PFR

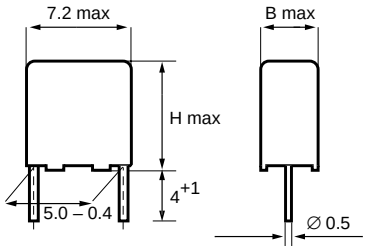
- **Polypropylene film/foil capacitor**
- **According to IEC 60384-13**

TYPICAL APPLICATIONS

High speed applications requiring low losses at high frequencies and high dU/dt. Typical applications electrical ballasts,TV/ video, telecommunications.

CONSTRUCTION

Capacitor with polypropylene film and metal foil electrodes. Radial leads of tinned wire are electrically welded to the winding. Encapsulation in self-extinguishing material meeting the requirements of UL 94V-0.



GENERAL DATA

Rated voltage U_R, VDC	63	100	250	400	630	1000
Rated voltage U_R, VAC	40	63	160	220	250	250
Capacitance range, pF	100–22000	100–10000	100–6800	100–6800	100–4700	100–680

Capacitance measured at f=1kHz, T=20°C
For C ≤ 1000 pF, f = 100 kHz.

Capacitance tolerance

±10%, ±5%, ±2.5%, ±2%, ±1%

DC Test voltage

2 x U_R for 2s

Temperature range

–55 ... +100°C
An operating temperature up to +105°C is allowed under certain conditions. For details consult Evox Rifa.

Climatic category

IEC 60068-1, 55/100/56
DIN 40040, FMD

Capacitance drift

Max. 0.3% after a 2 year storage period at a temperature of +10° ... +40°C and a relative humidity of 40 ... 60%.

Temperature coefficient

–200 (+50, –100) ppm/°C (at 1 kHz)

Self inductance

Approximately 6 nH/cm for the total length of capacitor winding and leads.

Dissipation factor tanδ

Maximum values at +23°C

	C≤1000 pF	1000 pF<C≤4700 pF	C>4700 pF
1 kHz	≤ 0.04%	0.04%	0.04%
10 kHz	≤ 0.04%	0.05%	0.07%
100 kHz	≤ 0.05%	0.07%	

Insulation resistance

Measured at +20°C, according to IEC 60384-13.
Minimum value between terminals: 500 000 MΩ

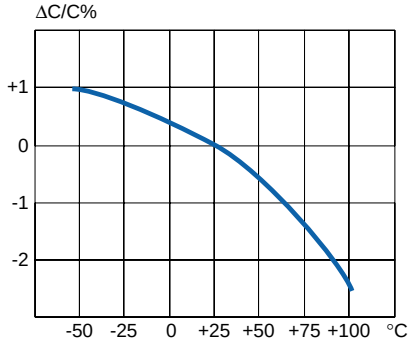
ENVIRONMENTAL TEST DATA

Damp heat test	Test conditions: Test criteria:	T = +40°C, RH = 93%, t = 56 days. Δ C/C ≤ ±1%, tanδ ≤ 1.4 x value before test,(1kHz and 100 kHz) IR after test 250 000 MΩ.
Endurance test	Test conditions:	T = +85°C, U = 1.5 x U_R, t = 1000 h and T = +100°C, U = 1.25 x U_C, t = 1000 h.
	Test criteria:	Δ C/C ≤ ±1%, tanδ ≤ 1.4 x value before test, (1kHz and 100 kHz) IR after test 250 000 MΩ.

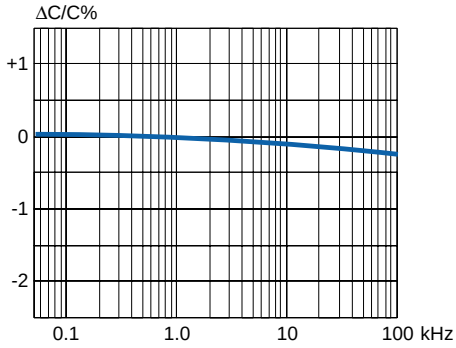
MARKING

- Rated capacitance
- Capacitance tolerance code
- Rated voltage
- Code PFR5

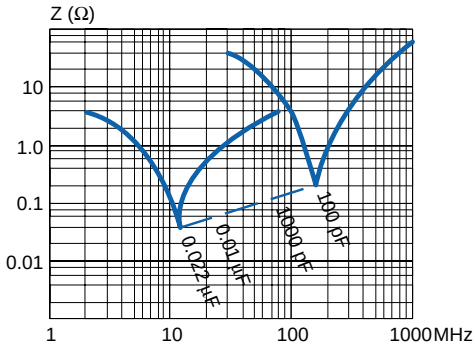
TYPICAL DATA



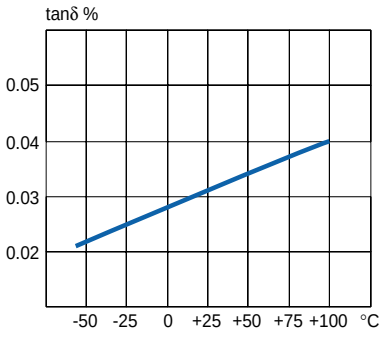
Capacitance vs. temperature (at 1 kHz)



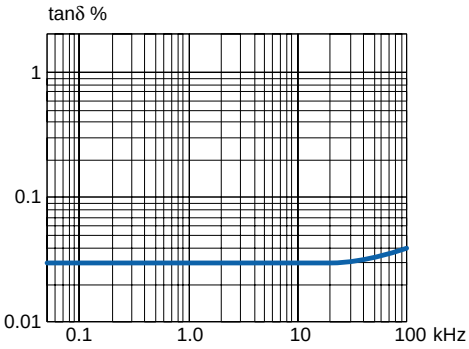
Capacitance vs. frequency (at +23°C)



Resonance frequencies



Dissipation factor vs. temperature (at 1 kHz)



Dissipation factor vs. frequency (at +23°C)

ARTICLE TABLE

Capaci-tance µF	Max dimensions in mm B	H	L	p	Quantity per package Bulk	Tray	Reel	Ammo	Max dU/dt V/µs	Article code
63 VDC / 40 VAC										
0.00010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 101J63J11L4 BULK
0.00015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 151J63J11L4 BULK
0.00022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 221J63J11L4 BULK
0.00033	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 331J63J11L4 BULK
0.00047	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 471J63J11L4 BULK
0.00068	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 681J63J11L4 BULK
0.0010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 102J63J11L4 BULK
0.0015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 152J63J11L4 BULK
0.0022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 222J63J11L4 BULK
0.0033	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 332J63J11L4 BULK
0.0047	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 472J63J11L4 BULK
0.0068	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 682J63J11L4 BULK
0.010	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 103J63J12L4 BULK
0.015	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 153J63J13L4 BULK
0.020	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 203J63J13L4 BULK
0.022	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 223J63J13L4 BULK
100 VDC/ 63 VAC										
0.00010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 101J100J11L4 BULK
0.00015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 151J100J11L4 BULK
0.00022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 221J100J11L4 BULK
0.00033	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 331J100J11L4 BULK
0.00047	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 471J100J11L4 BULK
0.00068	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 681J100J11L4 BULK
0.001	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 102J100J11L4 BULK
0.0015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 152J100J11L4 BULK
0.0022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 222J100J11L4 BULK
0.0033	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 332J100J12L4 BULK
0.0047	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 472J100J12L4 BULK
0.0068	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 682J100J13L4 BULK
0.010	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 103J100J13L4 BULK
250 VDC/ 160 VAC										
0.00010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 101J250J11L4 BULK
0.00015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 151J250J11L4 BULK
0.00022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 221J250J11L4 BULK
0.00033	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 331J250J11L4 BULK
0.00047	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 471J250J11L4 BULK
0.00068	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 681J250J11L4 BULK
0.0010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 102J250J11L4 BULK
0.0015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 152J250J11L4 BULK
0.0022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 222J250J11L4 BULK
0.0033	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 332J250J12L4 BULK
0.0047	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 472J250J13L4 BULK
0.0068	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 682J250J13L4 BULK
400 VDC/ 220 VAC										
0.00010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 101J400J11L4 BULK
0.00015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 151J400J11L4 BULK
0.00022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 221J400J11L4 BULK
0.00033	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 331J400J11L4 BULK
0.00047	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 471J400J11L4 BULK
0.00068	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 681J400J11L4 BULK
0.0010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 102J400J11L4 BULK
0.0015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 152J400J11L4 BULK
0.0022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 222J400J11L4 BULK
0.0033	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 332J400J12L4 BULK
0.0047	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 472J400J13L4 BULK
0.0068	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 682J400J13L4 BULK

Capacitance µF	Max dimensions in mm B	H	L	p	Quantity per package Bulk	Tray	Reel	Ammo	Max dU/dt V/µs	Article code
630 VDC/ 250 VAC										
0.00010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 101J630J11L4 BULK
0.00015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 151J630J11L4 BULK
0.00022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 221J630J11L4 BULK
0.00033	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 331J630J11L4 BULK
0.00047	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 471J630J11L4 BULK
0.00068	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 681J630J11L4 BULK
0.0010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 102J630J11L4 BULK
0.0015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 152J630J11L4 BULK
0.0022	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 222J630J12L4 BULK
0.0033	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 332J630J13L4 BULK
0.0047	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 472J630J13L4 BULK
1000 VDC/ 250 VAC										
0.00010	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 101J1000J11L4 BULK
0.00015	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 151J1000J11L4 BULK
0.00022	4.5	6.0	7.2	5.0	1000		1500	1700	1000	PFR5 221J1000J11L4 BULK
0.00033	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 331J1000J12L4 BULK
0.00047	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 471J1000J12L4 BULK
0.00068	5.5	7.0	7.2	5.0	1000		1200	1300	1000	PFR5 681J1000J12L4 BULK
0.0010	6.5	8.0	7.2	5.0	1000		900	1100	1000	PFR5 102J1000J13L4 BULK