

Guide to Film Capacitors

Application / Function desired

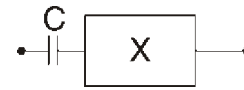
Expected Capacitor Parameter

Circuit Diagram

BLOCKING

Once the capacitor is charged it passes no more DC (except for minor leakage, i.e., IR) hence C provides a high series impedance for limiting low frequency AC or DC current.

↑ IR
High insulation resistance.



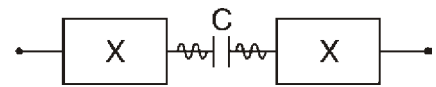
Deki Range

For $C < 0.001 \mu\text{f}$ — Plain Polypropylene Film Capacitors.
For $0.001 < C \leq 0.1 \mu\text{f}$ — Plain Polyester Film Capacitors.
For $C > 0.1 \mu\text{f}$ — Metallised Polyester Film Capacitors.

COUPLING

The capacitor actually acts as a conductor to AC (because of moving particles present in the dielectric) i.e., C provides a low series impedance for transferring AC signal information from one system to another.

Low dissipation factor ($\tan \delta$).
Low inductance.



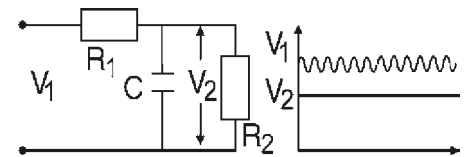
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BYPASSING

Capacitor provides a low series impedance AC path around the given circuit element.

Low dissipation factor ($\tan \delta$).
Low inductance.
High insulation resistance.



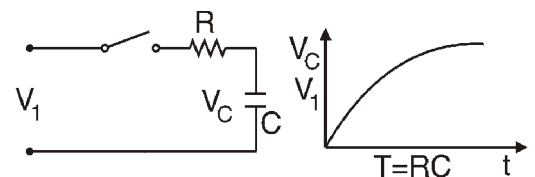
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TIMING CIRCUITS

In timing circuits capacitors are used to introduce time delays.

Stability of electrical characteristics (with reference to ambient temperature, etc.).
Close capacitance tolerance



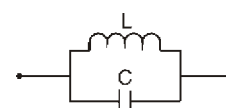
Deki Range

For $C \leq 0.047 \mu\text{f}$ — Plain Polypropylene Film Capacitors.
For $C > 0.047 \mu\text{f}$ — Metallised Polypropylene Film Capacitors.

TUNING AND OSCILLATION

In tuning circuits capacitors and inductors are used to select the desired frequency signal.

Stability of electrical characteristics (with reference to ambient temperature and frequency).
Close capacitance tolerance.



Deki Range

For $C \leq 0.047 \mu\text{f}$ — Plain Polypropylene Film Capacitors.
For $C > 0.047 \mu\text{f}$ — Metallised Polypropylene Film Capacitors.

Guide to Film Capacitors (contd.)

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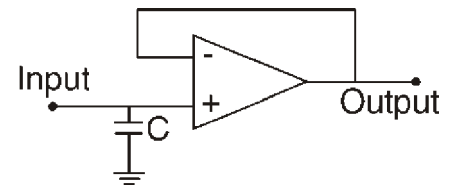
SAMPLE AND HOLD CIRCUIT

In this application C retains the stored energy.

Expected Capacitor Parameter

Low dielectric absorption.

Circuit Diagram



Deki Range

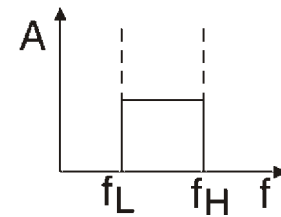
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FILTERING AND FREQUENCY DISCRIMINATION

Capacitor filter network designed for the frequency band $F_L - F_H$

Stability of electrical characteristics.
Low dissipation factor.
Close capacitance tolerance.



Deki Range

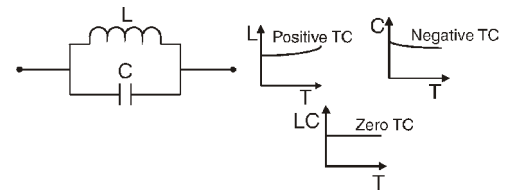
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TEMPERATURE COMPENSATION

Circuit design utilises change of capacitance with temperature

Linear temperature coefficient
Stability of electrical values



Deki Range

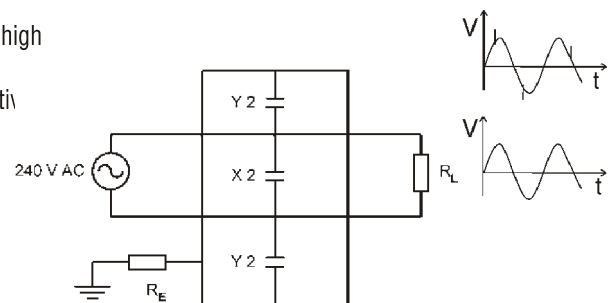
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For $C > 0.047 \mu\text{f}$ — Metallised Polypropylene Film Capacitors.

INTERFERENCE SUPPRESSION

Capacitors are connected across the mains input to suppress the interference generated by appliances or in the mains.

Should be able to handle high transient pulses.
High reliability against active flammability.



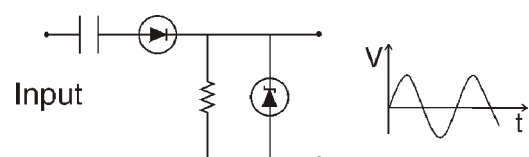
Deki Range

Interference Suppression Capacitors.

VOLTAGE DROPPER

Capacitors are connected in series to drop the input voltage. Used mainly in electronic energy meters and fan regulators.

Low loss factor.
Good reliability.
Flame retardant.



Deki Range

For rated voltage less than 250V AC — Interference Suppression Capacitors.

For rated voltage more than 250V AC — Metallised Polypropylene Film Capacitors for AC Application.

For rated voltage less than 220V AC and higher capacitance — Metallised Polyester Film Capacitors.

Guide to Film Capacitors (contd.)

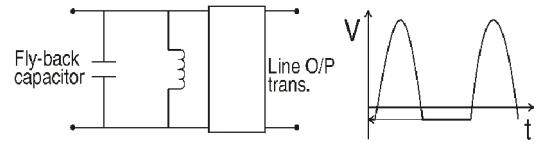
Application / Function desired

TV FLY-BACK TUNING

Expected Capacitor Parameter

Low dissipation factor.
High dielectric strength.
High pulse rise time rating.

Circuit Diagram

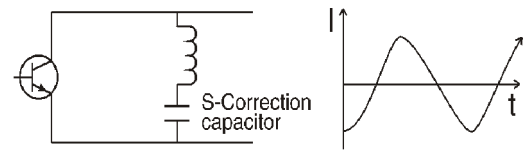


Deki Range

For good dv/dt rating — AC & Pulse Metallised Polypropylene Film Capacitors (MPP / MPP Series).
For very high dv/dt rating — AC & Pulse Metallised Polypropylene Film Capacitors (PP / MPP Series).

TV S-CORRECTION

Low dissipation factor.
Stability of electrical characteristics.
Good current carrying capability.

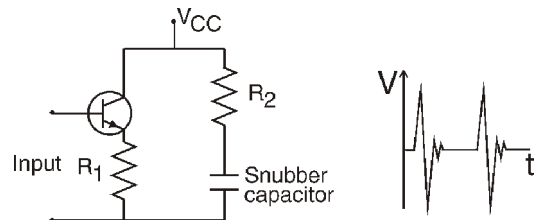


Deki Range

AC & Pulse Metallised Polypropylene Film Capacitors (MPP Series).
High Current Film / Foil Polypropylene Film Capacitors (PP NI).

SNUBBER APPLICATION

Low dissipation factor.
High dielectric strength.
High pulse rise time rating.



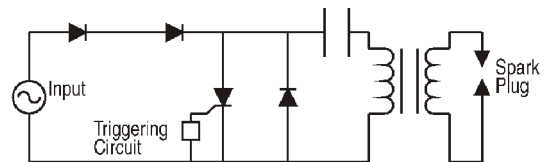
Deki Range

Plain Polypropylene Film Capacitors.
Plain Polypropylene Film Capacitors (Non-inductive) Box type.
AC & Pulse Metallised Polypropylene Film Capacitors (PP / MPP).
Film / Foil Polypropylene Film Capacitors (PP NI).

CAPACITOR DISCHARGE IGNITION

During the positive half cycle the capacitor is charged to full voltage. Then, during the negative half cycle energy stored in the capacitor is discharged through the ignition coil.

Good current carrying capability.
Good response for fast discharge.



Deki Range

For discharge current of 80 amps — CDI Capacitors (Metallised Polyester Film Capacitors).
For discharge current of 100 amps and above — CDI Capacitors (Metallised Polypropylene Film Capacitors).

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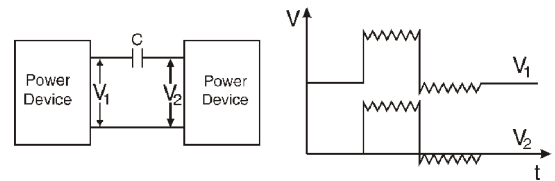
PULSE COUPLING

Coupling/decoupling of high energy, fast rise pulses

Expected Capacitor Parameter

Good pulse and AC characteristics.
High voltage proof.
Low dissipation factor.

Circuit Diagram



Deki Range

For Low Power Signal

Good dv/dt

For $C \leq 0.047 \mu\text{f}$ — Plain Polypropylene Film Capacitors.

For $C > 0.2 \mu\text{f}$ — AC & Pulse Metallised Polypropylene Film Capacitors (MPP Series).

For High Power Signal

Good dv/dt and V_{RMS} of 700V AC — AC & Pulse Metallised Polypropylene Film Capacitors (MPP / MPP Series).

Unlimited dv/dt and V_{RMS} of 500V AC — AC & Pulse Metallised Polypropylene Film Capacitors (PP / MPP Series).

LAMP CIRCUIT

For pre-heating and striking application.

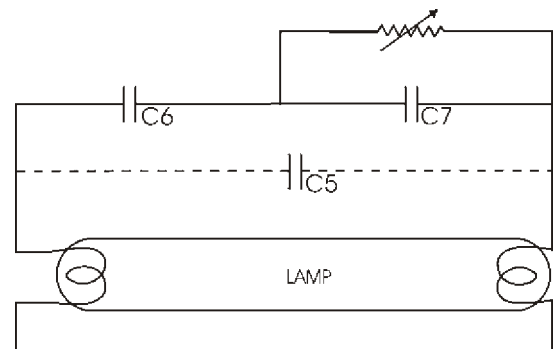
Good pulse and AC characteristics.
Low dissipation factor.
High temperature rating.

Deki Range

For C5 - 0.0022 μf - 0.0068 μf (1000V DC - 1600V DC).

C6 - 0.0047 μf - 0.01 μf (630V DC - 1600V DC).

C7 - 0.0018 μf - 0.0068 μf (630V DC - 1600V DC).



Recommended Capacitors

PP Film Foil Inductive type for temp $\leq 85^\circ\text{C}$

PET Film Foil Inductive for high temperature with low voltage and low frequency, say 40 kHz and 60 V_{RMS} .

PEP Film Foil Inductive for high temperature upto 110°C with high voltage and high frequency say 40 kHz and 110 V_{RMS} .

FAN REGULATOR

For speed control of fan.

Good self healing properties.
Smaller in size.
Higher break down voltage.
Flame proof.

Deki Range

1 μf - 4.3 μf — Metallised polyester Film Capacitors (for Switch type)

1 μf - 3.3 μf — Metallised polyester Film Capacitors and Metallised Polypropylene Capacitors (for Socket type)

1 μf - 4.3 μf — Metallised polyester Film Capacitors and Metallised Polypropylene Capacitors (Switch type - Flameproof ULTIMA Range)

1 μf - 4.3 μf — Metallised polyester Film Capacitors and Metallised Polypropylene Capacitors (Socket type- Flameproof ULTIMA Range)

