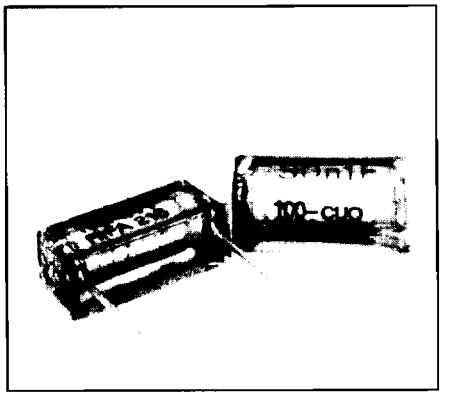
PFE 216

- Low height
- Long term capacitance stability
- Low and reproducible temperature coefficient
- Very low dissipation factor
- Very high insulation resistance



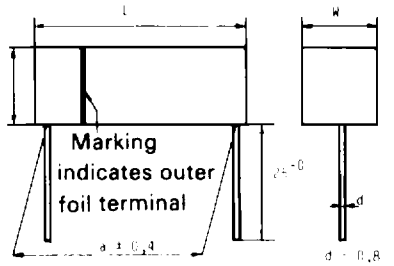
Applications

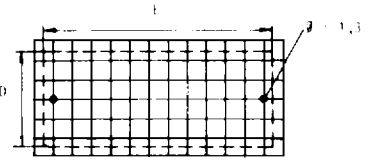
High stability LC-filters as well as RC-filters, timing.

Basic design

PFE 216 uses polystyrene (PS) as a dielectric. The electrodes consist of foils. The extended foil design has the terminal leads soldered directly to the foils.

Encapsulated in self-extinguishing epoxy resin (UL 94 V-0).





Space required on mass-soldered PC boards.

Specification

Rated voltage U_R	100 VDC	200 VDC	500 VDC
Rated capacitance C_R	1.5—250 nF	1—100 nF	0.47—55 nF
Capacitance tolerance $\Delta C/C_R$	±1%, ±2%, ±5% (minimum ±2 pF)		
Climatic category	40/85/21		
	40/85/56	for C≥33nF U_R= 100 VDC	
IEC standard	384-7, Stability class 1		

Technical data

Dissipation factor
$\tan\delta \leq 2\times10^{-4}$ forC<100nF at 1 kHz
$\leq 3\times10^{-4}$ forC<100nF at 1 kHz

Temperature coefficient
$-(110\pm30)\times10^{-6}/°C$

Test voltage
No test between terminals and case.
Between terminals $2\times U_R$.

Humidity resistance
Following requirements are met after 21 days at +40°C and 90—95% RH

Change of capacitance $\Delta C/C \leq 0.5\%$

Insulation resistance: ≥250 GΩ
After 56 days for C≥33000 pF and U_R = 100 VDC

Change of capacitance $\Delta C/C \leq 0.5\%$

Insulation resistance: ≥10000 MΩ

Insulation resistance
It is measured at +23°C and after 60 sec
Test voltage 100 VDC
Insulation resistance: ≥500 GΩ

Long term stability
The following requirements of max capacitance instability are met by the capacitor when operated at rated voltage (U_R).
±(0.2% + 0.4 pF) after ≤ 3 years at max +50°C and at an average R.H. of max 70%.

Reliability
The failure of PFE 216 is so low that reliability data referring to normal operational cannot be achieved in laboratory tests. However, operational statistics for a total of 51×10^9 unit-hours have revealed a mean failure rate of $<10^{-10}$/h.

Terminals
For B/D/E sizes heavily tinned copper leads. For F size heavily tinned copper clad steel wires.

Article table

U_R	C_R	Max dimensions in mm				Max space requirements in mm		Quantity/ package	Weight	Article code 1st block
	nF	L	W	H	a	D	E	pcs	g	
	>1.5-8	14.5	6.0	7.0	10.2	6.8	17.0	400	1.3	PFE 216DB
	>8-33	19.0	7.0	8.0	15.2	7.8	21.5	400	2.0	PFE 216DC
100 VDC	>33-100	29.5	8.7	10.0	25.4	9.3	32.0	200	3.5	PFE 216DD
	>100-150	29.5	10.1	12.0	25.4	10.8	32.0	200	5.5	PFE 216DE
	>150-250	29.5	13.5	14.5	25.4	14.3	32.0	150	11.0	PFE 216DF
	>1-1.5	14.5	6.0	7.0	10.2	6.8	17.0	400	1.3	PFE 216GB
	>1.5-8	19.0	7.0	8.0	15.2	7.8	21.5	400	2.0	PFE 216GC
200 VDC	>8-50	29.5	8.7	10.0	25.4	9.3	32.0	200	3.5	PFE 216GD
	>50-70	29.5	10.1	12.0	25.4	10.8	32.0	200	5.5	PFE 216GE
	>70-100	29.5	13.5	14.5	25.4	14.3	32.0	150	11.0	PFE 216GF
	0.047-1	14.5	6.0	7.0	10.2	6.8	17.0	400	1.3	PFE 216LB
	>1-5	19.0	7.0	8.0	15.2	7.8	21.5	400	2.0	PFE 216LC
500 VDC	>5-17	29.5	8.7	10.0	25.4	9.3	32.0	200	3.5	PFE 216LD
	>17-26	29.5	10.1	12.0	25.4	10.8	32.0	200	5.5	PFE 216LE
	>26-55	29.5	13.5	14.5	25.4	14.3	32.0	150	11.0	PFE 216LF

Ordering information

Article code	
Example: 3.15 nF, 1 %	
1st block See "Article table"	Pos 9 No. of digits in the capacitance value (pF) Pos 10-12 The 3 significant digits in the cap value Pos 13 Tolerance code (F = ±1%, G = ±2%, J = ±5%)
P F E 2 1 6 D B 4 3 1 5 F	
1 2 3 4 5 6 7 8 9 10 11 12 13	

Marking

The capacitors are marked with:

- RIFA
- RIFA article code
- Rated capacitance
- Tolerance on rated capacitance, (see RIFA article code system on page 3)
- Rated voltage
- Code for manufacturing date (month and year)
- type designation unless otherwise specified under each detail specification.

Packing

The capacitors are packed bulk in a box with dimensions 230×155×72 mm for capacitor types PFE 210, 216 and with the dimensions 146×55×62 mm for capacitor types PFE 225, PHE 425.