

## Metallized Polyester Film Capacitors MKT Radial Type



### FEATURES

- 10.0 mm to 27.5 mm lead pitch
- Self-healing properties
- Flame retardant case
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### APPLICATIONS

Blocking, bypassing, filtering, timing, coupling and decoupling circuits, interference suppression in low voltage applications.

QUICK REFERENCE DATA	
Capacitance range (E12 series)	1000 pF to 15 $\mu$ F (preferred values according to E6)
Capacitance tolerance	$\pm 20\%$ (M), $\pm 10\%$ (K), $\pm 5\%$ (J) (on request)
Climatic testing class according to IEC 60068	55/100/56
Reference standards	IEC 60384-2
Dielectric	Polyester film
Electrodes	Vacuum deposited aluminum
Construction	Extended metallized film
Encapsulation	Flame retardant plastic case UL-class 94 V-0
Leads	Tinned wire
Marking	Manufacturer's logo; type; C-value; rated voltage; tolerance; date of manufacture
Temperature range	$-55\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$
Rated DC voltage	63 V <sub>DC</sub> , 100 V <sub>DC</sub> , 250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub> , 1000 V <sub>DC</sub>
Permissible AC voltages (RMS) up to 60 Hz	40 V <sub>AC</sub> , 63 V <sub>AC</sub> , 160 V <sub>AC</sub> , 200 V <sub>AC</sub> , 220 V <sub>AC</sub>
Capacitance drift	Up to $+40\text{ }^{\circ}\text{C}$ , $\pm 1.5\%$ for a period of two years
Derating for DC and AC category voltage U <sub>C</sub>	At $+85\text{ }^{\circ}\text{C}$ : U <sub>C</sub> = 1.0 U <sub>R</sub> At $+100\text{ }^{\circ}\text{C}$ : U <sub>C</sub> = 0.8 U <sub>R</sub>
Self inductance	$\sim 6\text{ nH}$ measured with 2 mm long leads
Pull test on leads	$\geq 30\text{ N}$ in direction of leads according to IEC 60068-2-21

#### Note

- For more detailed data and test requirements, contact [dc-film@vishay.com](mailto:dc-film@vishay.com)

DIMENSIONS in millimeters

**COMPOSITION OF CATALOG NUMBER**

**Note**

- For detailed tape specifications refer to packaging information [www.vishay.com/docs/228139](http://www.vishay.com/docs/228139) or "Recommended Packaging" table

SPECIFIC REFERENCE DATA						
DESCRIPTION				MAX. VALUE		
Tangent of loss angle: $C \leq 0.1 \mu\text{F}$ $0.1 \mu\text{F} < C \leq 1.0 \mu\text{F}$ $C > 1.0 \mu\text{F}$				at 1 kHz	at 10 kHz	at 100 kHz
				$8 \times 10^{-3}$	$15 \times 10^{-3}$	$25 \times 10^{-3}$
				$8 \times 10^{-3}$	$15 \times 10^{-3}$	-
			$10 \times 10^{-3}$	-	-	
PCM (mm)	MAXIMUM PULSE RISE TIME (dV/dt) [V/ $\mu\text{s}$ ]					
	63 V <sub>DC</sub>	100 V <sub>DC</sub>	250 V <sub>DC</sub>	400 V <sub>DC</sub>	630 V <sub>DC</sub>	1000 V <sub>DC</sub>
10	11	13	22	37	60	130
15	7	8	13	21	33	65
22.5	4	5	8	13	19	34
27.5	3	4	6	10	14	25
If the maximum pulse voltage is less than the rated voltage higher dV/dt values can be permitted.						
R between leads, for $C \leq 0.33 \mu\text{F}$ and $U_R \leq 100 \text{ V}$				> 15 000 M $\Omega$		
R between leads, for $C \leq 0.33 \mu\text{F}$ and $U_R > 100 \text{ V}$				> 30 000 M $\Omega$		
RC between leads, for $C > 0.33 \mu\text{F}$ and $U_R \leq 100 \text{ V}$				> 5000 s		
RC between leads, for $C > 0.33 \mu\text{F}$ and $U_R > 100 \text{ V}$				> 10 000 s		
R between leads and case, 100 V; (foil method)				> 30 000 M $\Omega$		
Withstanding (DC) voltage (cut off current 10 mA); rise time < 1000 V/s				$1.6 \times U_{\text{RDC}}$ , 1 min		
Withstanding (DC) voltage between leads and case				$2 \times U_{\text{RDC}}$ , 1 min		
Maximum application temperature				100 °C		



ELECTRICAL DATA						
U <sub>RDC</sub> (V)	CAP. (μF)	CAPACITANCE CODE	VOLTAGE CODE	V <sub>AC</sub>	DIMENSIONS W x H x L	PCM
63	0.22	-422	06	40	4.0 x 9.0 x 13.0	10
	0.33	-433			4.0 x 9.0 x 13.0	10
	0.47	-447			5.5 x 10.5 x 13.0	10
	0.68	-468			5.5 x 10.5 x 18.0	15
	1.0	-510			5.5 x 10.5 x 18.0	15
	1.5	-515			6.5 x 12.5 x 18.0	15
	2.2	-522			7.5 x 13.5 x 18.0	15
	3.3	-533			7.5 x 15.5 x 26.5	22.5
	4.7	-547			8.5 x 16.5 x 26.5	22.5
	6.8	-568			10.5 x 18.5 x 26.5	22.5
	10.0	-610			11.5 x 20.5 x 31.5	27.5
	15.0	-615			13.5 x 23.5 x 31.5	27.5
100	0.068	-368	01	63	4.0 x 9.0 x 13.0	10
	0.10	-410			4.0 x 9.0 x 13.0	10
	0.15	-415			4.0 x 9.0 x 13.0	10
	0.22	-422			4.5 x 9.5 x 13.0	10
	0.33	-433			5.5 x 10.5 x 18.0	15
	0.47	-447			5.5 x 10.5 x 18.0	15
	0.68	-468			6.5 x 12.5 x 18.0	15
	1.0	-510			7.5 x 13.5 x 18.0	15
	1.5	-515			7.5 x 15.5 x 26.5	22.5
	2.2	-522			8.5 x 16.5 x 26.5	22.5
	3.3	-533			10.5 x 18.5 x 26.5	22.5
	4.7	-547			11.5 x 20.5 x 31.5	27.5
	6.8	-568			13.5 x 23.5 x 31.5	27.5
	10.0	-610			15.0 x 24.5 x 31.5	27.5
15.0	-615	16.5 x 29.5 x 31.5	27.5			
250	0.033	-333	25	160	4.0 x 9.0 x 13.0	10
	0.047	-347			4.0 x 9.0 x 13.0	10
	0.068	-368			4.5 x 9.5 x 13.0	10
	0.10	-410			5.5 x 10.5 x 18.0	15
	0.15	-415			5.5 x 10.5 x 18.0	15
	0.22	-422			5.5 x 10.5 x 18.0	15
	0.33	-433			6.5 x 12.5 x 18.0	15
	0.47	-447			6.5 x 14.5 x 26.5	22.5
	0.68	-468			7.5 x 15.5 x 26.5	22.5
	1.0	-510			8.5 x 16.5 x 26.5	22.5
	1.5	-515			9.0 x 18.5 x 31.5	27.5
	2.2	-522			11.5 x 20.5 x 31.5	27.5
	3.3	-533			13.5 x 23.5 x 31.5	27.5
	400	0.0010			-210	40
0.0015		-215	4.0 x 9.0 x 13.0	10		
0.0022		-222	4.0 x 9.0 x 13.0	10		
0.0033		-233	4.0 x 9.0 x 13.0	10		
0.0047		-247	4.0 x 9.0 x 13.0	10		
0.0068		-268	4.0 x 9.0 x 13.0	10		
0.010		-310	4.0 x 9.0 x 13.0	10		
0.015		-315	4.0 x 9.0 x 13.0	10		
0.022		-322	4.0 x 9.0 x 13.0	10		
0.033		-333	4.0 x 9.0 x 13.0	10		
0.047		-347	5.5 x 10.5 x 18.0	15		
0.068		-368	5.5 x 10.5 x 18.0	15		
0.10		-410	5.5 x 10.5 x 18.0	15		
0.15		-415	6.5 x 12.5 x 18.0	15		
0.22		-422	7.5 x 15.5 x 26.5	22.5		
0.33		-433	8.5 x 16.5 x 26.5	22.5		
0.47		-447	10.5 x 18.5 x 26.5	22.5		
0.68		-468	11.5 x 20.5 x 31.5	27.5		
1.0		-510	11.5 x 20.5 x 31.5	27.5		
1.5		-515	13.5 x 23.5 x 31.5	27.5		



ELECTRICAL DATA						
U <sub>RDC</sub> (V)	CAP. (µF)	CAPACITANCE CODE	VOLTAGE CODE	V <sub>AC</sub>	DIMENSIONS W x H x L	PCM
630	0.0010	-210	63 <sup>(1)</sup>	220	4.0 x 9.0 x 13.0	10
	0.0015	-215			4.0 x 9.0 x 13.0	10
	0.0022	-222			4.0 x 9.0 x 13.0	10
	0.0033	-233			4.0 x 9.0 x 13.0	10
	0.0047	-247			4.0 x 9.0 x 13.0	10
	0.0068	-268			4.0 x 9.0 x 13.0	10
	0.010	-310			4.0 x 9.0 x 13.0	10
	0.015	-315			5.5 x 10.5 x 13.0	10
	0.022	-322			6.5 x 11.5 x 13.0	10
	0.033	-333			5.5 x 10.5 x 18.0	15
	0.047	-347			6.5 x 12.5 x 18.0	15
	0.068	-368			7.5 x 13.5 x 18.0	15
	0.10	-410			6.5 x 14.5 x 26.5	22.5
	0.15	-415			7.5 x 15.5 x 26.5	22.5
	0.22	-422			8.5 x 16.5 x 26.5	22.5
	0.33	-433			11.5 x 20.5 x 31.5	27.5
	0.47	-447			11.5 x 20.5 x 31.5	27.5
	0.68	-468			13.5 x 23.5 x 31.5	27.5
1.0	-510	15.0 x 24.5 x 31.5	27.5			
1000	0.0010	-210	10 <sup>(1)</sup>	220	4.0 x 9.0 x 13.0	10
	0.0015	-215			4.0 x 9.0 x 13.0	10
	0.0022	-222			4.0 x 9.0 x 13.0	10
	0.0033	-233			4.0 x 9.0 x 13.0	10
	0.0047	-247			5.5 x 10.5 x 13.0	10
	0.0068	-268			6.5 x 11.5 x 13.0	10
	0.010	-310			5.5 x 10.5 x 18.0	15
	0.015	-315			6.5 x 12.5 x 18.0	15
	0.022	-322			7.5 x 13.5 x 18.0	15
	0.033	-333			6.5 x 14.5 x 26.5	22.5
	0.047	-347			7.5 x 15.5 x 26.5	22.5
	0.068	-368			8.5 x 16.5 x 26.5	22.5
	0.10	-410			10.5 x 18.5 x 26.5	22.5
	0.15	-415			11.5 x 20.5 x 31.5	27.5
	0.22	-422			13.5 x 23.5 x 31.5	27.5
	0.33	-433			16.5 x 29.5 x 31.5	27.5
	0.47	-447			20.0 x 35.0 x 31.5	27.5

Note

<sup>(1)</sup> Not suitable for mains applications.

RECOMMENDED PACKAGING							
LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER (mm)	ORDERING CODE EXAMPLES	PCM 10	PCM 15	PCM 22.5 TO 27.5
D	Ammo	16.5	S <sup>(1)</sup>	MKT1822-422-065-D	X	X	-
G	Ammo	18.5	S <sup>(1)</sup>	MKT1822-422-065-G	X	X	-
F	Reel	16.5	350	MKT1822-422-065-F	X	X	-
W	Reel	18.5	350	MKT1822-422-065-W	X	X	-
V	Reel	18.5	500	MKT1822-510-255-V	-	X	X
G	Ammo	18.5	L <sup>(2)</sup>	MKT1822-510-255-G	-	-	X
-	Bulk	-	-	MKT1822-510-255	X	X	X
-	Bulk	-	-	MKT1822-522-255	X	-	X

Notes

<sup>(1)</sup> S = Box size 55 mm x 210 mm x 340 mm (W x H x L)

<sup>(2)</sup> L = Box size 60 mm x 360 mm x 510 mm (W x H x L)



PERMISSIBLE AC VOLTAGE VS. FREQUENCY





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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А