

Metallized Polyester Film Capacitors MKT Radial Epoxy Lacquered Type

APPLICATIONS

Blocking and coupling. Bypass and energy reservoir

MARKING

C-value; tolerance; rated voltage

DIELECTRIC

Polyester film

ELECTRODES

Vacuum deposited aluminium

COATING

Flame retardant epoxy material (UL-class 94 V-0)

CONSTRUCTION

Wound mono construction

LEADS

Tinned wire

CAPACITANCE RANGE (E12 SERIES)

0.001 to 1.0 μ F

CAPACITANCE TOLERANCE

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

RATED (DC) VOLTAGE

63 V; 100 V; 250 V; 400 V; 630 V

RATED (AC) VOLTAGE

40 V; 63 V; 160 V; 220 V; 250 V

CLIMATIC CATEGORY

55/105/56

RATED TEMPERATURE

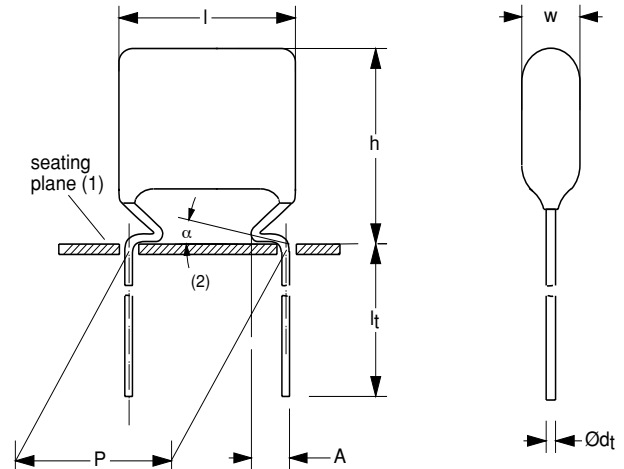
85 °C

MAXIMUM APPLICATION TEMPERATURE

105 °C

REFERENCE SPECIFICATIONS

IEC 60384-2



Dimensions in mm.

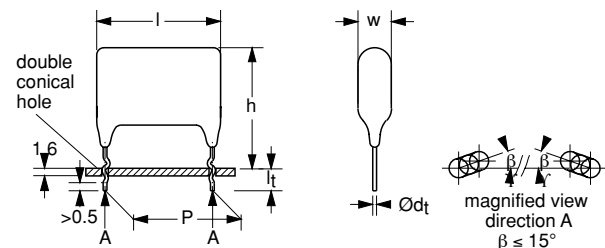
(1) Hole $\varnothing 1.0$ for $d_t = 0.6$ mm.

Hole $\varnothing 1.3$ for $d_t = 0.8$ mm.

(2) $0 \leq \alpha < 50^\circ$.

(3) $A = 2.0 +1.0/-0.5$ mm (pitch = 10.0 mm).

$A = 2.5 +1.4/-0.5$ mm (pitch = 15.0 mm, 22.5 mm and 27.5 mm).



Dimensions in mm.

PERFORMANCE GRADE

Grade 1 (long life)

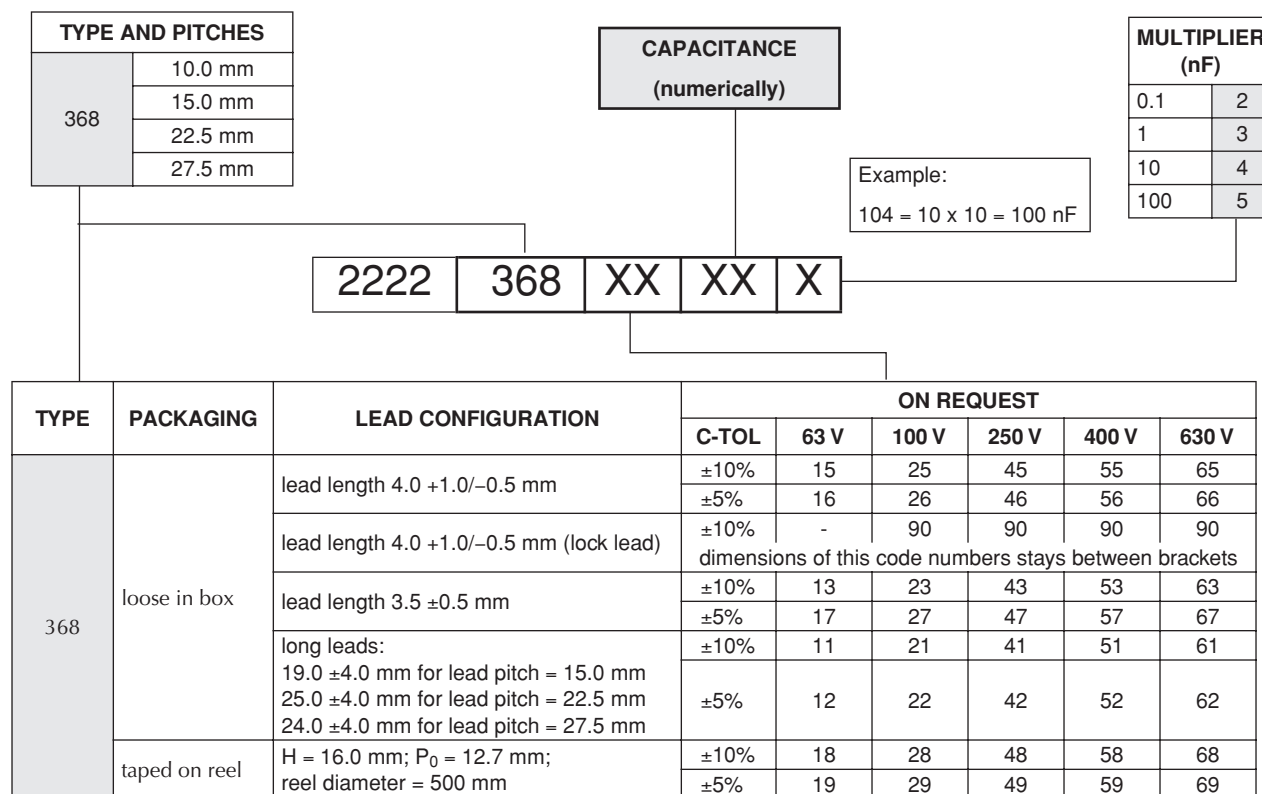
FEATURES

Available taped on reel and loose in box

DETAIL SPECIFICATION

For more detailed data and test requirements see "Type detail specification HQN-384-02/101"

COMPOSITION OF CATALOG NUMBER



SPECIFIC REFERENCE DATA

DESCRIPTION	VALUE				
Tangent of loss angle: C ≤ 0.1 μF 0.1 μF < C ≤ 0.47 μF 0.47 μF < C ≤ 1.0 μF	at 1 kHz	at 10 kHz		at 100 kHz	
	≤75 × 10 ⁻⁴ ≤75 × 10 ⁻⁴ ≤75 × 10 ⁻⁴	≤130 × 10 ⁻⁴ ≤130 × 10 ⁻⁴ ≤130 × 10 ⁻⁴		≤225 × 10 ⁻⁴ ≤300 × 10 ⁻⁴ –	
Rated voltage pulse slope (dU/dt) _R P = 10 mm P = 15 mm P = 22.5 mm P = 27.5 mm	at 63 V (DC) 30 V/μs	at 100 V (DC) 30 V/μs 20 V/μs 8 V/μs 7 V/μs	at 250 V (DC) 70 V/μs 28 V/μs 12 V/μs 10 V/μs	at 400 V (DC) 110 V/μs 44 V/μs 20 V/μs 16 V/μs	at 630 V (DC) 70 V/μs 70 V/μs 28 V/μs 24 V/μs
R between leads, for C ≤ 0.33 μF: at 10 V; 1 minute at 100 V; 1 minute at 500 V; 1 minute	>15000 MΩ	>15000 MΩ	>30000 MΩ	>30000 MΩ	>30000 MΩ
RC between leads, for C > 0.33 μF: at 10 V; 1 minute at 100 V; 1 minute at 500 V; 1 minute	>5000 s	>5000 s	>10000 s	>10000 s	>10000 s
R between interconnecting leads and casing; at 10 V; 1 minute at 100 V; 1 minute at 500 V; 1 minute	>30000 MΩ	>30000 MΩ	>30000 MΩ	>30000 MΩ	>30000 MΩ
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	100 V; 1 minute	160 V; 1 minute	400 V; 1 minute	640 V; 1 minute	1008 V; 1 minute
Withstanding (DC) voltage between leads and case	200 V; 1 minute	200 V; 1 minute	500 V; 1 minute	800 V; 1 minute	1260 V; 1 minute

**U_{Rdc} = 63 V; U_{Rac} = 40 V**

C (μF)	DIMENSIONS w _{max} × h _{max} × l _{max} (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			l _t = 4.0 +1.0/-0.5 mm	short leads	long leads		l _t = 4.0 +1.0/-0.5 mm	
			C-tol = ±10%				C-tol = ±10%	
			last 5 digits of catalog number	SPQ	SPQ	SPQ	last 5 digits of catalog number	SPQ
Pitch = 10.0 ±0.4 mm; d _t = 0.60 ±0.06 mm							lock lead	
0.22	4.2 × 13.2 (15.5) × 12.5	0.5	15224	2000	1000	1300	90316	1100
0.27	4.0 × 12.8 (15.5) × 12.5	0.5	15274	2000	1000	1300	90317	1100
0.33	4.3 × 13.1 (15.5) × 12.5	0.5	15334	2000	1000	1300	90318	1100
0.39	4.2 × 12.9 (15.5) × 12.5	0.5	15394	2000	1000	1300	90319	1100
0.47	4.3 × 13.4 (16.0) × 12.5	0.5	15474	2000	1000	1200	90321	1000
0.56	4.7 × 13.7 (16.0) × 12.5	0.5	15564	2000	1000	1200	90322	1000
0.68	5.1 × 14.1 (16.5) × 12.5	0.6	15684	2000	1000	1100	90323	1500
0.82	5.5 × 14.5 (17.0) × 12.5	0.6	15824	2000	1000	1000	90324	1250
1	6.0 × 15.0 (17.5) × 12.5	0.8	15105	2000	1000	900	90325	1250

U_{Rdc} = 100 V; U_{Rac} = 63 V

C (μ F)	DIMENSIONS $w_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			$l_t =$ 4.0 +1.0/−0.5 mm	short leads	long leads		$l_t =$ 4.0 +1.0/−0.5 mm	
			C-tol = $\pm 10\%$				C-tol = $\pm 10\%$	
			last 5 digits of catalog number	SPQ	SPQ	SPQ	last 5 digits of catalog number	SPQ
Pitch = 10.0 ± 0.4 mm; d_t = 0.60 ± 0.06 mm							lock lead	
0.056 0.068	4.0 $\times$ 13.0 (15.0) $\times$ 12.5	0.4	25563 25683	2000	1000	1500	90205 90206	1250
0.082	3.7 $\times$ 12.7 (15.0) $\times$ 12.5	0.4	25823	2000	1000	1500	90207	1250
0.1	4.0 $\times$ 13.0 (15.0) $\times$ 12.5	0.4	25104	2000	1000	1500	90208	1250
0.12	4.3 $\times$ 13.3 (15.0) $\times$ 12.5	0.4	25124	2000	1000	1500	90209	1250
0.15	3.9 $\times$ 12.9 (15.0) $\times$ 12.5	0.4	25154	2000	1000	1500	90211	1250
0.18	4.2 $\times$ 13.2 (15.5) $\times$ 12.5	0.5	25184	2000	1000	1300	90212	1100
0.22	4.5 $\times$ 13.6 (16.0) $\times$ 12.5	0.5	25224	2000	1000	1200	90213	1000
Pitch = 15.0 ± 0.4 mm; d_t = 0.80 ± 0.08 mm							lock lead	
0.27 0.33 0.39	5.0 $\times$ 14.0 (17.0) $\times$ 17.5	0.6	25274 25334 25394	2000	1000	1200	90214 90215 90216	1750
0.47 0.56	5.5 $\times$ 14.5 (17.5) $\times$ 17.5	0.7	25474 25564	2000	1000	1100	90217 90218	1500
0.68	6.0 $\times$ 15.0 (18.0) $\times$ 17.5	0.9	25684	2000	1000	1000	90219	1500
0.82	6.5 $\times$ 15.5 (18.5) $\times$ 17.5	1.0	25824	1000	1000	900	90221	1250
1	7.5 $\times$ 16.5 (19.5) $\times$ 17.5	1.3	25105	1000	1000	800	90222	1000

C (μF)	DIMENSIONS w _{max} × h _{max} × l _{max} (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			l _t = 4.0 +1.0/−0.5 mm	short leads	long leads	SPQ	l _t = 4.0 +1.0/−0.5 mm	SPQ
			C-tol = ±10%				C-tol = ±10%	
			last 5 digits of catalog number	SPQ	SPQ		last 5 digits of catalog number	
Pitch = 22.5 ±0.4 mm; d _t = 0.80 ±0.08 mm							lock lead	
1.2 1.5	6.0 × 18.0 (21.0) × 26.0	2.5	25125 25155	1000	1000	650	90223 90224	1000
1.8	7.0 × 19.0 (22.0) × 26.0	3.2	25185	1000	1000	650	90225	900
2.2	7.5 × 19.5 (23.0) × 26.0	3.5	25225	1000	500	600	90226	750
2.7	8.5 × 21.5 (24.0) × 26.0	4.1	25275	1000	500	500	90227	600
3.3	9.0 × 22.0 (24.5) × 26.0	4.5	25335	1000	500	450	90228	600
Pitch = 27.5 ±0.4 mm; d _t = 0.80 ±0.08 mm							lock lead	
3.9	9.0 × 22.0 (24.0) × 30.0	4.8	25395	500	500		90229	500
4.7	10.0 × 23.0 (25.0) × 30.0	5.5	25475	500	500		90178	400
5.6	11.0 × 24.0 (26.0) × 30.0	6.2	25565	500	250		90231	350
6.8	12.0 × 25.0 (27.0) × 30.0	6.8	25685	500	250		90232	350

 $U_{Rdc} = 250$ V; $U_{Rac} = 160$ V

C (μF)	DIMENSIONS w _{max} × h _{max} × l _{max} (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING						
			LOOSE IN BOX			REEL	LOOSE IN BOX		
			l _t = 4.0 +1.0/–0.5 mm	short leads	long leads		l _t = 4.0 +1.0/–0.5 mm		
			C-tol = ±10%	SPQ	SPQ				C-tol = ±10%
			last 5 digits of catalog number						
Pitch = 10.0 ±0.4 mm; d _t = 0.60 ±0.06 mm							lock lead		
0.027	4.2 × 13.0 (15.0) × 12.5	0.4	45273	2000	1000	1500	90233	1250	
0.033	4.6 × 13.0 (15.0) × 12.5	0.5	45333	2000	1000	1300	90234	1250	
0.039	4.0 × 13.0 (15.0) × 12.5	0.4	45393	2000	1000	1500	90235	1250	
0.047	4.5 × 13.5 (15.5) × 12.5	0.5	45473	2000	1000	1500	90176	1250	
0.056 0.068	4.6 × 13.5 (15.5) × 12.5	0.5	45563 45683	2000	1000	1300	90236 90237	1100	
0.082	4.4 × 13.4 (16.0) × 12.5	0.5	45823	2000	1000	1200	90238	1000	
0.1	4.7 × 13.7 (16.0) × 12.5	0.5	45104	2000	1000	1200	90177	1000	
Pitch = 15.0 ±0.4 mm; d _t = 0.80 ±0.08 mm							lock lead		
0.12 0.15	5.0 × 14.0 (17.0) × 17.5	0.6	45124 45154	2000	1000	1200	90239 90241	1750	
0.18	5.5 × 14.5 (17.5) × 17.5	0.7	45184	2000	1000	1100	90242	1500	
0.22	6.0 × 15.0 (18.0) × 17.5	0.9	45224	2000	1000	1000	90243	1500	
0.27	6.0 × 15.5 (18.5) × 17.5	1.0	45274	2000	1000	900	90244	1250	
0.33	6.8 × 16.0 (19.0) × 17.5	1.2	45334	1000	1000	800	90245	1250	
Pitch = 22.5 ±0.4 mm; d _t = 0.80 ±0.08 mm							lock lead		
0.39	5.0 × 17.0 (20.0) × 26.0	1.8	45394	1000	1000	800	90246	1250	
0.47	5.5 × 17.5 (20.5) × 26.0	2.2	45474	1000	1000	750	90247	1250	
0.56	6.0 × 18.0 (21.0) × 26.0	2.5	45564	1000	1000	650	90248	1000	
0.68	6.6 × 18.5 (21.5) × 26.0	2.8	45684	1000	1000	600	90249	1000	
0.82	7.2 × 19.0 (22.0) × 26.0	3.2	45824	1000	1000	550	90251	900	
1	8.0 × 20.0 (23.0) × 26.0	3.8	45105	1000	500	500	90252	750	



C (μF)	DIMENSIONS w _{max} × h _{max} × l _{max} (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			l _t = 4.0 +1.0/−0.5 mm	short leads	long leads	SPQ	l _t = 4.0 +1.0/−0.5 mm	SPQ
			C-tol = ±10%	SPQ	SPQ		C-tol = ±10%	
			last 5 digits of catalog number				last 5 digits of catalog number	
Pitch = 27.5 ±0.4 mm; d _t = 0.80 ±0.08 mm					lock lead			
1.2	8.0 × 21.0 (23.0) × 30.0	4.1	45125	500	500	90253	600	
1.5	9.0 × 22.0 (25.0) × 30.0	4.8	45155	500	500	90254	450	
1.8	10.0 × 23.0 (26.0) × 30.0	5.5	45185	500	500	90255	400	
2.2	11.0 × 24.0 (27.0) × 30.0	6.2	45225	500	250	90256	350	

U_{Rdc} = 400 V; U_{Rac} = 220 V

C (μF)	DIMENSIONS w _{max} × h _{max} × l _{max} (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			l _t = 4.0 +1.0/-0.5 mm	short leads	long leads		l _t = 4.0 +1.0/-0.5 mm	
			C-tol = ±10%				C-tol = ±10%	
			last 5 digits of catalog number				SPQ	
Pitch = 10.0 ±0.4 mm; d _t = 0.60 ±0.06 mm							lock lead	
0.001 0.0012 0.0015 0.0018	4.5 × 13.5 (15.5) × 12.5	0.5	55102	2000	1000	1500	90257	1100
55122			90258					
55152			90259					
55182			90261					
0.0022	4.0 × 13.0 (15.5) × 12.5	0.5	55222	2000	1000	1500	90262	1100
0.0027	4.3 × 13.3 (15.5) × 12.5	0.5	55272	2000	1000	1500	90263	1100
0.0033	4.6 × 13.6 (15.5) × 12.5	0.5	55332	2000	1000	1500	90264	1100
0.0039	4.0 × 13.0 (15.5) × 12.5	0.5	55392	2000	1000	1500	90265	1100
0.0047	4.1 × 13.2 (15.5) × 12.5	0.5	55472	2000	1000	1500	90266	1100
0.0056 0.0068 0.0082 0.01	4.6 × 13.6 (15.5) × 12.5	0.5	55562	2000	1000	1500	90267	1100
55682			90268					
55822			90269					
55103			90271					
0.012	4.0 × 13.0 (15.5) × 12.5	0.5	55123	2000	1000	1500	90272	1100
0.015	4.1 × 13.0 (15.5) × 12.5	0.5	55153	2000	1000	1300	90273	1100
0.018	4.4 × 13.0 (15.5) × 12.5	0.5	55183	2000	1000	1500	90274	1100
0.022	4.2 × 12.9 (15.5) × 12.5	0.5	55223	2000	1000	1500	90175	1100
0.027	4.2 × 13.2 (15.5) × 12.5	0.5	55273	2000	1000	1300	90275	1100
0.033	4.6 × 13.7 (15.5) × 12.5	0.5	55333	2000	1000	1300	90188	1100
Pitch = 15.0 ±0.4 mm; d _t = 0.80 ±0.08 mm							lock lead	
0.039	5.0 × 13.9 (16.5) × 17.5	0.6	55393	2000	1000	1200	90276	2000
0.047	5.4 × 14.5 (17.0) × 17.5	0.7	55473	2000	1000	1200	90277	1750
0.056	5.0 × 13.7 (16.5) × 17.5	0.6	55563	2000	1000	1200	90278	2000
0.068	5.0 × 13.5 (16.5) × 17.5	0.6	55683	2000	1000	1200	90279	2000
0.082	4.8 × 14.0 (16.5) × 17.5	0.6	55823	2000	1000	1100	90281	2000
0.1	5.3 × 14.5 (17.5) × 17.5	0.7	55104	2000	1000	1000	90186	1500
0.12	5.7 × 15.0 (18.0) × 17.5	0.9	55124	1000	1000	900	90282	1500
0.15	6.4 × 15.5 (18.5) × 17.5	1.0	55154	1000	1000	800	90187	1250

C (μF)	DIMENSIONS w _{max} × h _{max} × l _{max} (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			l _t = 4.0 +1.0/–0.5 mm	short leads	long leads		l _t = 4.0 +1.0/–0.5 mm	
			C-tol = ±10%					
			last 5 digits of catalog number	SPQ	SPQ	SPQ	last 5 digits of catalog number	SPQ
Pitch = 22.5 ±0.4 mm; d _t = 0.80 ±0.08 mm							lock lead	
0.18	5.6 × 17.5 (20.5) × 26.0	2.2	55184	1000	1000	800	90283	1250
0.22	6.3 × 18.5 (21.5) × 26.0	2.8	55224	1000	1000	650	90284	1000
0.27	6.0 × 18.0 (21.0) × 26.0	2.5	55274	1000	1000	650	90285	1000
0.33	6.4 × 18.5 (21.5) × 26.0	2.8	55334	1000	1000	650	90286	1000
0.39	7.1 × 19.0 (21.5) × 26.0	2.8	55394	1000	1000	550	90287	900
0.47	8.0 × 20.0 (22.5) × 26.0	3.8	55474	1000	500	500	90179	750
Pitch = 27.5 ±0.4 mm; d _t = 0.80 ±0.08 mm							lock lead	
0.56	7.5 × 20.5 (22.5) × 30.0	3.8	55564	500	500		90288	600
0.68	8.5 × 21.5 (23.5) × 30.0	4.5	55684	500	500		90289	500
0.82	9.5 × 22.5 (24.5) × 30.0	5.2	55824	500	500		90291	450
1	10.5 × 23.5 (26.5) × 30.0	5.8	55105	500	250		90292	350

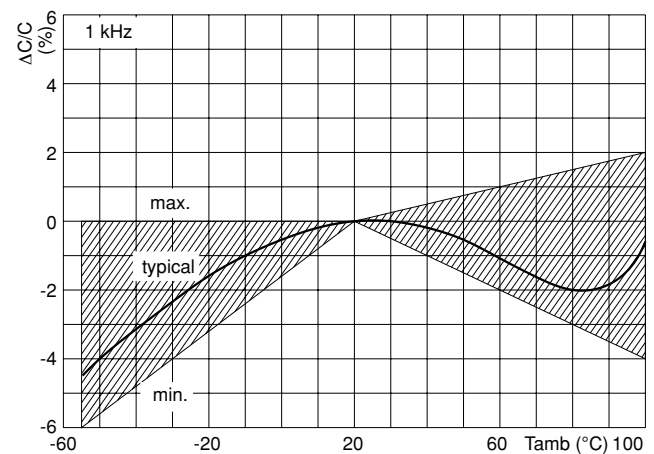
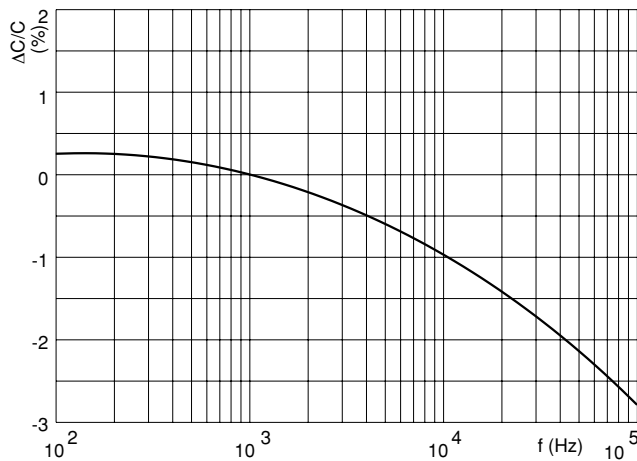
 $U_{Rdc} = 630$ V; $U_{Rac} = 250$ V

C (μ F)	DIMENSIONS $w_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			$l_t =$ 4.0 +1.0/-0.5 mm	short leads	long leads	SPQ	$l_t =$ 4.0 +1.0/-0.5 mm	SPQ
			C-tol = $\pm 10\%$				C-tol = $\pm 10\%$	
			last 5 digits of catalog number	SPQ	SPQ		last 5 digits of catalog number	
Pitch = 10.0 $\pm$ 0.4 mm; d_t = 0.60 $\pm$ 0.06 mm							lock lead	
0.01	4.3 $\times$ 13.1 (15.5) $\times$ 12.5	0.5	65103	2000	1000	1300	90293	1100
0.012	4.6 $\times$ 13.4 (16.0) $\times$ 12.5	0.5	65123	2000	1000	1200	90294	1000
0.015	4.9 $\times$ 13.9 (16.5) $\times$ 12.5	0.6	65153	2000	1000	1100	90295	1500
0.018	5.3 $\times$ 14.3 (17.0) $\times$ 12.5	0.6	65183	2000	1000	1000	90296	1250
0.022	5.9 $\times$ 14.9 (17.5) $\times$ 12.5	0.8	65223	2000	1000	900	90297	1250
Pitch = 15.0 $\pm$ 0.4 mm; d_t = 0.80 $\pm$ 0.08 mm							lock lead	
0.027	5.5 $\times$ 14.5 (17.5) $\times$ 17.5	0.7	65273	2000	1000	1100	90298	1500
0.033	6.0 $\times$ 15.0 (18.0) $\times$ 17.5	0.9	65333	2000	1000	1000	90299	1500
0.039	6.3 $\times$ 15.5 (18.5) $\times$ 17.5	1.0	65393	2000	1000	900	90301	1250
0.047	7.0 $\times$ 16.0 (19.0) $\times$ 17.5	1.2	65473	2000	1000	800	90302	1250
0.056	7.5 $\times$ 16.5 (19.5) $\times$ 17.5	1.3	65563	1000	1000	800	90303	1000
0.068	8.0 $\times$ 17.0 (20.0) $\times$ 17.5	1.4	65683	1000	1000	750	90304	1000
Pitch = 22.5 $\pm$ 0.4 mm; d_t = 0.80 $\pm$ 0.08 mm							lock lead	
0.082	6.1 $\times$ 18.0 (21.0) $\times$ 26.0	2.5	65823	1000	1000	750	90305	1000
0.1	7.0 $\times$ 19.0 (22.0) $\times$ 26.0	3.2	65104	1000	1000	650	90306	900
0.12	7.2 $\times$ 19.5 (22.5) $\times$ 26.0	3.5	65124	1000	1000	550	90307	750
0.15	8.0 $\times$ 21.0 (23.0) $\times$ 26.0	3.8	65154	1000	500	500	90308	750
0.18	9.0 $\times$ 22.0 (24.0) $\times$ 26.0	4.5	65184	1000	500	450	90309	600
0.22	10.0 $\times$ 23.0 (25.0) $\times$ 26.0	5.2	65224	1000	500	400	90311	550

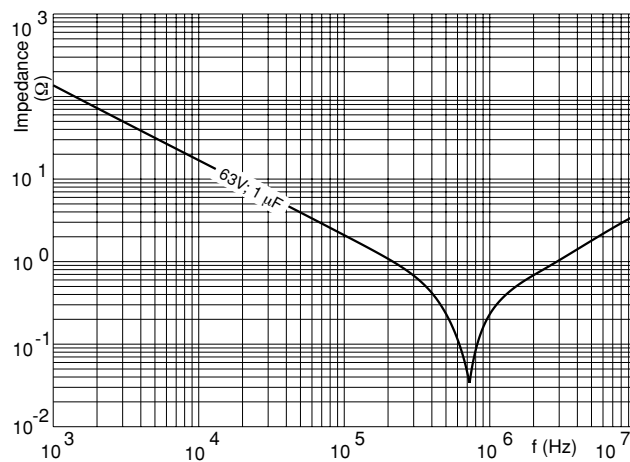


C (μF)	DIMENSIONS w _{max} × h _{max} × l _{max} (mm)	MASS (g)	CATALOG NUMBER 2222 368 AND PACKAGING					
			LOOSE IN BOX			REEL	LOOSE IN BOX	
			l _t = 4.0 +1.0/–0.5 mm	short leads	long leads	SPQ	l _t = 4.0 +1.0/–0.5 mm	SPQ
			C-tol = ±10%				C-tol = ±10%	
			last 5 digits of catalog number	SPQ	SPQ		last 5 digits of catalog number	
Pitch = 27.5 ±0.4 mm; d _t = 0.80 ±0.08 mm			lock lead					
0.27	10.0 × 23.0 (25.0) × 30.0	5.5	65274	500	500		90312	400
0.33	11.5 × 24.5 (26.5) × 30.0	6.5	65334	500	250		90313	350
0.39	12.5 × 25.5 (28.5) × 30.0	7.1	65394	500	250		90314	300
0.47	14.0 × 27.0 (30.0) × 30.0	8.2	65474	250	250		90315	250

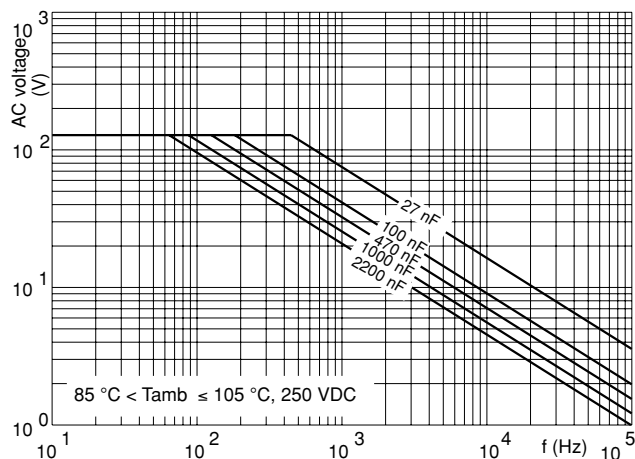
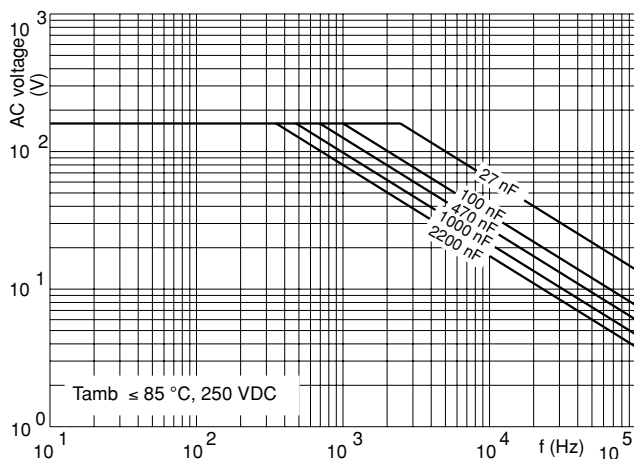
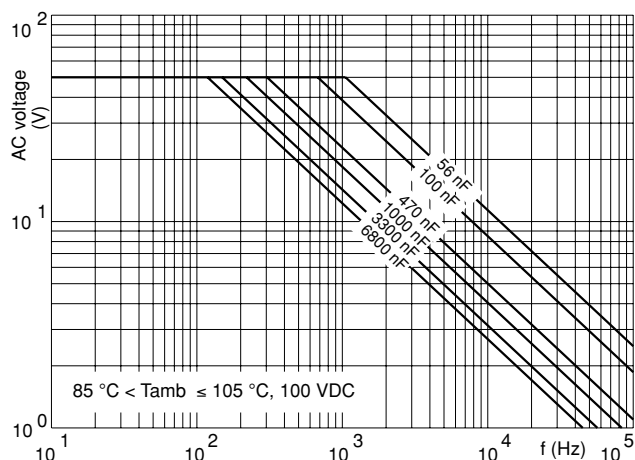
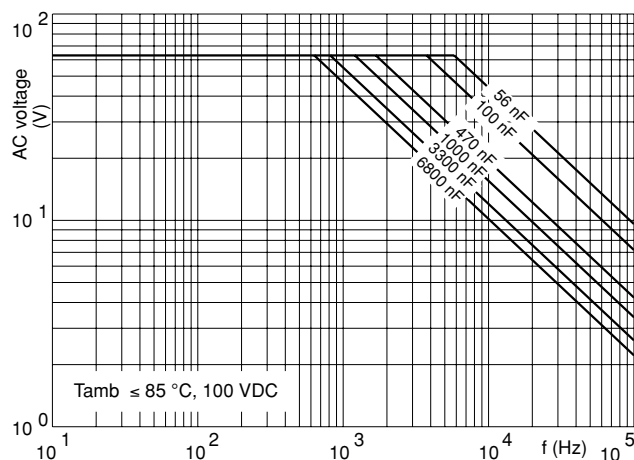
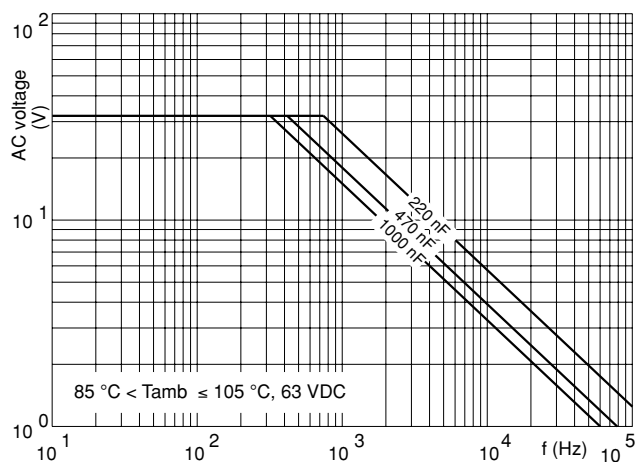
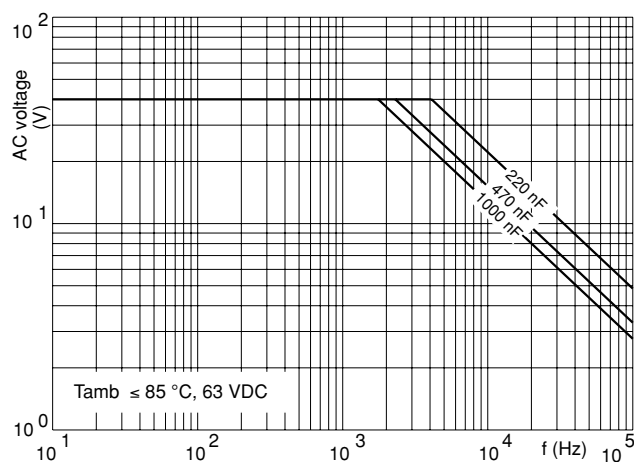
CAPACITANCE

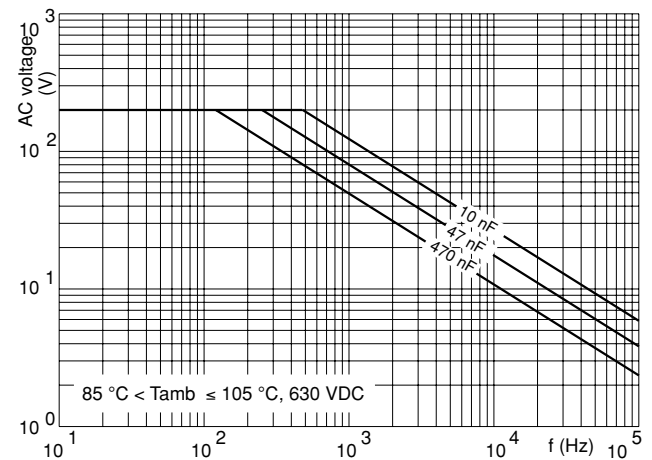
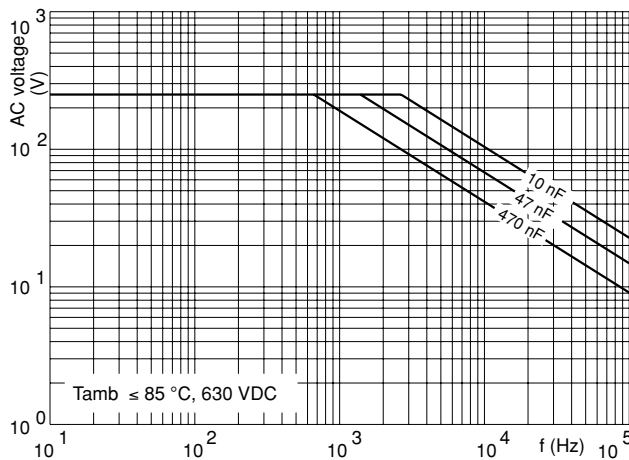
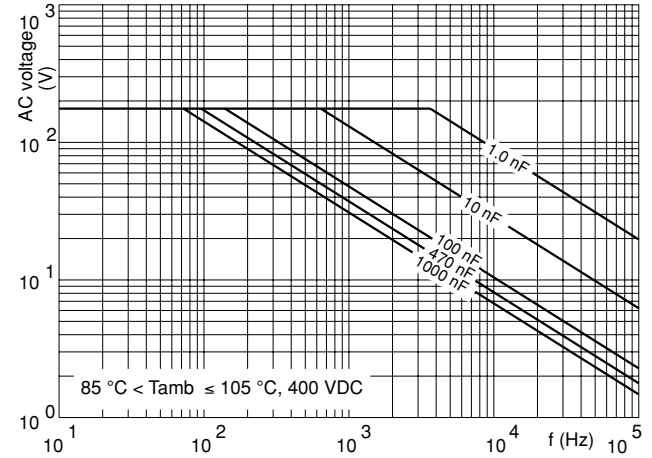
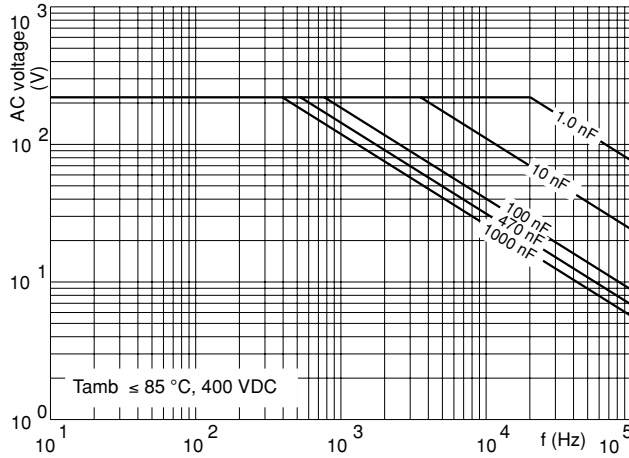


IMPEDANCE



MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY





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