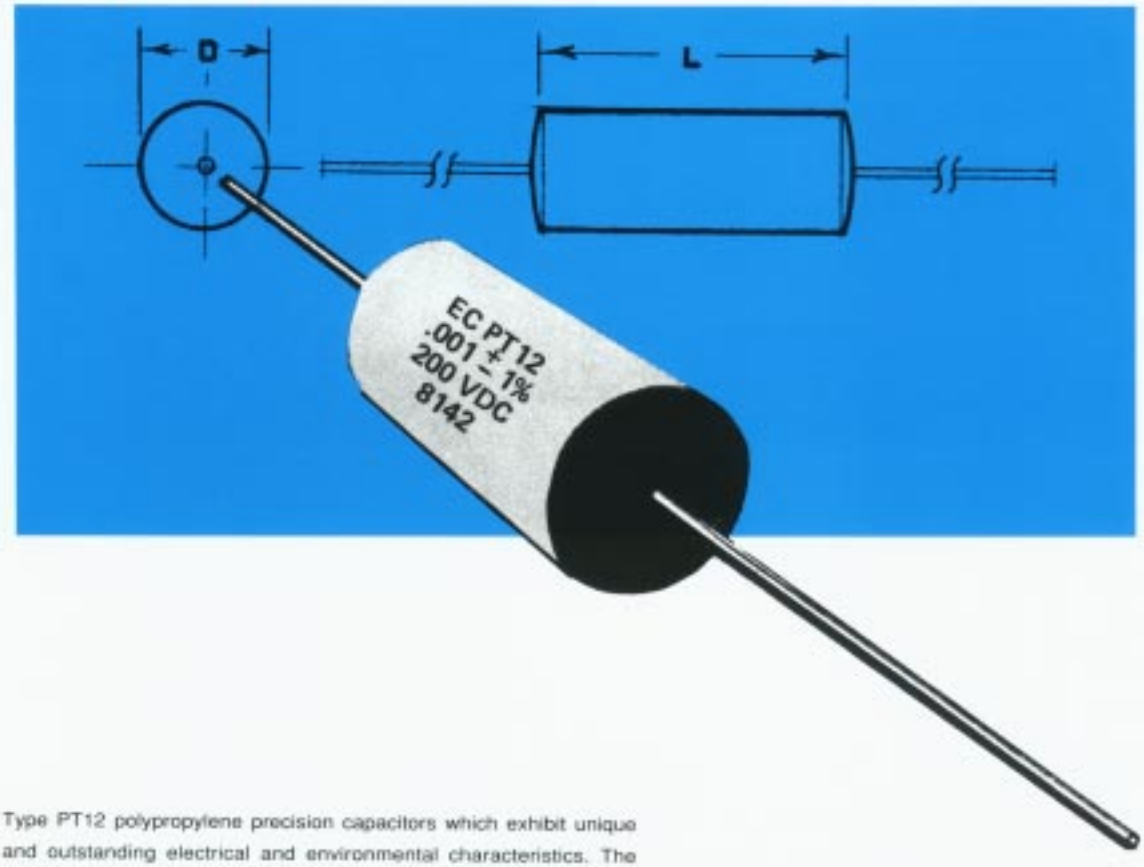
Polypropylene Capacitor

(Plastic Film Wrap, Epoxy End Fill) Type PT12

Capacitors



Type PT12 polypropylene precision capacitors which exhibit unique and outstanding electrical and environmental characteristics. The following are some of the most significant:

Negligible shift in capacitance under long term exposure to humidity, operating life, and temperature cycling.

Insulation resistance, dielectric absorption and dissipation factor properties are all equivalent, or superior, to those of polystyrene.

These polypropylene capacitors are designed for use from -55° C to +105° C without derating. Therefore, type PT12 can be used in high temperature applications when it is not feasible to use polystyrene capacitors (which have an upper limit of 85° C).

Polypropylene capacitors are excellent for all critical applications which require high insulation resistance, high Q, extreme stability, close tolerance low dielectric absorption and dissipation factor. The temperature coefficient makes an excellent choice for high Q tuned circuits, precision filter circuits, pulse networks, and RC circuits.

ELECTRONIC CONCEPTS®

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P/N 161011160

Specifications

INTERNAL CONSTRUCTION

Extended foil winding (non-inductive)

ENCLOSURE

Plastic film case with epoxy end seal.

TERMINALS

Terminal leads are solid wire of tinned copper or tinned copper clad steel.

TERMINAL STRENGTH

There shall be no mechanical damage to the capacitor or terminals when tested in accordance with method 211 of MIL-STD-202.

The following test conditions shall apply:

Test Condition A"
Capacitors shall be clamped by one terminal and a pull test load of 5 pounds shall be applied to the other terminal.

SOLDERABILITY

Capacitors shall be tested in accordance with method 208 of MIL-STD-202 and shal conform to the solid-wire termination criteria thereof.

The following details shall apply:

A. Number of terminations of each capacitor to be tested - 2.

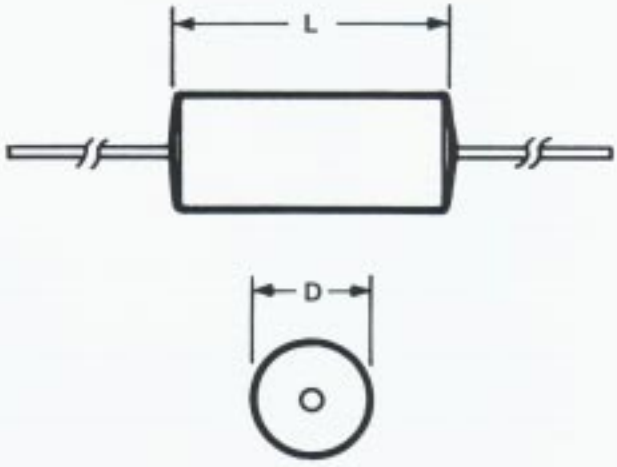
B. Depth of immersion in flux and solder - both terminals shall be immersed to within 0.125 inch of the capacitor body.

ENVIRONMENTAL

Type PT12 capacitors shall meet or exceed the requirements of MIL-C-55514 for all the following:

Vibration	(Para. 3.14) Except that test condition shall be "B" (15G)
Immersion	(Para. 3.19)
Shock	(Para. 3.15)
Moisture Resistance	(Para. 3.20)
Life	(Para. 3.21)

Dimensional Data



Mechanical Data

TOLERANCES:

Length:

+3/32, −1/6

Diameter:

.249 and under ±.032
.250 to .500 ±.046
.501 and over ±.062

Lead wire sizes:

Awg	Body Diameter
24	.250 and under
22	.251 thru. .450
20	.451 and over

Lead length is 1 -1/2" min.
Lead materials is Copper - clad steel, Solder coated.

	100VDC		150VDC		200VDC		400VDC		600VDC	
CAP	D	L	D	L	D	L	D	L	D	L
.0010	.187	.406	.187	.406	.187	.406	.187	.406	.187	.500
.0015	.187	.406	.187	.406	.187	.406	.203	.406	.203	.500
.0022	.187	.406	.187	.406	.187	.406	.234	.406	.234	.500
.0033	.187	.406	.187	.406	.203	.406	.187	.500	.203	.625
.0039	.187	.406	.187	.406	.218	.406	.187	.500	.218	.625
.0047	.187	.406	.187	.406	.187	.500	.203	.500	.234	.625
.0056	.187	.406	.187	.406	.187	.500	.218	.500	.250	.625
.0068	.187	.406	.203	.406	.187	.500	.234	.500	.281	.625
.0082	.187	.406	.218	.406	.187	.500	.203	.625	.250	.750
.0100	.234	.406	.187	.500	.203	.500	.218	.625	.281	.750
.015	.250	.406	.219	.500	.203	.625	.265	.625	.328	.750
.022	.218	.500	.250	.500	.234	.625	.312	.625	.343	.875
.033	.265	.500	.234	.625	.281	.625	.328	.750	.421	.875
.039	.281	.500	.250	.625	.312	.625	.359	.750	.437	.875
.047	.250	.625	.281	.625	.296	.750	.390	.750	.500	.875
.056	.265	.625	.250	.750	.312	.750	.421	.750	.437	1.187
.068	.281	.625	.281	.750	.343	.750	.406	.875	.484	1.187
.082	.296	.750	.312	.750	.375	.750	.437	.875	.531	1.187
.10	.328	.750	.344	.750	.406	.875	.484	.875	.578	1.187
.12	.328	.750	.375	.750	.406	.875	.453	1.187	.625	1.187
.15	.328	.875	.375	.875	.453	.875	.500	1.187	.703	1.187
.18	.343	.875	.406	.875	.484	.875	.546	1.187	.687	1.437
.22	.375	.875	.437	.875	.484	1.062	.687	1.187	.750	1.437
.27	.390	1.062	.437	1.062	.531	1.062	.578	1.437	.828	1.437
.33	.421	1.062	.500	1.062	.593	1.062	.640	1.437	.812	1.687
.39	.453	1.062	.531	1.062	.593	1.187	.687	1.437	.890	1.687
.47	.468	1.187	.531	1.187	.656	1.187	.750	1.437	.968	1.687
.56	.515	1.187	.578	1.187	.625	1.437	.825	1.437	.968	1.937
.68	.562	1.187	.625	1.187	.687	1.437	.825	1.687	1.062	1.937
.82	.609	1.187	.625	1.437	.687	1.687	.906	1.687	1.156	1.937
1.00	.671	1.187	.687	1.437	.734	1.687	1.000	1.687	1.125	1.937
1.25	.671	1.437	.750	1.437	.875	1.687	1.125	1.687	1.312	2.187
1.50	.656	1.687	.750	1.687	.843	1.937	1.125	1.937	1.500	2.187
1.80	.718	1.687	.828	1.687	.921	1.937	1.250	1.937	1.625	2.187
2.00	.703	1.937	.781	1.937	.984	1.937	1.187	2.187	1.750	2.187

When ordering type PT Capacitors Electronic Concepts Catalog number should be used

Catalog Numbering System

PT 1 2 E 104 K

TYPE

Electronic Concepts' basic type--
PT Polypropylene dielectric
for -55 C +105 C operation.

STYLE

1 = Skin tight plastic film wrap with epoxy end fill, round configuration.

TERMINALS

2 = Two, axial solid wire leads.

D.C. VOLTAGE RATING

D= 100, E= 150, F= 200, J= 400, K= 600

CAPACITANCE

Expressed in picofarads, the first two digits are significant figures. The third is the number of zeros. (e.g., 104 equals 100.000pF)

CAPACITANCE TOLERANCE

M = +20%, K = +10%, J = +5%, G = +2%, F = +1%

Characteristics

Performance Characteristics

OPERATING TEMPERATURE RANGE

–55°C to +105°C without derating.

CAPACITANCE TOLERANCE

Standard tolerance is ±10% tolerances of ±20%, ±5%, ±2%, and ±1% are available.

NOTE: *Capacitance shall be measured at 25°C, and at or referred to a frequency of 1KHZ for all values.*

DIELECTRIC STRENGTH

Capacitors shall withstand a DC potential of twice rated voltage for one minute through a limiting resistance of 100 ohms/volt without damage or breakdown.

DISSIPATION FACTOR

When measured at the frequency specified for capacitance measurement, the dissipation factor shall not exceed .05%

INSULATION RESISTANCE

When measured at the applicable test temperature, and rated voltage, after 2 minutes electrification, the insulation resistance shall equal or exceed the following values:

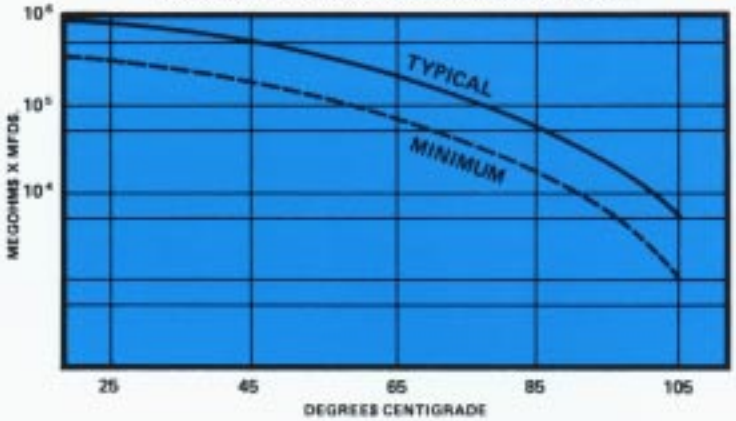
Megohm X Microfarads	+25 C	+85 C	+105 C
	500,000	100,000	10,000
Except the Insulation resistance in megohms need not exceed	1,000,000	200,000	20,000

CAPACITANCE CHANGE

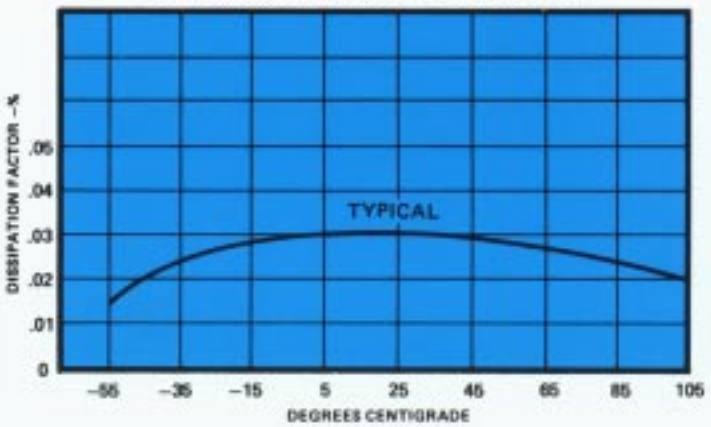
Temperature coefficient –200 ± 50PPM/°C from 25°C to –55°C. –350 ± 50PPM/°C from 25°C to 105°C.

ELECTRICAL CHARACTERISTICS
VS
TEMPERATURE

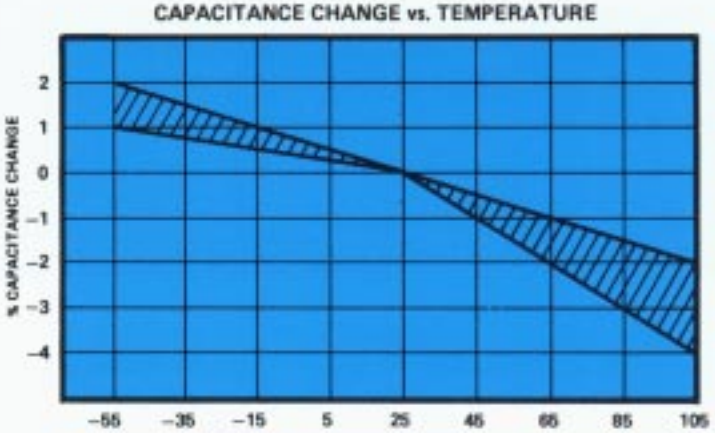
INSULATION RESISTANCE vs. TEMPERATURE



DISSIPATION FACTOR vs. TEMPERATURE



CAPACITANCE CHANGE vs. TEMPERATURE



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