

Capacitors

Type KNU

Metallized polypropylene capacitors

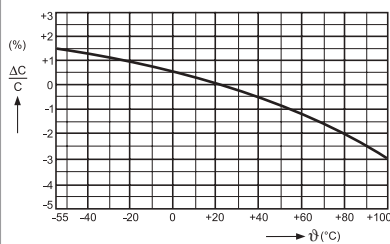
As a dielectric a high quality polypropylene film of excellent electrical properties is used. Electrodes are of vacuum evaporated metal on dielectric. Leads are electrically welded on

contact surface of capacitors. So the possibility for bad contact or even loss of contact during the operation of capacitors is excluded.

Typical electrical characteristics of metallized polypropylene capacitors KNU

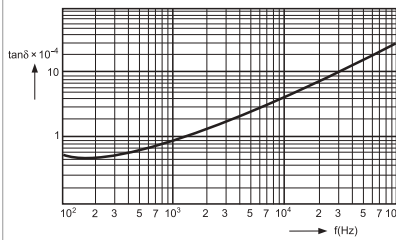
Variation of capacitance as a function of temperature

$$\frac{\Delta C}{C} = f(\vartheta) \text{ at } 1 \text{ kHz}$$



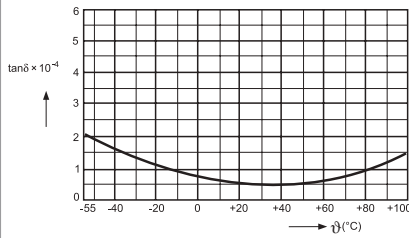
Variation of dissipation factor (tanδ) as a function of frequency

$$\tan \delta = f(f)$$



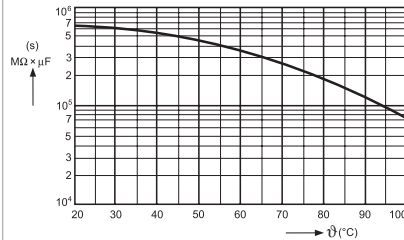
Variation of dissipation factor (tanδ) as a function of temperature

$$\tan \delta = f(\vartheta) \text{ at } 1 \text{ kHz}$$



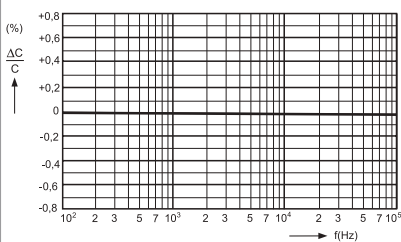
Variation of insulation resistance as a function of temperature

$$R_i = f(\vartheta)$$



Variation of capacitance as a function of frequency

$$\frac{\Delta C}{C} = f(f)$$



Capacitors

Type KNU 1910

radial leads, pitch 10 mm to 27,5 mm

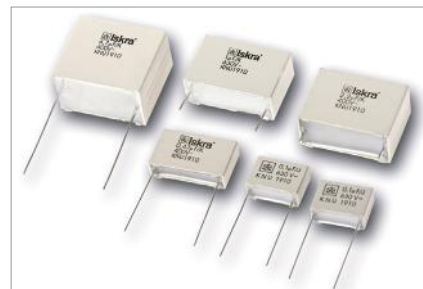
TECHNICAL DATA

General technical data

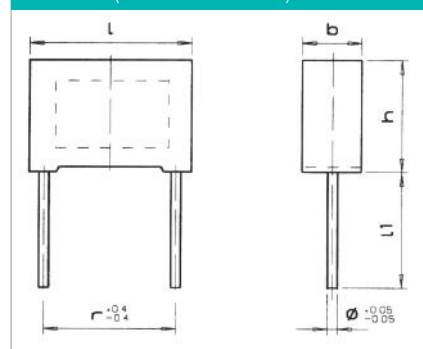
Dielectric:	polypropylene film
Electrodes:	vacuum metallized on dielectric
Winding:	non-inductive construction, flat shape
Leads:	tinned copper wire, standard lengths l_1 : $4^{\pm 0,5}$; 6^{-1} ; $25^{\pm 5}$. Other lead lengths on request.
Encapsulation:	flame-retardant plastic case with flame-retardant epoxy resin seal, UL 94 V-0, resistant to wash in halogenated solvents
Marking:	Iskra symbol, capacitance, tolerance, rated voltage, type designation
Climatic category:	55/100/56 IEC 60068-1
Temperature range:	- 55 °C to + 100 °C
Complies with standards:	IEC 60384-16

Electrical data

Capacitance range:	1000 pF to 6,8 μ F
Standard values of capacitance (C_R):	range E6
Capacitance tolerance:	$\pm 20\%$ (M); $\pm 10\%$ (K) and $\pm 5\%$ (J) on special request
Temperature coefficient of capacitance (T_C):	appr. - 200 $\times 10^{-6}$ / °C
Rated voltage (U_R):	250 V DC, 400 V DC, 630 V DC, 1000 V DC, 1600 V DC
Allowed alternative voltage up to 60 Hz:	160 V AC, 220 V AC, 250 V AC, 300 V AC, 500 V AC
Category voltage (U_C):	up to + 85 °C $U_C = U_R$; from + 85 °C to + 100 °C voltage U_R is lowered for 1,35 % per 1 °C
Test voltage:	$1,6 \times U_R$, 2 s
Insulation resistance (R_i) at 20 °C:	≥ 100000 M Ω at 20 °C for $C_R \leq 0,33$ μ F $R_i \times C_R \geq 30000$ s at 20 °C for $C_R > 0,33$ μ F
Self inductance:	appr. 10 nH/cm length of capacitor and leads
Soldering on printed circuit boards:	temperature of soldering bath 270 °C max., soldering time 5 s max.



KNU1910 (dimensions in mm)



Diameter of leads:

r (mm)	ϕ (mm)
10	0,6
15; 22,5; 27,5	0,8

Pulse loading (du/dt):

U_R (V DC)	Pitch r (mm)			
	10	15	22,5	27,5
	Allowed pulse loading (V/ μ s)			
250	180	120	60	45
400	200	150	90	65
630	230	180	120	90
1000	-	210	130	100
1600	-	450	190	140

Dissipation factor (tan δ):

f (kHz)	$C_R \leq 0,1 \mu F$	$0,1 \mu F < C_R \leq 1 \mu F$	$C_R > 1 \mu F$
1	$\leq 5 \times 10^{-4}$	$\leq 5 \times 10^{-4}$	$\leq 5 \times 10^{-4}$
10	$\leq 10 \times 10^{-4}$	$\leq 20 \times 10^{-4}$	-
100	$\leq 30 \times 10^{-4}$	-	-

Dimensional data: KNU1910

Capacitance (μF)	Rated voltage U_R																			
	250 V DC				400 V DC				630 V DC				1000 V DC				1600 V DC			
	$l_{max.}$	$h_{max.}$	$b_{max.}$	r	$l_{max.}$	$h_{max.}$	$b_{max.}$	r	$l_{max.}$	$h_{max.}$	$b_{max.}$	r	$l_{max.}$	$h_{max.}$	$b_{max.}$	r	$l_{max.}$	$h_{max.}$	$b_{max.}$	r
	(mm)				(mm)				(mm)				(mm)				(mm)			
0,001																	18	11	5	15
0,0015																	18	11	5	15
0,0022																	18	11	5	15
0,0033																	18	11	5	15
0,0047									13	9	4	10					18	11	5	15
0,0068									13	9	4	10					18	11	5	15
0,01					13	9	4	10	13	9	4	10	18	11	5	15	18	11	5,5	15
0,015					13	9	4	10	13	9,5	4,3	10	18	11	5	15	18	13	7	15
0,022	13	9	4	10	13	9	4	10	13	10,5	5	10	18	11	5	15	18	14,5	8,5	15
0,033	13	9	4	10	13	9,5	4,3	10	13	11,5	6	10	18	11	5,5	15	26,5	15	6	22,5
0,047	13	9	4	10	13	10,5	5	10	18	11	5	15	18	13	7	15	26,5	16	7	22,5
0,068	13	9,5	4,3	10	13	11,5	6	10	18	11	5,5	15	18	13,5	7,5	15	26,5	18,5	9	22,5
0,1	13	10,5	5	10	18	11	5	15	18	13	7	15	26,5	15	6	22,5	26,5	20,5	11	22,5
0,15	13	11,5	6	10	18	11	5,5	15	18	14,5	8,5	15	26,5	16,5	7,5	22,5	31,5	21	12	27,5
0,22	18	11	5	15	18	13	7	15	26,5	15	6	22,5	26,5	18,5	9	22,5	31,5	23,5	14	27,5
0,33	18	12	6	15	18	14,5	8,5	15	26,5	16,5	7,5	22,5	31,5	19	10	27,5	31,5	26,5	17	27,5
0,47	18	13	7	15	26,5	16	7	22,5	26,5	18,5	9	22,5	31,5	21	12	27,5				
0,68	18	14,5	9	15	26,5	17	8,5	22,5	26,5	20,5	11	22,5	31,5	23,5	14	27,5				
1	26,5	15	6	22,5	26,5	18,5	10	22,5	31,5	21	12	27,5	31,5	26,5	17	27,5				
1,5	26,5	17	8,5	22,5	31,5	19	10	27,5												
2,2	26,5	20,5	11	22,5	31,5	23,5	14	27,5												
3,3	31,5	21	12	27,5																
4,7	31,5	23,5	14	27,5																
6,8	31,5	26,5	17	27,5																

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