

# METAL-CASE SUBMINIATURE 10 AMPERE THRU-PASS PAPER CAPACITORS



## FEATURES

- Bulkhead mounting
- Excellent RFI specs
- Hermetically encased
- Low inductance connection
- Low insertion loss
- Approved to MIL-PRF-11693 / 07
- 10 Amp current ratings

## MAJOR APPLICATIONS:

Used to suppress RF interference in the following equipment, rotating machinery, ignition systems, electromechanical devices, and electronic device.

## PHYSICAL CHARACTERISTICS

### CONSTRUCTION:

Non-inductive wound paper / foil, wound around a feed-thru bus. The case is the common ground of the three terminal network.

### CASE:

Hermetically sealed metal enclosure; the case and terminal styles are shown above.

### LEAD PULL:

5 lbs (2.3 kg) for one minute. No physical damage.

### LEAD / BEND:

After three complete consecutive bends. No damage.

### MARKING:

Dearborn trademark, type or catalog number, capacitance, tolerance and voltage.

## ELECTRICAL SPECIFICATIONS

**CAPACITANCE RANGE:** 0.001  $\mu$ F to 1.0  $\mu$ F

**DC VOLTAGE RANGE:** 200 VDC to 600 VDC

**CAPACITANCE TOLERANCE:**  $\pm 20\%$ ,  $\pm 10\%$

**OPERATING TEMPERATURE:**  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

**VOLTAGE DERATING:** At  $+125^{\circ}\text{C}$ , 50% of the  $85^{\circ}\text{C}$  rating

**DISSIPATION FACTOR:** 1.0% maximum

**VOLTAGE TEST:** 200% of rated voltage for 2 minutes

### INSULATION RESISTANCE:

Measure at rated voltage, not to exceed 500 VDC, after a 2 minute charge.

- At  $+25^{\circ}\text{C}$ , 20,000 Megohm-Microfarads, need not exceed 30,000 Megaohms
- At  $+85^{\circ}\text{C}$ , 200 Megohm-Microfarads, need not exceed 300 Megaohms

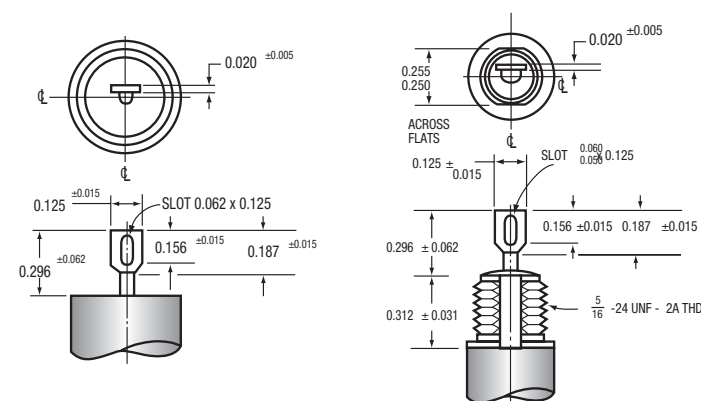
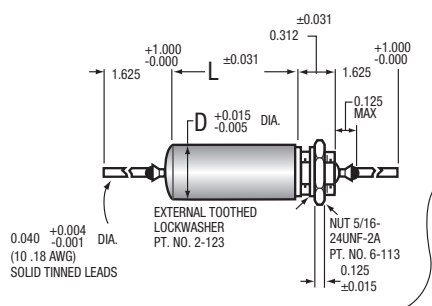
**DC RESISTANCE:** 0.01 ohms maximum

**INSERTION LOSS:** See table on next page

## CIRCUIT DIAGRAM



## DIMENSIONS (in inches)



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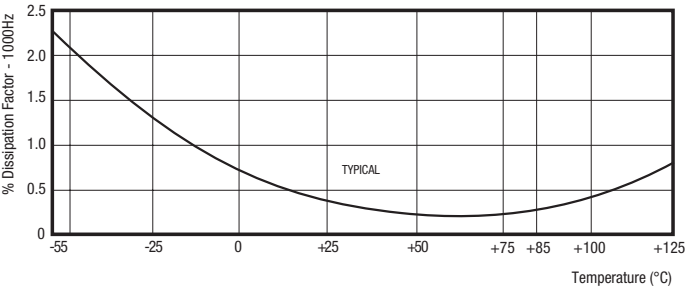
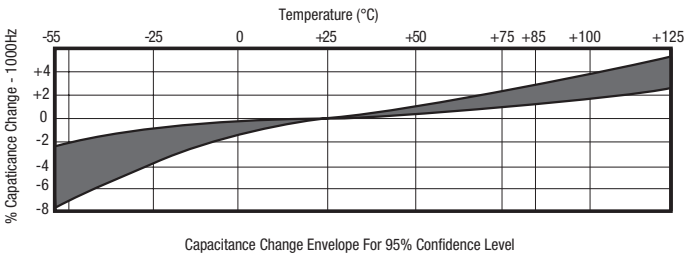
TYPE 103P

## STANDARD RATINGS

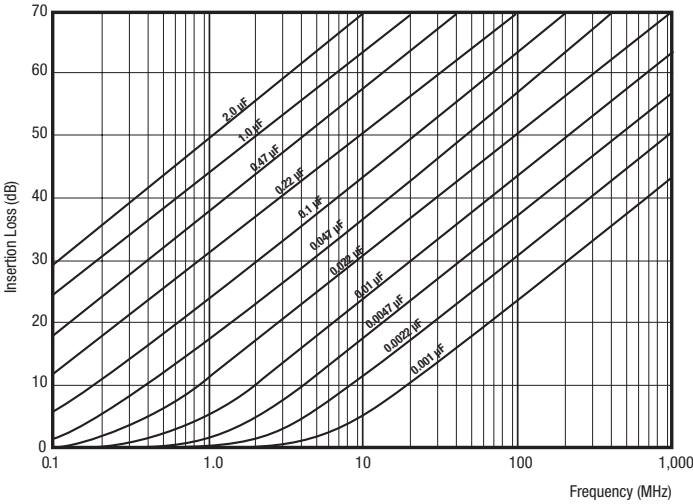
$\mu\text{F}$	Catalog No.*		Inches		Millimeters	
	Tab. Term	Wire Lead	D	L	D	L
200 VDC						
0.047	103P473X0200T	103P473X0200S	0.400	0.875	10.16	22.23
0.10	103P104X0200T	103P104X0200S	0.400	1.125	10.16	28.58
0.22	103P224X0200T	103P224X0200S	0.562	1.125	14.27	28.58
0.47	103P474X0200T	103P474X0200S	0.562	1.875	14.27	47.53
1.00	103P105X0200T	103P105X0200S	0.750	2.125	19.05	53.96
300 VDC						
0.047	103P473X0300T	103P473X0300S	0.400	1.125	10.16	28.58
0.10	103P104X0300T	103P104X0300S	0.400	1.375	10.16	34.83
0.22	103P224X0300T	103P224X0300S	0.562	1.375	14.27	34.83
0.47	103P474X0300T	103P474X0300S	0.670	1.875	17.02	47.83
400 VDC						
0.047	103P473X0400T	103P473X0400S	0.400	1.375	10.16	34.93
0.10	103P104X0400T	103P104X0400S	0.562	1.125	14.27	28.58
0.22	103P224X0400T	103P224X0400S	0.562	1.875	14.27	47.83
0.47	103P474X0400T	103P474X0400S	0.750	2.125	19.05	53.98
600 VDC						
0.0010	103P102X0600T	103P102X0600S	0.400	0.750	10.16	19.05
0.0047	103P472X0600T	103P472X0600S	0.400	0.750	10.16	19.05
0.010	103P103X0600T	103P103X0600S	0.400	0.750	10.16	19.05
0.047	103P473X0600T	103P473X0600S	0.400	1.375	10.16	34.93
0.10	103P104X0600T	103P104X0600S	0.562	1.375	14.27	34.93
0.22	103P224X0600T	103P224X0600S	0.670	1.875	17.02	47.83
0.47	103P474X0600T	103P474X0600S	0.750	2.375	19.05	60.32

\*The catalog numbers given are for capacitance tolerance of  $\pm 20\%$ . To specify  $\pm 10\%$  tolerance, change X0 to X9. Mounting hardware furnished unassembled.

## ELECTRICAL CHARACTERISTICS VS. TEMPERATURE



## INSERTION LOSS CHARACTERISTICS FOR IDEAL CAPACITORS



These capacitors are designed to meet all the electrical, mechanical, and environmental requirements of Military Specification MIL-PRF-11693. The insertion loss of such capacitors is defined by this military specification as follows: "...the insertion loss shall be not more than 6 decibels (dB) permissible dips below the value shown on the graph above for an ideal capacitor of the same nominal capacitance value, when tested at frequencies from 0.15 megahertz (MHz) up to that frequency at which the insertion loss of the capacitor under test becomes 60 dB; at all higher frequencies, up to 1,000MHz, the insertion loss shall not fall below 60 dB. Deviations in the nature of dips in the curve will be permitted; such dips indicate a drop in insertion loss below that of an ideal capacitor followed by a rise in insertion loss, as frequency is increased, faster than the rise that is characteristic of an ideal capacitor. Such dips are characteristic of all extended foil capacitors."