

# Type 940C through 943C Power Film Capacitors

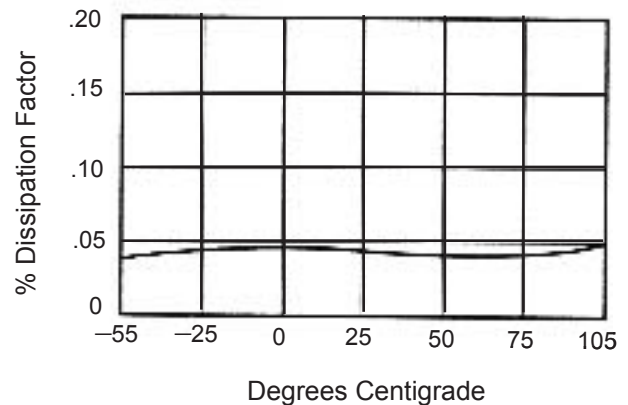
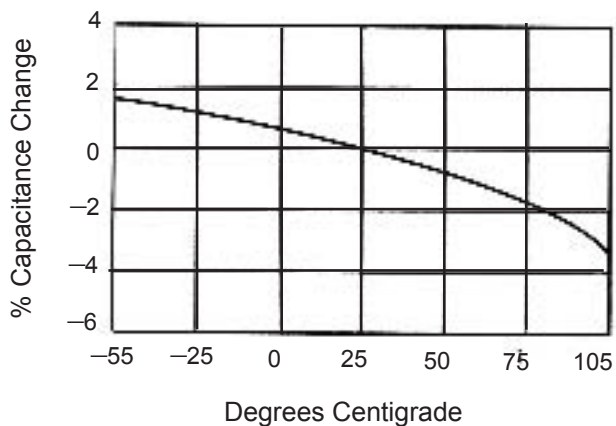
## Electrical Characteristics

Operating Temperature	-55 °C to +105 °C *Full rated voltage at 85 °C, derate linearly to 50% rated voltage at 105 °C
Capacitance tolerance	±10% standard tolerance
Dissipation Factor	<0.1% at 1 kHz, 25 °C
Dielectric Withstand	1.6 x rated voltage for 60 seconds
Insulation Resistance	>100,000 MΩ x μF at 100 Vdc measured after 2 minutes
Equivalent Series Resistance (ESR)	See rating tables for values
Equivalent Series Inductance (ESL)	See rating tables for values
dV/dt	See rating tables for values
Rated Current, $I_{pk}$ and $I_{rms}$ Maximum allowable current in amperes at 70 °C	See rating tables for values
Capacitance Temperature Coefficient	-200 ppm/°C ±100 ppm
Service Life	30,000 hours @ rated Vac, 70 °C 60,000 hours @ rated Vdc, 70 °C

## Accelerated Tests

Accelerated Life	1.25 x rated DC voltage at 85 °C for 2,000 hours
Performance	<3% capacitance change ESR <125% of initial reading IR >50% of initial limit
Accelerated Pulse Testing	per IEC-384
Performance	<3% in capacitance change <.003 increase in DF from initial value

## Typical Characteristics

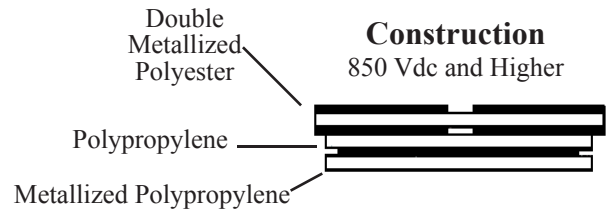


# Type 940C High dV/dt, Round Polypropylene Film Capacitors

## Double Metallized – Axial Leads



Type 940C round, axial leaded film capacitors have polypropylene film and dual metallized electrodes for both self healing properties and high peak current carrying capability (dV/dt). This series features low ESR characteristics, excellent high frequency and high voltage capabilities.



## Specifications

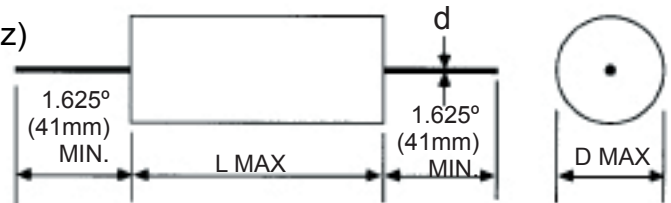
**Voltage Range:** 600 – 3000 Vdc (275 - 750 Vac, 60 Hz)

**Capacitance Range:** 0.01 – 4.7  $\mu$ F

**Capacitance Tolerance:**  $\pm$ 10%

**Operating Temperature Range:** -55 °C to 105 °C\*

\*Full-rated voltage at 85 °C—Derate linearly to 50%-rated voltage at 105 °C



NOTE: Refer to Application Guide for test conditions. Contact us for other capacitance values, sizes and performance specifications.



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

## Ratings

Cap. (μF)	Catalog Part Number	D Inches (mm)	L Inches (mm)	d Inches (mm)	Typical ESR (mΩ)	Typical ESL (nH)	dV/dt V/μs	I peak (A)	I <sub>RMS</sub> 70 °C 100 kHz (A)
<b>600 Vdc (275 Vac)</b>									
.10	940C6P1K-F	.354 (9.0)	1.339 (34.0)	.032 (.8)	28	19	196	20	2.5
.15	940C6P15K-F	.413 (10.5)	1.339 (34.0)	.032 (.8)	13	20	196	29	4.0
.22	940C6P22K-F	.453 (11.5)	1.339 (34.0)	.032 (.8)	12	20	196	43	4.4
.33	940C6P33K-F	.531 (13.5)	1.339 (34.0)	.032 (.8)	9	21	196	65	5.6
.47	940C6P47K-F	.610 (15.5)	1.339 (34.0)	.040 (1.0)	7	22	196	92	6.9
.68	940C6P68K-F	.709 (18.0)	1.339 (34.0)	.040 (1.0)	6	23	196	134	8.1
1.00	940C6W1K-F	.827 (21.0)	1.339 (34.0)	.040 (1.0)	6	24	196	196	8.9
1.50	940C6W1P5K-F	.984 (25.0)	1.339 (34.0)	.047 (1.2)	5	26	196	295	10.9
2.00	940C6W2K-F	.925 (23.5)	1.811 (46.0)	.047 (1.2)	5	31	128	255	11.8
3.30	940C6W3P3K-F	1.063 (27.0)	2.126 (54.0)	.047 (1.2)	4	36	105	346	15.3
4.70	940C6W4P7K-F	1.240 (31.5)	2.126 (54.0)	.047 (1.2)	4	38	105	492	16.8
<b>850 Vdc (450 Vac)</b>									
.15	940C8P15K-F	.512 (13.0)	1.339 (34.0)	.032 (.8)	8	21	713	107	5.8
.22	940C8P22K-F	.610 (15.5)	1.339 (34.0)	.040 (1.0)	8	22	713	157	6.4
.33	940C8P33K-F	.709 (18.0)	1.339 (34.0)	.040 (1.0)	7	23	713	235	7.5
.47	940C8P47K-F	.827 (21.0)	1.339 (34.0)	.040 (1.0)	5	24	713	335	9.8
.68	940C8P68K-F	.965 (24.5)	1.339 (34.0)	.047 (1.2)	4	26	713	485	12.0
1.00	940C8W1K-F	.886 (22.5)	1.811 (46.0)	.047 (1.2)	5	30	400	400	11.5
1.50	940C8W1P5K-F	1.063 (27.0)	1.811 (46.0)	.047 (1.2)	4	32	400	600	14.3
2.00	940C8W2K-F	1.201 (30.5)	1.811 (46.0)	.047 (1.2)	3	34	400	800	17.9
2.20	940C8W2P2K-F	1.260 (32.0)	1.811 (46.0)	.047 (1.2)	3	34	400	880	18.4
2.50	940C8W2P5K-F	1.339 (34.0)	1.811 (46.0)	.047 (1.2)	3	35	400	1000	19.1

# Type 940C High dV/dt, Round Polypropylene Film Capacitors

## Ratings

Cap. ( $\mu$ F)	Catalog Part Number	D		L		d		Typical ESR	Typical ESL	dV/dt	I peak	I <sub>RMS</sub> 70 °C 100 kHz
		Inches	(mm)	Inches	(mm)	Inches	(mm)	(m $\Omega$ )	(nH)	V/ $\mu$ s	(A)	(A)
<b>1000 Vdc (500 Vac)</b>												
.15	940C10P15K-F	.591	(15.0)	1.339	(34.0)	.040	(1.0)	7	22	856	128	6.7
.22	940C10P22K-F	.689	(17.5)	1.339	(34.0)	.040	(1.0)	7	23	856	188	7.4
.33	940C10P33K-F	.807	(20.5)	1.339	(34.0)	.040	(1.0)	6	24	856	283	8.8
.47	940C10P47K-F	.945	(24.0)	1.339	(34.0)	.047	(1.2)	5	26	856	402	10.6
.68	940C10P68K-F	1.102	(28.0)	1.339	(34.0)	.047	(1.2)	5	27	856	582	11.7
1.00	940C10W1K-F	1.024	(26.0)	1.811	(46.0)	.047	(1.2)	5	32	480	480	12.5
1.50	940C10W1P5K-F	1.220	(31.0)	1.811	(46.0)	.047	(1.2)	4	34	480	720	15.6
2.00	940C10W2K-F	1.398	(35.5)	1.811	(46.0)	.047	(1.2)	3	36	480	960	19.6
<b>1200 Vdc (500 Vac)</b>												
.10	940C12P1K-F	.610	(15.5)	1.339	(34.0)	.040	(1.0)	9	22	1142	114	6.1
.15	940C12P15K-F	.728	(18.5)	1.339	(34.0)	.040	(1.0)	7	23	1142	171	7.6
.22	940C12P22K-F	.846	(21.5)	1.339	(34.0)	.040	(1.0)	7	24	1142	251	8.4
.33	940C12P33K-F	.787	(20.0)	1.811	(46.0)	.040	(1.0)	7	29	640	211	9.0
.47	940C12P47K-F	.906	(23.0)	1.811	(46.0)	.047	(1.2)	7	30	640	301	9.8
.68	940C12P68K-F	1.063	(27.0)	1.811	(46.0)	.047	(1.2)	6	32	640	435	11.7
1.00	940C12W1K-F	1.299	(33.0)	1.811	(46.0)	.047	(1.2)	5	35	640	640	14.5
1.50	940C12W1P5K-F	1.378	(35.0)	2.126	(54.0)	.047	(1.2)	4	39	502	754	17.9
<b>1600 Vdc (630 Vac)</b>												
.10	940C16P1K-F	.709	(18.0)	1.339	(34.0)	.040	(1.0)	7	23	1427	143	7.5
.15	940C16P15K-F	.846	(21.5)	1.339	(34.0)	.040	(1.0)	5	24	1427	214	9.9
.22	940C16P22K-F	1.004	(25.5)	1.339	(34.0)	.047	(1.2)	7	26	1427	314	9.3
.33	940C16P33K-F	.925	(23.5)	1.811	(46.0)	.047	(1.2)	7	31	800	264	10.0
.47	940C16P47K-F	1.083	(27.5)	1.811	(46.0)	.047	(1.2)	6	32	800	376	11.8
.68	940C16P68K-F	1.280	(32.5)	1.811	(46.0)	.047	(1.2)	6	35	800	544	13.1
1.00	940C16W1K-F	1.535	(39.0)	1.811	(46.0)	.047	(1.2)	5	37	800	800	16.2
1.50	940C16W1P5K-F	1.654	(42.0)	2.126	(54.0)	.047	(1.2)	4	42	628	942	20.1
<b>2000 Vdc (630 Vac)</b>												
.022	940C20S22K-F	.453	(11.5)	1.339	(34.0)	.032	(.8)	35	6	1712	38	2.6
.033	940C20S33K-F	.531	(13.5)	1.339	(34.0)	.032	(.8)	20	21	1712	57	3.8
.047	940C20S47K-F	.591	(15.0)	1.339	(34.0)	.040	(1.0)	12	22	1712	80	5.2
.068	940C20S68K-F	.689	(17.5)	1.339	(34.0)	.040	(1.0)	8	23	1712	116	6.9
.100	940C20P1K-F	.827	(21.0)	1.339	(34.0)	.040	(1.0)	7	24	1712	171	8.3
.150	940C20P15K-F	.768	(19.5)	1.811	(46.0)	.040	(1.0)	7	29	960	144	8.9
.220	940C20P22K-F	.866	(22.0)	1.811	(46.0)	.040	(1.0)	8	30	960	211	9.0
.330	940C20P33K-F	1.063	(27.0)	1.811	(46.0)	.047	(1.2)	8	32	960	317	10.1
.470	940C20P47K-F	1.260	(32.0)	1.811	(46.0)	.047	(1.2)	6	34	960	451	13.0
.560	940C20P56K-F	1.220	(31.0)	2.126	(54.0)	.047	(1.2)	7	37	754	422	12.6
.680	940C20P68K-F	1.339	(34.0)	2.126	(54.0)	.047	(1.2)	6	39	754	513	14.3
1.00	940C20W1K-F	1.614	(41.0)	2.126	(54.0)	.047	(1.2)	5	42	754	754	17.7
<b>3000 Vdc (750 Vac)</b>												
.010	940C30S1K-F	0.453	(11.5)	1.339	(34.0)	.032	(.8)	60	20	2568	26	2.0
.015	940C30S15K-F	0.531	(13.5)	1.339	(34.0)	.032	(.8)	40	21	2568	39	2.7
.022	940C30S22K-F	0.61	(15.5)	1.339	(34.0)	.040	(1.0)	25	22	2568	57	3.6
.033	940C30S33K-F	0.709	(18.0)	1.339	(34.0)	.040	(1.0)	14	23	2568	85	5.3
.047	940C30S47K-F	0.65	(16.5)	1.811	(46.0)	.040	(1.0)	14	28	1440	68	5.7
.068	940C30S68K-F	0.748	(19.0)	1.811	(46.0)	.040	(1.0)	12	29	1440	98	6.7
.100	940C30P1K-F	0.886	(22.5)	1.811	(46.0)	.047	(1.2)	10	30	1440	144	8.1
.150	940C30P15K-F	1.063	(27.0)	1.811	(46.0)	.047	(1.2)	8	32	1440	216	10.1