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	: -55 °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.