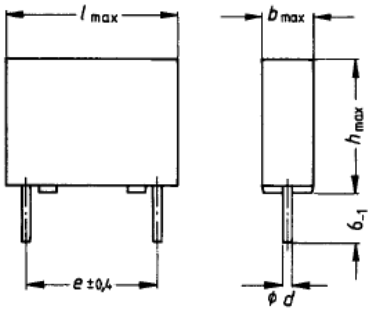
Metallized polypropylene capacitors – Standard version

Self-healing flat capacitor winding, comprising a polypropylene dielectric. Epoxy resin sealed to ensure resistance to humidity; flame retardant seal. The capacitor is provided with spacers to improve solderability in the solder bath. Parallel leads, plug-in.

These pulse-proof capacitors are particularly suited for use in deflection and high voltage stages of TV sets; e.g. as storage and S-correction capacitor (400 V series), as commutation capacitor in thyristor deflection circuits (1000 V series) and as line flyback capacitor (1500 V series).



Dimensions in mm

l	e
18	15
27	22,5
32	27,5

Climatic category in accordance with DIN 40040 Minimum limit temperature Maximum limit temperature Humidity category	**G P F** **G** −40°C/−40°F **P** + 85°C/+185°F **F**[1] average relative humidity ≦ 75% 95% for 30 days per year; continuously 85% for the remaining days; occasionally
Test category in accordance with DIN 40045 and IEC publ. 68-1 Damp heat test in accordance with DIN 40046, sheet 5 or IEC publ. 68-2-3	**40/085/21** **Conditions** Test temperature +40°C/+104°F Relative humidity $(93\pm\frac{2}{3})$ % Test duration 21 days **Test criteria** Capacitance change $\frac{\Delta C}{C}$ ≦±3% Dissipation factor change Δ tan δ ≦ 0.5 x 10^{-3} (at 1 kHz) ≦ 1 x 10^{-3} (at 10 kHz) Insulation resistance ≧ 50% of the minimum value at delivery

[1] The capacitors also meet the test conditions of humidity category E as to DIN 40040.

Rated voltage U_R AC voltage U_C		400 V_{dc} 500 V_{PP} [1]	1000 V_{dc} 700 V_{PP}	1500 V_{dc} 1500 V_{PP}
Rated capacitance C_R [2]	Tolerance	Dimensions *b x h x l* Ordering code		
1,2 nF		–	–	7,3×16,5×27 B32650–J1122–•
1,5 nF		–	–	7,3×16,5×27 B32650–J1152–•
1,8 nF		–	–	7,3×16,5×27 B32650–J1182–•
2,2 nF		–	–	7,3×16,5×27 B32650–J1222–•
3,3 nF		–	–	7,3×16,5×27 B32650–J1332–•
4,7 nF		–	–	7,3×16,5×27 B32650–J1472–•
6,8 nF		–	–	8,5×18,5×27 B32650–J1682–•
0,01 µF		–	–	10,5×19×27 B32650–J1103–•
0,015 µF	± 5% ≙ J ± 10% ≙ K	–	–	12×21×27 B32650–J1153–•
0,022 µF		–	9×15,5×18 B32650–J0223–•	11,5×21×32 B32650–J1223–•
0,033 µF		–	9×15,5×18 B32650–J0333–•	–
0,047 µF		–	7,3×16,5×27 B32650–J0473–•	–
0,068 µF		–	8,5×18,5×27 B32650–J0683–•	–
0,1 µF		7,3×13×18 B32650–J4104–•	10,5×19×27 B32650–J0104–•	–
0,15 µF		9×15,5×18 B32650–J4154–•	12×21×27 B32650–J0154–•	–
0,22 µF		9×15,5×18 B32650–J4224–•	13,5×23×32 B32650–J0224–•	–
0,33 µF		7,3×16,5×27 B32650–J4334–•	–	–
0,47 µF		8,5×18,5×27 B32650–J4474–•	–	–
0,68 µF		10,5×19×27 B32650–J4684–•	–	–
1,0 µF		11,5×21×32 B32650–J4105–•	–	–
1,5 µF		13,5×23×32 B32650–J4155–•	–	–

• When ordering, the code letter for the requested tolerance must be substituted for•

1) With unipolar pulse load U_{ac} = 400 V_P
2) Intermediate values upon request

Resistance to vibration
Test F_c: Vibration
partial test B1 in accordance with DIN 40046, sheet 8 and IEC publ. 68-2-6

Duration of endurance conditioning	6 hours
Frequency range	10 to 55 Hz
Displacement amplitude	0.75 mm (conforming to max. 98.1 m/s² or 10 g)

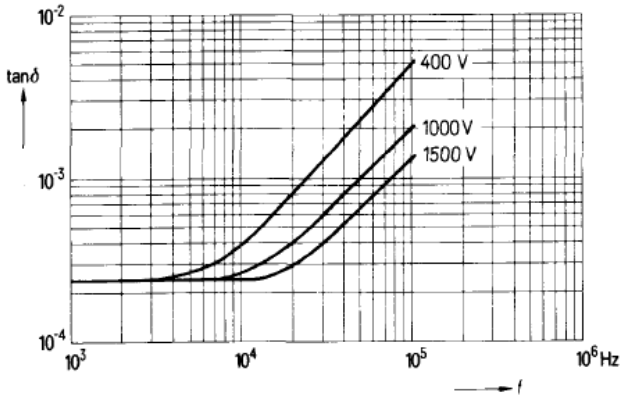
Solder conditions

Temperature of the solder bath	max. 260 °C/500 °F
Soldering duration	max. 10 s.

Capacitance drift i_Z: ± 2%

Dissipation factor tan δ
as a function of frequency *f*
average values

Parameter: Voltage series
max. lead spacing

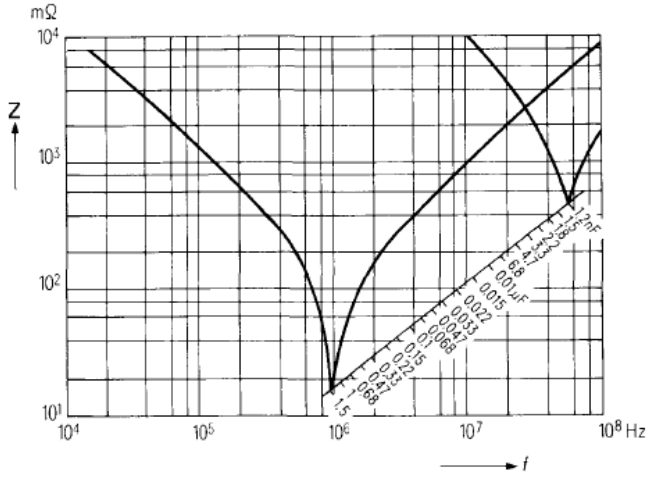


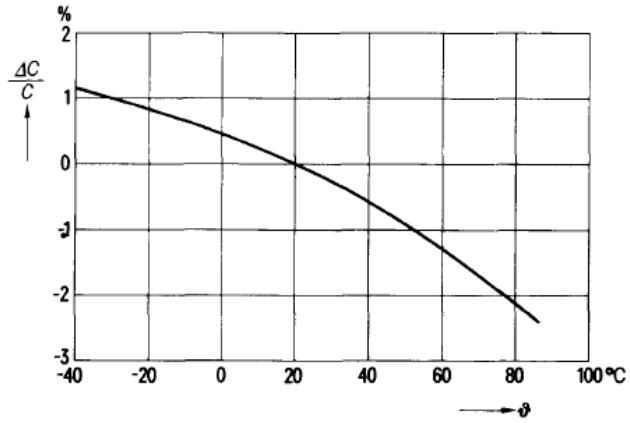
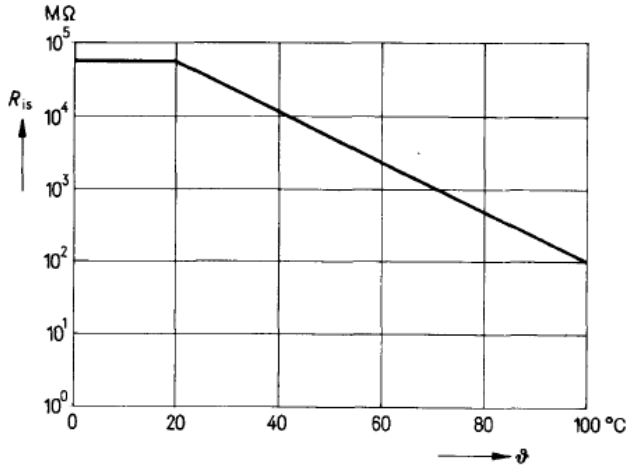
Dissipation factor tan δ
measured at 20 °C/68 °F

	Minimum value		Average value	
	$C \leqq 1\ \mu F$	$C > 1\ \mu F$	$C \leqq 1\ \mu F$	$C > 1\ \mu F$
for 1 kHz	$0.5 \cdot 10^{-3}$	$0.5 \cdot 10^{-3}$	$0.25 \cdot 10^{-3}$	$0.25 \cdot 10^{-3}$
for 10 kHz	$0.8 \cdot 10^{-3}$	$1.2 \cdot 10^{-3}$	$0.4 \cdot 10^{-3}$	$0.6 \cdot 10^{-3}$

Self inductance: approx. 20 nH

Impedance *Z*
as a function of frequency *f*
(typical values)



Voltage load	
Test voltage U_t	$1.5 \times U_R$
Category voltage U_c	$1.0 \times U_R$
Reversible capacitance change $\frac{\Delta C}{C}$ as a function of temperature at 1 kHz (typical values)	
Insulation resistance R_{is} as a function of temperature ϑ	
Minimum value[1]	
for $C \leqq 0.33$ µF	30 000 MΩ
for $C > 0.33$ µF	10 000 s
Average value	
for $C \leqq 0.33$ µF	> 75 000 MΩ
for $C > 0.33$ µF	> 25 000 s

[1] The indicated values are applicable at the time of delivery. During operational life the insulation may decrease for a short period to about 10 % of the values at the time of delivery, especially when the max. permissible humidity of 95 % is applied for a long period, or when the capacitor is operated close to the max. operating temperature limit.

Inherent heating Power loss at 10 °C/18 °F excess temperature of the case (typical values)	90 mW (capacitor length 18 mm) 160 mW (capacitor length 27 mm) 260 mW (capacitor length 32 mm)

Pulse handling capability (voltage rate of rise U_{pp}/τ and pulse characteristic k_o)
Maximum permissible voltage change per time unit with non-sinusoidal voltage load (pulse, sawtooth).

Rated voltage U_R	Perm. ac voltage U_{pp} perm.		Pulse handling capability		
			Capacitor length		
			18 mm	27 mm	32 mm
400 Vdc	500 V_{pp}	U_{pp}/τ k_O	50 V/µs 0.5×10^5 V^2/µs	30 V/µs 0.3×10^5 V^2/µs	20 V/µs 0.2×10^5 V^2/µs
1000 Vdc	700 V_{pp}	U_{pp}/τ k_O	215 V/µs 3×10^5 V^2/µs	115 V/µs 1.6×10^5 V^2/µs	90 V/µs 1.25×10^5 V^2/µs
1500 Vdc	1500 V_{pp}	U_{pp}/τ k_O	– –	430 V/µs 13×10^5 V^2/µs	330 V/µs 10×10^5 V^2/µs

For a voltage swing $U_{pp} < U_{pp\ perm.}$ the value of the permissible voltage rate of rise U_{pp}/τ can be multiplied with the factor $U_{pp\ perm.}/U_{pp}$. The data of the nomogram must be accounted for periodic pulses. See also "General Technical Data", para. 5.2.6.