm and 27.5 mm.

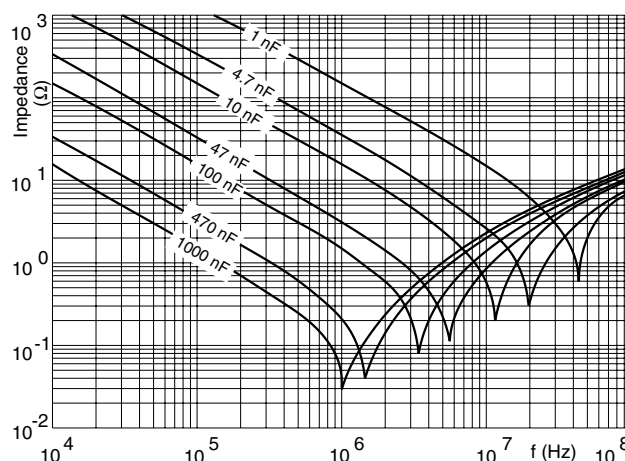
MAXIMUM RMS VOLTAGE AND AC CURRENT (SINEWAVE) AS A FUNCTION OF FREQUENCY



CAPACITANCE



IMPEDANCE



APPROVALS

COUNTRY	SPECIFICATION	ELECTRICAL VALUES	FILE NUMBERS	APPROVAL MARK
U.S.A. and Canada (for AC 250 V)	UL1414 and CSA-C22.2 No.1	1 nF to 1 μF	E112471	
U.S.A. (for AC 305 V)	UL1283	1 nF to 2.2 μF	E109565	
Canada (for AC 275 V)	CSA-C22.2 No.8	1 nF to 2.2 μF	1438188	
China	CQC	1 nF to 2.2 μF	CQC04001009253 (Roeselare) CQC04001009254 (Shanghai) CQC04001009262 (Famalicao)	
CQC03001004372 (Roeselare factory)		1 nF to 2.2 μF : 55/105/56/B	BE-619	
Europe	EN132400 IEC 60384-14 2 nd edition	1 nF to 2.2 μF	13595	