

R. 68

R. 85

MKT Series

METALLIZED POLYESTER FILM CAPACITOR MULTIPURPOSE APPLICATIONS

Typical applications: logic and timing circuits; blocking, by-passing, coupling, oscillator circuits, temperature compensation circuits, interference suppression in low voltage applications (i.e.: AUTOMOTIVE).

☐ CECC APPROVAL

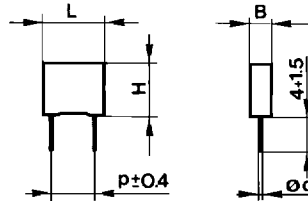
Detail Specification 30401 - 009

p = 5mm

ORDERING CODE: R.68 (Bulk) - R.85 (Taped)

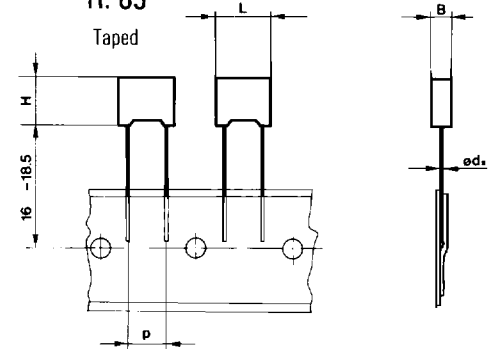
R. 68

Bulk



R. 85

Taped



All dimensions are in mm.

GENERAL TECHNICAL DATA

Dielectric:

polyester film
(polyethylene terephthalate).

Plates:

aluminum layer deposited by evaporation under vacuum.

Winding:

non-inductive type.

Leads:

tinned wire (minimum lead content 5%).

Protection:

plastic case, epoxy resin filled.

Box made of solvent resistant material and flame retardant according to UL94 VO.

B	≤ 3.5	> 3.5
Ød ± 0.05	0.5 to 0.6	0.6

Marking:

Capacitance, tolerance, D.C. nominal voltage.

Climatic category:

FME DIN 40040
55/100/21 IEC 68-1

Operating temperature range:

-55 to +105°C

Technical terms and tests:

IEC 384-2 CECC 30400 DIN 44110 T1
DIN 45910 T11

Detail specification:

CECC 30401-009 - DIN 44112

Rated Capacitance	50-V/30V-				63V-/40V -				100V-/63V-				250V-/160VAC-				400V/200VAC				
	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	
1000pF										25	65	7.2	5					25	65	7.2	5
1500pF										25	65	7.2	5					25	65	7.2	5
2200pF										25	65	7.2	5					25	65	7.2	5
3300pF										25	65	7.2	5					25	65	7.2	5
4700pF										25	65	7.2	5					25	65	7.2	5
6800pF										25	65	7.2	5	25	65	7.2	5	30	65	7.2	5
0.01µF										25	65	7.2	5	25	65	7.2	5	35	75	7.2	5
0.015µF										25	65	7.2	5	25	65	7.2	5	45	95	7.2	5
0.022µF										25	65	7.2	5	30	65	7.2	5	45	95	7.2	5
0.033µF										25	65	7.2	5	35	75	7.2	5	50	100	7.2	5
0.047µF										25	65	7.2	5	45	95	7.2	5	60	110	7.2	5
0.068µF						25	65	7.2	5	25	65	7.2	5	45	95	7.2	5				
0.10µF						25	65	7.2	5	35	75	7.2	5	60	110	7.2	5				
0.15µF						25	65	7.2	5	45	95	7.2	5	7.2	130	7.2	5				
0.22µF						25	65	7.2	5	50	100	7.2	5	7.2	130	7.2	5				
0.33µF						35	75	7.2	5	60	110	7.2	5								
0.47µF						35	75	7.2	5	60*	110	7.2	5								
0.68µF						50	100	7.2	5	7.2*	130	7.2	5								
1.0µF	5.0	10.0	7.2	5	60	110	7.2	5	7.2*	130	7.2	5									
1.5µF	6.0	11.0	7.2	5																	
2.2µF	7.2	13.0	7.2	5																	

R. 68

R. 85

MKT Series

□ CECC APPROVAL

Detail Specification 30401 009

p = 5mm

ORDERING CODE: R.68 (Bulk) · R.85 (Taped)

METALLIZED POLYESTER FILM CAPACITOR MULTIPURPOSE APPLICATIONS

ELECTRICAL CHARACTERISTICS

Nominal Voltage (V_n):

50Vdc - 63Vdc - 100Vdc - 250Vdc - 400Vdc.

Category Voltage (V_c):

up to 85°C V_c = V_n.

For temperature between +85°C and +105°C a decreasing factor of 1.25% per degree °C on the nominal voltage V_n has to be applied.

Capacitance range:

1000pF to 2.2μF.

Capacitance values:

Values in compliance with IEC 63 Norm. E6 series. E12 values available on request.

Capacitance tolerance: (measured at 1 KHz)

±5%(J) ±10%(K) ±20%(M).

Total self-inductance (L):

≈7 nH.

Dissipation Factor (DF):

tgδ × 10⁻⁴ at +25°C ±5°C

KHz	C ≤ 0.1μF	C > 0.1μF
1	≤100	≤100
10	≤150	≤150
100	≤300	

Insulation Resistance:

Test conditions

Temperature: 25°C ±5°C

Voltage charge time: 1 minute

Voltage charge: 50Vdc for V_n < 100Vdc

100Vdc for V_n ≥ 100Vdc

Performance

For V_n > 100Vdc

≥30.000MΩ (50.000 MΩ)*.

For V ≤ 100Vdc

≥3750 MΩ for C ≤ 0.33μF (50000 MΩ)*

≥1250 seconds for C > 0.33μF (5000 s)*

*Typical value

Test voltage between terminations:

1.6 × V_n applied for 2 sec. at +25°C ±5°C

Max pulse rise time (dv/dt) and pulse characteristics (K₀):

V _R	C	dv/dt (V/μs)	K ₀ (V ² /μs)
50		4	400
63		8	1000
100	C > 6800pF 3300 > C ≤ 6800pF C ≤ 3300pF	10	2000
		15	3000
		30	6000
250		20	10000
400		40	32000

If the working voltage (V) is lower than the rated voltage (V_n), the capacitor may work at higher dv/dt. In this case the maximum value allowed is obtained multiplying the above value (see table dv/dt) with the ratio V_R/V. The pulse characteristic K₀ depends on the voltage waveform and in any case it cannot exceed the value given in the above table.

Reliability:

Reference MIL HDB 217-E

Application conditions

Temperature: 40°C

Voltage: 0.5 × V_n

Failure rate: ≤1Fit

(1 FIT = 1 × 10⁻⁹ failures/components × h)

Failure criteria

(according to DIN 44122)

Short or open circuit

Capacitance change ΔC/C: ≤ ±10%

DF change Δtgδ: > 2 × limit value

Insulation resistance: < 0.005 × limit value

TEST METHOD AND PERFORMANCE

Damp heat test:

Test conditions

Temperature: +40°C

Relative humidity: 93% ±2%

Test duration: 21 days

Performance

Capacitance change ΔC/C: ≤ ±5%

DF change Δtgδ:

≤ 50 × 10⁻⁴ at 1KHz

Insulation resistance:

≥ 50% of limit value

TEST METHOD AND PERFORMANCE (Cont.)

Life test:

Test conditions

Temperature: +85°C

Test duration: 1000h

Voltage applied: 1.25 × V_n

Performance

Capacitance change ΔC/C: ≤ ±5%

DF change Δtgδ:

≤ 50 × 10⁻⁴ at 10KHz

Insulation resistance:

≥ 50% of limit value

Soldering:

Test conditions

Soldering temperature: 260°C ±5°C

Soldering duration: 5 sec. ±1 sec.

Performance

Capacitance change ΔC/C: ≤ ±2%

DF change Δtgδ:

≤ 30 × 10⁻⁴ at 10KHz

Insulation resistance: ≥ limit value

Long term stability (after two years):

Storage - Standard environmental conditions.

Performance

Capacitance change ΔC/C: ≤ ±3%

RATED VOLTAGE ($V_{r.m.s.}$) VERSUS FREQUENCY (Sinusoidal Wave-Form)
(Capacitance values are in μF)

