SOLEN COMPONENTS INC.

➤ FAST CAPACITORS ™ CONCEPT

All of our metallized film capacitors use the maximum lowest possible resistivity metallized layer for a given film thickness which is vacuum deposited on a biaxially oriented polypropylene film.

The *FAST CAPACITOR* ™ concept is mainly obtained by decreasing the film width from the standard round tubular winding type configuration to a shorter *FAST* tubular "square aspect ratio" round winding type which decrease the winding resistivity and also increase the contact area.

S - Standard type capacitors use a **tubular round type** winding configuration.
F - Fast type capacitors use a **tubular "square aspect ratio" round type** winding configuration.

Let us consider the following three similar metallized capacitors of 10 µF 400Vdc / 240Vac wound with their respective winding metallized film width according to S and F type standards:

Capacitor Type	Winding (mm) Dimensions	Contact Area Percentage	Contact Area Increase	Film Width Decrease	Performance Improvement
S – Standard	23 Ø x 36 L	14%	Reference	Reference	Reference
F – Fast	26 Ø x 30 L	22%	50%	20%	70%

The decrease of the film width will decrease by the same percentage the resistivity of the winding and the capacitor transit time, hence the name "*FAST*". The increase of the contact area of the winding ends will increase by the same percentage the current carrying capacity.

These two main factors, lower winding resistivity and larger contact area will decrease, by a measurably large amount equal to the "Performance Improvement" percentage, the Equivalent Series Resistance and the Dissipation Factor of the capacitor.

This superior concept significantly improved the electrical and mechanical characteristics of the film capacitor. They deliver a high level of performance that has never before been achieved, which will directly enhance the efficiency of any electronic or electrical equipment. *SOLEN* polypropylene metallized *FAST CAPACITOR*™ outperform any other similar capacitors: multi sections, segmented, oval, stacked, ordinary or otherwise, due to our unique short length, large diameter, **FAST design**. It is as simple as that.

They have lower dielectric absorption factor, lower equivalent series resistance, lower inductance, higher resonant frequency, more linear impedance, lower dissipation factor, higher current capacity, faster rise time, unrivalled handling of fast high current pulse, high temperature stability, excellent long term electrical and mechanical reliability and a better damped mechanical self resonance under dynamic signal conditions.

Consequently, the *SOLEN FAST CAPACITOR* ™, for instance, represents an astonishing leap forward in capacitor design and engineering standards.

SOLEN, the Film Capacitors against which ultimately all the others must be judged.

SOLEN INC.

FAST CAPACITORS
METALLIZED POLYPROPYLENE

● GENERAL INFORMATION

Type	: Metallized Film Capacitor.
Dielectric	: Polypropylene Film.
Electrodes	: Aluminum Metallized, Vacuum Deposited.
Construction	: Round Tubular "Square Aspect Ratio" Type, Axial Leads.
Winding	: Bifilar Extended Metallized Film.
Contact	: Non-Inductive, Zinc Thermally Sprayed Extended Film.
Coating	: Black Plastic Tape Wrapped, Grey Epoxy Resin Sealed.
Leads	: Tinned Plated Oxygen Free Pure Copper.

● TECHNICAL DATA

Capacitance Range/Tolerance	: 0.1 ... 330 µF, E 24 series, ±5 %, ±2 %. (see specifications for details)
Dielectric Constant	: 2.1 ε_r, non-polar dielectric.
Dielectric Absorption Factor	: ≤ .05 % @ 20 °C.
Equivalent Series Resistance	: Extremely low. (see specifications for details)
Self Inductance	: ≤ 12 nH with 6 mm leads.
Dissipation Factor	: Extremely low. (see specifications for details)
Insulation Resistance	: ≥ 100,000 MΩ @ 20 °C.
Temperature Coefficient	: -200×10^{-6} / °C.
Temperature Range	: -25 °C to +85 °C.
Test Voltage	: 1.5 × Vr for 5 sec.
Rated Voltage	: PA = 250Vdc/150Vac, PB = 400Vdc/250Vac, PPE = 630Vdc/330Vac
Dielectric Thickness	: PA = 4 µm, PB = 5 µm, PPE = 6 µm
Metal Layers Thickness	: PA = .03 µm, PB = 0.04 µm, PPE = 0.02 µm
Metal Layers Conductivity	: PA = 1.5 - 3 Ω / cm^2 PB = 1 - 2 Ω / cm^2 PPE = 2 - 4 Ω / cm^2
Leads Diameter	: 0.8, 1.0 , 1.2 , 1.5 mm Ø. (see specifications for details)

● FEATURE

Special Tubular "Square Aspect Ratio" Type Construction.
High Conductivity Metallization.
Soldered Lead Termination.
High Current Capacity.
High Frequency and Temperature Stability.
Excellent Long Term Electrical and Mechanical Reliability.
No Short Term and / or Long Term Signal Aberration.
Unrivaled Handling of Fast High Current Pulse.

● ELECTRICAL PERFORMANCE

Very Low Dielectric Absorption Factor.
Very Low Equivalent Series Resistance.
Very Low Inductance.
Very High Resonant Frequency.
Ultra Linear Impedance Characteristics.
Very Low Dissipation Factor.
Very High Insulation Resistance.

FAST CAPACITORS
METALLIZED POLYPROPYLENE

Dissipation Factor (%) ±10%
Dimensions (mm) ±10%

PA 250Vdc/150Vac

P/N	Capacitance/DF	x L	x l
PA100	1.0 mfd .0001	11 x 22	0.8 x 35
PA110	1.1 mfd .0001	11 x 22	0.8 x 35
PA120	1.2 mfd .0001	11 x 22	0.8 x 35
PA130	1.3 mfd .0001	12 x 22	0.8 x 35
PA150	1.5 mfd .0001	13 x 22	0.8 x 35
PA160	1.6 mfd .0001	13 x 22	0.8 x 35
PA180	1.8 mfd .0001	14 x 22	0.8 x 35
PA200	2.0 mfd .0001	13 x 27	0.8 x 35
PA220	2.2 mfd .0001	13 x 27	0.8 x 35
PA240	2.4 mfd .0001	14 x 27	0.8 x 35
PA270	2.7 mfd .0001	15 x 27	0.8 x 35
PA300	3.0 mfd .0001	15 x 27	0.8 x 35
PA330	3.3 mfd .0002	16 x 28	0.8 x 35
PA360	3.6 mfd .0002	16 x 28	0.8 x 35
PA390	3.9 mfd .0002	17 x 28	0.8 x 35
PA430	4.3 mfd .0002	18 x 28	0.8 x 35
PA470	4.7 mfd .0002	19 x 28	0.8 x 35
PA510	5.1 mfd .0002	17 x 32	0.8 x 35
PA560	5.6 mfd .0002	18 x 32	1.0 x 35
PA620	6.2 mfd .0002	19 x 32	1.0 x 35
PA680	6.8 mfd .0003	20 x 32	1.0 x 35
PA750	7.5 mfd .0003	21 x 33	1.0 x 35
PA820	8.2 mfd .0003	21 x 33	1.0 x 35
PA910	9.1 mfd .0003	23 x 33	1.0 x 35
PA1000	10 mfd .0003	24 x 33	1.0 x 35
PA1100	11 mfd .0003	22 x 38	1.0 x 35
PA1200	12 mfd .0004	23 x 38	1.0 x 35
PA1300	13 mfd .0004	24 x 38	1.0 x 35
PA1500	15 mfd .0004	26 x 38	1.0 x 35
PA1600	16 mfd .0004	27 x 38	1.0 x 35
PA1800	18 mfd .0004	26 x 43	1.0 x 40
PA2000	20 mfd .0004	28 x 43	1.0 x 40
PA2200	22 mfd .0005	29 x 43	1.0 x 40
PA2400	24 mfd .0005	30 x 43	1.0 x 40
PA2700	27 mfd .0005	32 x 43	1.0 x 40
PA3000	30 mfd .0006	31 x 48	1.0 x 45
PA3300	33 mfd .0006	33 x 48	1.0 x 45
PA3600	36 mfd .0007	34 x 48	1.0 x 45
PA3900	39 mfd .0007	36 x 48	1.0 x 45
PA4300	43 mfd .0008	37 x 48	1.0 x 45
PA4700	47 mfd .0008	37 x 53	1.2 x 45
PA5100	51 mfd .0009	38 x 53	1.2 x 45
PA5600	56 mfd .0009	40 x 53	1.2 x 45
PA6200	62 mfd .001	41 x 60	1.2 x 45
PA6800	68 mfd .001	43 x 60	1.2 x 45
PA7500	75 mfd .001	44 x 60	1.2 x 45
PA8200	82 mfd .001	46 x 60	1.2 x 45
PA9100	91 mfd .001	49 x 60	1.2 x 45
PA10000	100 mfd .001	49 x 65	1.6 x 55

PB 400 Vdc/250Vac

P/N	Capacitance/DF	x L	x l
PB100	1.0 mfd .0001	12 x 22	0.8 x 35
PB110	1.1 mfd .0001	14 x 22	0.8 x 35
PB120	1.2 mfd .0001	14 x 22	0.8 x 35
PB130	1.3 mfd .0001	15 x 22	0.8 x 35
PB150	1.5 mfd .0001	14 x 27	0.8 x 35
PB160	1.6 mfd .0001	14 x 27	0.8 x 35
PB180	1.8 mfd .0001	15 x 27	0.8 x 35
PB200	2.0 mfd .0001	16 x 27	0.8 x 35
PB220	2.2 mfd .0001	16 x 27	0.8 x 35
PB240	2.4 mfd .0001	17 x 28	0.8 x 35
PB270	2.7 mfd .0001	17 x 28	0.8 x 35
PB300	3.0 mfd .0001	19 x 28	0.8 x 35
PB330	3.3 mfd .0002	17 x 33	0.8 x 35
PB360	3.6 mfd .0002	18 x 33	0.8 x 35
PB390	3.9 mfd .0002	19 x 33	0.8 x 35
PB430	4.3 mfd .0002	19 x 33	0.8 x 35
PB470	4.7 mfd .0002	20 x 33	1.0 x 35
PB510	5.1 mfd .0002	21 x 33	1.0 x 35
PB560	5.6 mfd .0002	22 x 33	1.0 x 35
PB620	6.2 mfd .0002	23 x 33	1.0 x 35
PB680	6.8 mfd .0003	25 x 33	1.0 x 35
PB750	7.5 mfd .0003	25 x 33	1.0 x 35
PB820	8.2 mfd .0003	24 x 38	1.0 x 35
PB910	9.1 mfd .0003	25 x 38	1.0 x 35
PB1000	10 mfd .0003	26 x 38	1.0 x 35
PB1100	11 mfd .0003	28 x 38	1.0 x 35
PB1200	12 mfd .0004	29 x 38	1.0 x 35
PB1300	13 mfd .0004	27 x 45	1.0 x 40
PB1500	15 mfd .0004	29 x 45	1.0 x 40
PB1600	16 mfd .0004	29 x 45	1.0 x 40
PB1800	18 mfd .0004	31 x 45	1.0 x 40
PB2000	20 mfd .0004	33 x 45	1.0 x 40
PB2200	22 mfd .0005	34 x 45	1.0 x 40
PB2400	24 mfd .0005	36 x 45	1.0 x 40
PB2700	27 mfd .0005	34 x 53	1.2 x 45
PB3000	30 mfd .0006	36 x 53	1.2 x 45
PB3300	33 mfd .0006	38 x 53	1.2 x 45
PB3600	36 mfd .0007	40 x 53	1.2 x 45
PB3900	39 mfd .0007	40 x 60	1.2 x 45
PB4300	43 mfd .0008	42 x 60	1.2 x 45
PB4700	47 mfd .0008	44 x 60	1.2 x 45
PB5100	51 mfd .0009	45 x 60	1.2 x 45
PB5600	56 mfd .0009	45 x 65	1.6 x 55
PB6200	62 mfd .001	47 x 65	1.6 x 55
PB6800	68 mfd .001	49 x 65	1.6 x 55
PB7500	75 mfd .001	52 x 65	1.6 x 55
PB8200	82 mfd .001	54 x 65	1.6 x 55
PB9100	91 mfd .001	57 x 65	1.6 x 55
PB10000	100 mfd .001	56 x 72	1.6 x 55

PA11000	110 mfd .001	51 x 65 1.6 x 55
PA12000	120 mfd .001	52 x 65 1.6 x 55
PA13000	130 mfd .001	55 x 65 1.6 x 55
PA15000	150 mfd .001	56 x 72 1.6 x 55
PA16000	160 mfd .001	58 x 72 1.6 x 55
PA18000	180 mfd .001	61 x 72 1.6 x 55
PA20000	200 mfd .001	58 x 85 1.6 x 55
PA22000	220 mfd .001	61 x 85 1.6 x 55
PA24000	240 mfd .001	64 x 85 1.6 x 55
PA27000	270 mfd .001	58 x 110 1.6 x 55
PA30000	300 mfd .001	61 x 110 1.6 x 55
PA33000	330 mfd .001	63 x 115 1.6 x 55

PB11000	110 mfd .001	58 x 72 1.6 x 55
PB12000	120 mfd .001	61 x 72 1.6 x 55
PB13000	130 mfd .001	58 x 85 1.6 x 55
PB15000	150 mfd .001	62 x 85 1.6 x 55
PB16000	160 mfd .001	64 x 85 1.6 x 55
PB18000	180 mfd .001	59 x 110 1.6 x 55
PB20000	200 mfd .001	62 x 110 1.6 x 55
PB22000	220 mfd .001	63 x 115 1.6 x 55

PPE 630Vdc/330Vac

P/N	Capacitance/DF	x L	x l
PPE010	.10 mfd .0001	10 x 17	0.8 x 35
PPE012	.12 mfd .0001	11 x 17	0.8 x 35
PPE015	.15 mfd .0001	10 x 20	0.8 x 35
PPE018	.18 mfd .0001	11 x 20	0.8 x 35
PPE022	.22 mfd .0001	10 x 22	0.8 x 35
PPE027	.27 mfd .0001	11 x 22	0.8 x 35
PPE033	.33 mfd .0001	12 x 22	0.8 x 35
PPE039	.39 mfd .0001	13 x 22	0.8 x 35
PPE047	.47 mfd .0001	12 x 24	0.8 x 35
PPE056	.56 mfd .0001	13 x 24	0.8 x 35
PPE068	.68 mfd .0001	14 x 25	0.8 x 35
PPE082	.82 mfd .0001	15 x 25	0.8 x 35
PPE100	1.0 mfd .0001	17 x 25	0.8 x 35
PPE120	1.2 mfd .0001	16 x 28	0.8 x 35
PPE150	1.5 mfd .0001	18 x 28	0.8 x 35
PPE180	1.8 mfd .0001	19 x 28	0.8 x 35
PPE220	2.2 mfd .0001	18 x 33	1.0 x 35
PPE270	2.7 mfd .0001	20 x 33	1.0 x 35
PPE330	3.3 mfd .0002	22 x 33	1.0 x 35
PPE390	3.9 mfd .0002	22 x 38	1.0 x 35
PPE470	4.7 mfd .0002	24 x 38	1.0 x 35
PPE560	5.6 mfd .0002	26 x 38	1.0 x 35
PPE680	6.8 mfd .0003	26 x 43	1.0 x 40
PPE820	8.2 mfd .0003	29 x 43	1.0 x 40
PPE1000	10 mfd .0003	29 x 48	1.0 x 40
PPE1200	12 mfd .0004	32 x 48	1.0 x 40
PPE1500	15 mfd .0004	34 x 53	1.2 x 45
PPE1800	18 mfd .0004	37 x 53	1.2 x 45
PPE2200	22 mfd .0005	39 x 58	1.2 x 45
PPE2700	27 mfd .0005	43 x 58	1.2 x 45
PPE3300	33 mfd .0006	45 x 65	1.2 x 45
PPE3900	39 mfd .0007	49 x 65	1.2 x 45
PPE4700	47 mfd .0008	54 x 65	1.6 x 55

Recommended for Tube Amplifier application.

PPE 630Vdc/330Vac, Metal Can

P/N	Capacitance/DF	x L	Term.
PPE2200ALV	22 mfd .001	45 x 66	2x6.35
PPE3300ALV	33 mfd .001	50 x 86	2x6.35
PPE5100ALV	51 mfd .001	50 x 116	2x6.35
PPE10000ALV	100 mfd .001	65 x 116	4x6.35

PESG 1500Vdc, Metal Can

P/N	Capacitance/DF	x L	Term.
PESG5100ALV	51 mfd .002	55 x 116	2x6.35

PPM 1000Vdc, Bypass Cap

P/N	Capacitance/DF	x L	x l
PPM0010	.010 mfd .00011	7 x 16	0.8 x 35
PPM0022	.022 mfd .00013	11 x 16	0.8 x 35
PPM0047	.047 mfd .00017	13 x 16	0.8 x 35