

Metallized Polyester Film Capacitors - MKT In Heat Shrinkable Tube

Construction

Dielectric: polyethylene terephthalate
Stacked-film technology
Lead spacing 5 mm

Heat shrinkable tube:
(Polyester 100 μ m; 125°C)

Features

Very small dimensions
Self-healing properties
High pulse strength

Terminals

Parallel wire leads, tinned
Lead spacing 5,0 mm

Marking

Manufacturer's logo,
rated capacitance (coded),
capacitance tolerance (code letter),
rated ac voltage,
date of manufacture (coded)

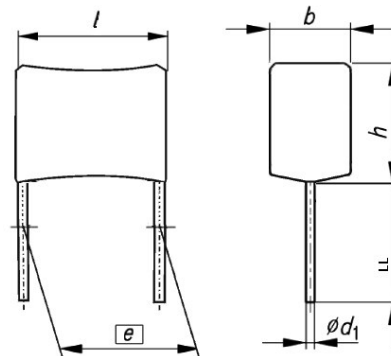
Delivery mode

Bulk (untaped)
Taped (Ammo pack or reel)

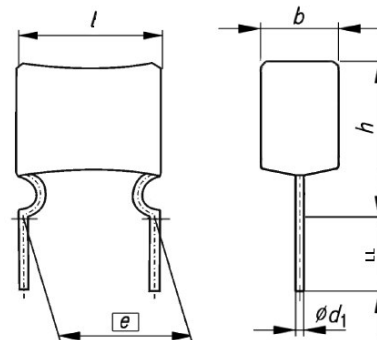
Detail specifications

Homologated in accordance with IEC 384-2

Straight Leads



Conformed Leads "Kink"



Dimensions in mm	
Lead spacing	Lead Diameter
$5 \pm 0,4$	0,5

Ordering codes and pack units

Vr (Vrms, f ≤ 60 Hz)	CR	Maximum Dimensions ¹ (straight leads)	Maximum Dimensions ² (crimped leads)	Ordering code ³ (capacitance tolerance, code end)	Packing units (pcs)		
		b x h x l (mm)	b x h x l (mm)		Ammo pack	Reel pack	Untaped (bulk)
63 Vdc (40 Vac)	0,22 µF	2,0 x 5,5 x 7,0	2,0 x 9,0 x 7,0	B32559-C0224-+***	4000	3200	3000
	0,33 µF	2,5 x 6,0 x 7,0	2,5 x 9,5 x 7,0	B32559-C0334-+***	3200	2700	2700
	0,47 µF	3,0 x 6,5 x 7,0	3,0 x 10,0 x 7,0	B32559-C0474-+***	2700	1900	2500
	0,68 µF	3,0 x 8,5 x 7,0	3,0 x 12,0 x 7,0	B32559-C0684-+***	2700	1900	2000
	1,0 µF	4,0 x 9,0 x 7,0	-	B32559-C0105-+***	2000	1700	1500
100 Vdc (63 Vac)	33 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C1333-+***	3200	2800	3000
	47 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C1473-+***	3200	2800	3000
	56 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C1563-+***	3200	2800	3000
	68 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C1683-+***	3200	2800	3000
	0,1 µF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C1104-+***	3200	2800	3000
	0,12 µF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C1124-+***	3200	2800	3000
	0,15 µF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C1154-+***	3200	2800	3000
	0,22 µF	2,5 x 7,0 x 7,0	2,5 x 10,5 x 7,0	B32559-C1224-+***	3200	2800	2800
	0,33 µF	3,0 x 8,0 x 7,0	3,0 x 11,5 x 7,0	B32559-C1334-+***	2700	2200	2200
	0,47 µF	3,5 x 8,0 x 7,0	3,5 x 11,5 x 7,0	B32559-C1474-+***	2300	1700	1700
250 Vdc (160 Vac)	22 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C3223-+***	3200	2800	3000
	27 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C3223-+***	3200	2800	3000
	33 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C3333-+***	3200	2800	3000
	47 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C3473-+***	3200	2800	3000
	56 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C3563-+***	3200	2800	3000
	68 nF	3,0 x 7,0 x 7,0	3,0 x 10,5 x 7,0	B32559-C3683-+***	2700	2200	2500
	82 nF	3,0 x 8,0 x 7,0	3,0 x 11,5 x 7,0	B32559-C3823-+***	2700	2200	2200
	0,1 µF	3,0 x 8,5 x 7,0	3,0 x 12,0 x 7,0	B32559-C3104-+***	2700	2200	2000
	0,12 µF	3,5 x 8,5 x 7,0	-	B32559-C3124-+***	2300	1700	1500
	0,15 µF	4,5 x 8,5 x 7,0	-	B32559-C3154-+***	1800	1500	1500
400 Vdc (200 Vac)	6,8 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C6682-+***	3200	2800	3000
	8,2 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C6822-+***	3200	2800	3000
	10 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C6103-+***	3200	2800	3000
	12 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C6123-+***	3200	2800	3000
	15 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C6153-+***	3200	2800	3000
	22 nF	2,5 x 6,5 x 7,0	2,5 x 10,0 x 7,0	B32559-C6223-+***	3200	2800	3000
	27 nF	2,5 x 7,0 x 7,0	2,5 x 10,5 x 7,0	B32559-C6273-+***	3200	2800	2800
	33 nF	3,0 x 7,0 x 7,0	3,0 x 10,5 x 7,0	B32559-C6333-+***	2700	2300	2500
	47 nF	3,5 x 7,0 x 7,0	3,5 x 10,5 x 7,0	B32559-C6473-+***	2300	1900	2500
	56 nF	4,0 x 7,5 x 7,0	-	B32559-C6563-+***	2000	1700	1700
	68 nF	4,5 x 8,0 x 7,0	-	B32559-C6683-+***	1800	1500	1500
	0,1 µF	5,5 x 10,0 x 7,0	-	B32559-C6104-+***	1400	1100	1000
	0,12 µF	5,5 x 11,0 x 7,0	-	B32559-C6124-+***	1400	1100	1000
630 Vdc (400 Vac)	1,0 nF	3,0 x 7,0 x 7,0	3,0 x 10,5 x 7,0	B32559-C8102-+***	2700	2300	2500
	1,5 nF	3,0 x 7,0 x 7,0	3,0 x 10,5 x 7,0	B32559-C8152-+***	2700	2300	2500
	2,2 nF	3,0 x 7,0 x 7,0	3,0 x 10,5 x 7,0	B32559-C8222-+***	2700	2300	2500
	2,7 nF	3,5 x 7,5 x 7,0	3,5 x 11,0 x 7,0	B32559-C8272-+***	2300	1900	2000
	3,3 nF	3,5 x 7,5 x 7,0	3,5 x 11,0 x 7,0	B32559-C8332-+***	2300	1900	2000
	4,7 nF	3,5 x 8,0 x 7,0	3,5 x 11,5 x 7,0	B32559-C8472-+***	2300	1900	2000
	6,8 nF	3,5 x 8,0 x 7,0	3,5 x 11,5 x 7,0	B32559-C8682-+***	2300	1900	2000
	8,2 nF	3,5 x 8,0 x 7,0	3,5 x 11,5 x 7,0	B32559-C8822-+***	2300	1900	2000
	10 nF	3,5 x 8,0 x 7,0	3,5 x 11,5 x 7,0	B32559-C8103-+***	2300	1900	2000

¹ Straight leads; ² Conformed leads "Kink". ³ Replace the + by the code letter for the required capacitance tolerance. **Capacitance tolerance:** ±20 % = M, ±10 % = K, ±5 % = J.

Code end: Replace the *** by the code number for the required lead length or packing:

000 = lead length 6 mm (untaped bulk "kink" wire); **001** = lead length 6mm (untaped bulk straight lead); **289** = taped, Ammo pack ("kink" leads); **489** = taped, Ammo pack (straight leads).

Technical Data

Climatic category in accordance with IEC 68-1 Lower category temperature T_{min} Upper category temperature T_{max} Damp heat test Limit values after damp heat test	55/125/56 - 55 °C + 125 °C 56 days/40 °C/93 % relative humidity Capacitance change $ \Delta C/C $ ≤ 5 % Dissipation factor change $\Delta \tan \delta$ ≤ $5 \cdot 10^{-3}$ (at 1 kHz) Insulation resistance R_{is} ≥ 50 % of minimum or time constant $\tau = C_R \cdot R_{is}$ as-delivered values		
Reliability: Reference conditions	0,5 · V_r ; 40 °C		
Failure rate Service life	$1 \cdot 10^{-9} / h = 1$ fit 200 000 h		
Failure criteria: Total failure Failure due to variation of parameters	Short circuit or open circuit Capacitance change $\Delta C/C$ > 10% Dissipation factor $\tan \delta$ 2 · upper limit value Insulation resistance R_{is} < 150 MΩ ($C_R \leq 0,33 \mu F$) Or time constant $\tau = C_R \cdot R_{is}$ < 50s ($C_R > 0,33 \mu F$)		
DC test voltage	1,4 · V_r , 2s		
Category voltage V_c Operation with dc voltage or ac voltage V_{rms} up to 60 Hz	T_A (°C)	DC voltage derating	AC voltage derating
	$T_A \leq 85$ $85 < T_A \leq 125$	$V_C = V_R$ $V_C = V_R \cdot (165 - T_A)/80$	$V_{C,rms} = V_{rms}$ $V_{C,rms} = V_{rms} \cdot (165 - T_A)/80$
Operating voltage for short operating periods	T_A (°C)	DC voltage (max. hours)	AC voltage (max hours)
	$T_A \leq 100$ $100 < T_A \leq 125$	$V_{op} = 1,25 \cdot V_C$ (2000h) $V_{op} = 1,25 \cdot V_C$ (1000h)	$V_{op} = 1,0 \cdot V_{C,rms}$ (2000h) $V_{op} = 1,0 \cdot V_{C,rms}$ (1000h)
Dissipation factor $\tan \delta$ (in 10^{-3}) at 20 °C (upper limit values)	at 1 kHz 10 kHz 100 kHz	$C_R \leq 0,1 \mu F$ 8 15 30	$0,1 \mu F < C_R \leq 1 \mu F$ 10 20 -
Insulation resistance R_{is} or time constant $\tau = C_R \cdot R_{is}$ at 20 °C, rel. humidity ≤ 65 % (minimum as-delivered values)	V_r ≤ 100 Vdc ≥ 250 Vdc	$C_R \leq 0,33 \mu F$ 3750 MΩ 7500 MΩ	

Pulse Handling capability

V_r	Max. rate of voltage rise V_{pp}/τ in V/μs (for $V_{pp} = V_r$)
63 Vdc	250
100 Vdc	300
250 Vdc	400
400 Vdc	600
630 Vdc	800

V_r	Pulse characteristic k_o in $V^2/\mu s$ (for $V_{pp} \leq V_r$)
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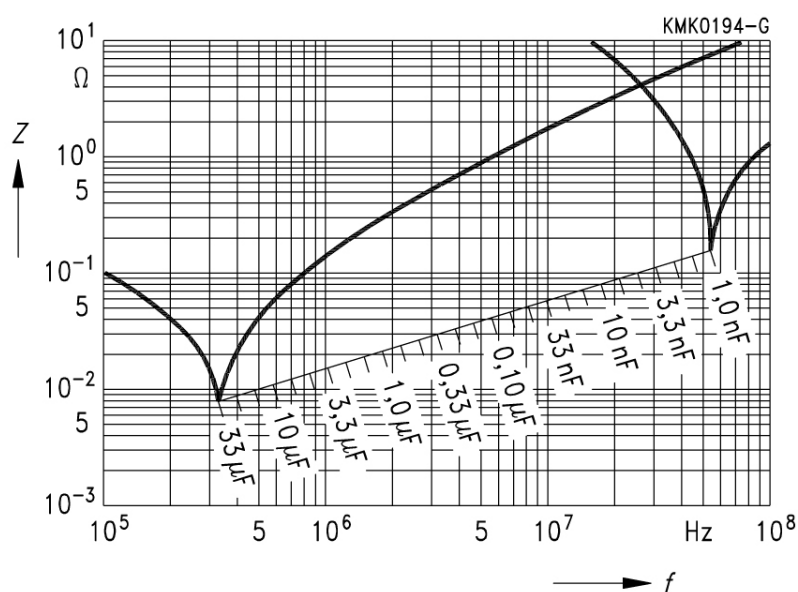
63 Vdc	30 000
100 Vdc	60 000
250 Vdc	200 000
400 Vdc	500 000
630 Vdc	1 000 000

Soldering conditions

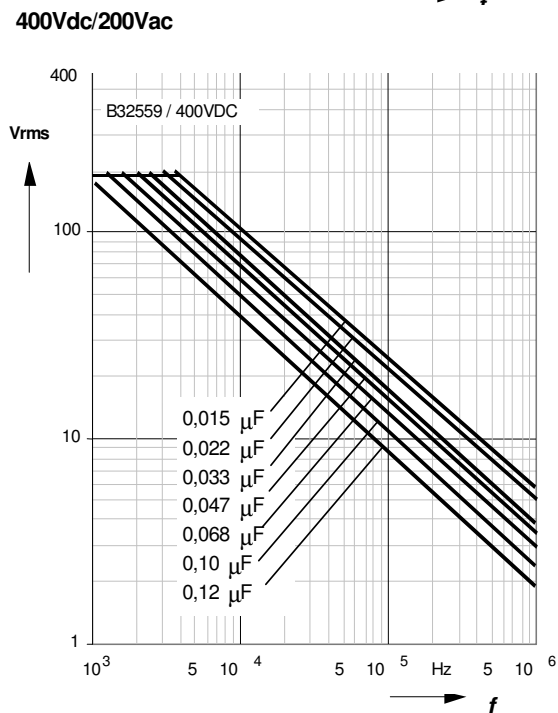
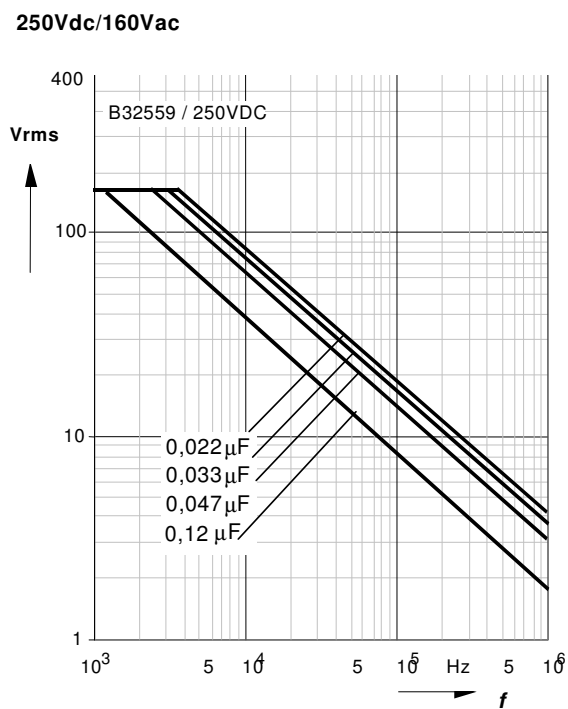
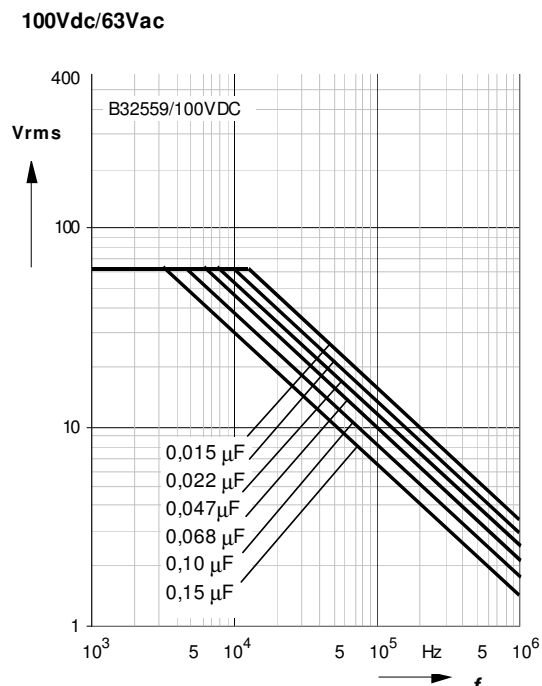
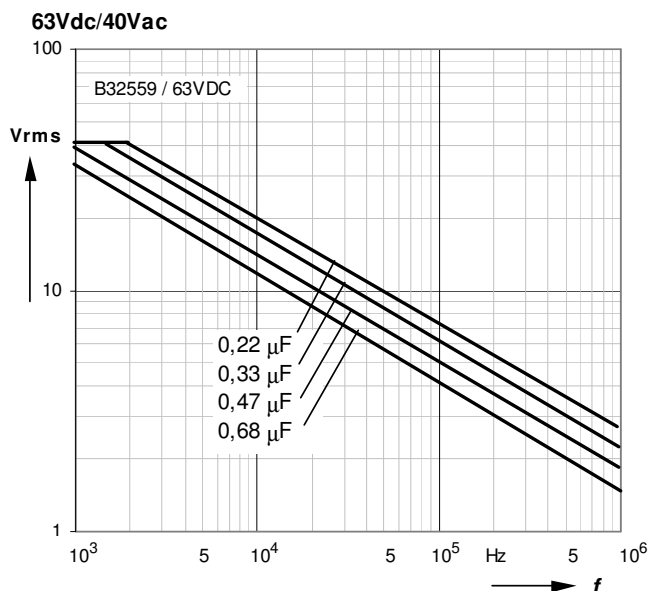
Maximum solder bath temperature: 245 °C

Maximum soldering time: 4s

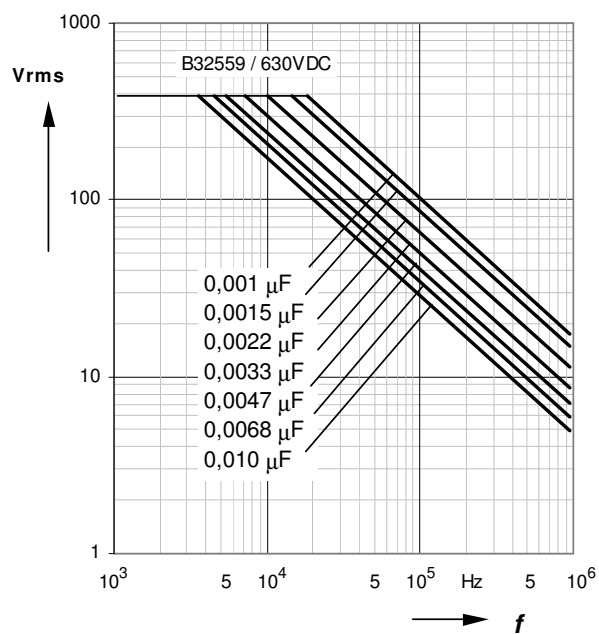
Impedance Z versus frequency f (typical values)



Permissible ac voltage V_{rms} versus frequency f

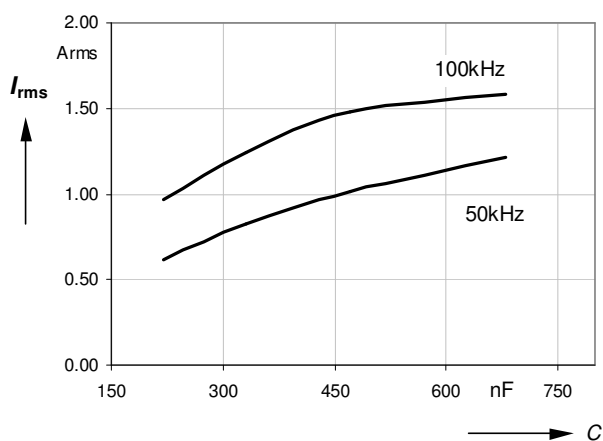


630Vdc/400Vac

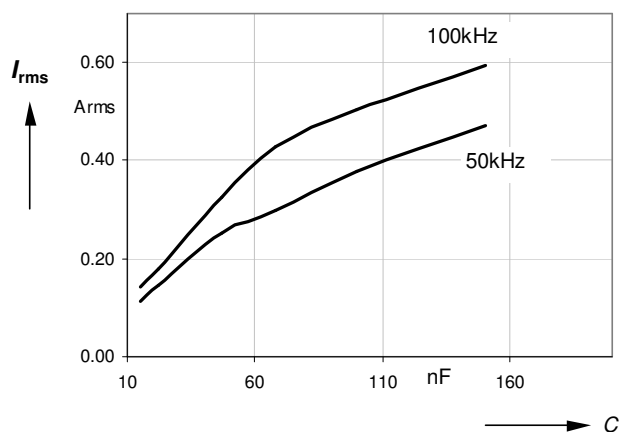


Permissible ac current I_{rms} versus frequency f

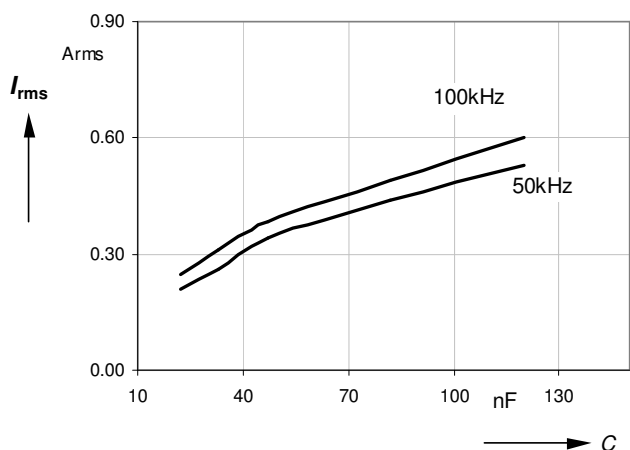
63Vdc/40Vac



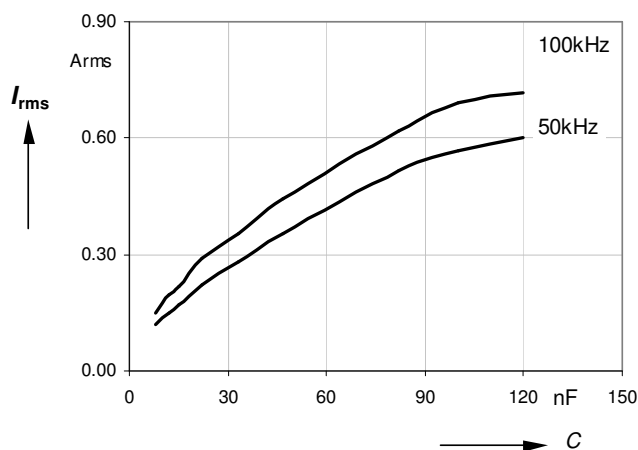
100Vdc/63Vac



250Vdc/160Vac



400Vdc/200Vac



630Vdc/400Vac

