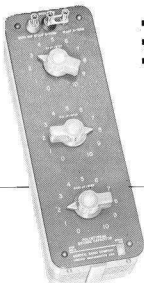


standard capacitors

DECADE CAPACITORS

Type 1419



- 100 pF to 1.1 μ F
- choice of models
- two- or three terminal connection

Type 1419 Decade Capacitors are offered in four models using three different dielectric materials to satisfy a variety of needs.

Types 1419-A and -B (Polystyrene)

Capacitance and dissipation factor constant with frequency, essentially noninductive, very low dielectric absorption. The dielectric is specially prepared of purified high-molecular-weight polystyrene, having very high resistance and freedom from interfacial polarization. Moisture sealing with Teflon® feed-through insulators assures high performance under adverse humidity conditions.

Type 1419-K (Silvered Mica)

Higher accuracy, low dissipation factor, and $\pm 35 \pm 10$ ppm/°C temperature coefficient (10-50°C) for use in higher ambient temperatures.

Type 1419-M (Molded Silvered Mica and Paper)

For economy and excellent performance characteristics, sealed foil-and-paper capacitors are used in the highest-value decade and EIA Characteristic-C molded silvered micas in the smaller two.

* Registered trademark of E. I. duPont de Nemours and Company.

specifications

TYPE NUMBER	1419-A	1419-B	1419-K	1419-M
Dielectric	Polystyrene	Polystyrene	Silvered Mica	Paper and Silvered Mica (Molded)
Maximum Capacitance of Box (μF)	1.110	1.110	1.110	1.110
	0.001	0.0001	0.001	0.001
	3	4	3	3
	37 pF	50 pF	41 pF	35 pF
	15 pF	20 pF	13 pF	16 pF
	$\pm 1\%$	$\pm(1\% + 2 \text{ pF})$	$\pm 0.5\%$	$\pm 1.5\%$ on highest decade $\pm 1\%$ on others
	$\pm 1\%$ except $\pm 1.5\%$ on smallest decade	-1% or $(-2\% + 4 \text{ pF})$	$\pm 0.5\%$ except $\pm 1\%$ on smallest decade	$\pm 1.5\%$ on highest decade $\pm 1\%$ on others
Dissipation Factor at 1 kHz		<0.0002	<0.0003	<0.005
Insulation Resistance at 100 V, 25°C, 50% RH, (ohms), typical		$>10^7$	$>5 \times 10^7$	$>10^7$
Max Voltage² (dc or peak)	500 V up to 35 kHz		500 V up to 10 kHz	500 V up to 1 kHz
Max Operating Temperature (C)	65		75	90
Voltage Recovery³	<0.1%		<3%	<5% on highest decade
Resonant Frequencies (typical)	1 μ F—400 kHz; 0.1 μ F—1MHz; 0.01 μ F—2.7 MHz; 0.001 μ F—7.8 MHz; 0.0001 μ F—23 MHz			
Dc Cap/1-kHz Cap	>1.001			
Cabinet			lab-bench	Typically 1.03
Over-all Dimensions — in. (mm)	13 x 4 $\frac{1}{2}$ x 5 (330 x 110 x 130)	16 $\frac{1}{2}$ x 4 $\frac{1}{2}$ x 5 (415 x 110 x 130)	14 $\frac{1}{2}$ x 5 $\frac{1}{2}$ x 6 (359 x 140 x 153)	14 $\frac{1}{2}$ x 5 $\frac{1}{2}$ x 6 (359 x 140 x 153)
Net Weight — lb (kg)	8 $\frac{1}{2}$ (3.8)	10 $\frac{1}{2}$ (4.8)	11 $\frac{1}{2}$ (5.5)	6 $\frac{1}{2}$ (2.9)
Shipping Weight — lb (kg)	10 (4.6)	11 (5)	18 (8.5)	8 (3.7)
Catalog Number	1419-9701	1419-9702	1419-9711	1419-9713

¹ Capacitance increments from zero position are within this percentage of the indicated value for any setting at 1 kHz.

² Units are checked with switch mechanism high, electrically, and the common lead and case grounded.

³ At frequencies above the indicated max, the allowable voltage decreases and is (approx) inversely proportional to frequency. These limits correspond to a temperature of 40°C at max setting of each decade in box.

⁴ Final % of original charging voltage after a charging period of one hour and a 10-second discharge through a resistance equal to one ohm per volt of charging.

1419 Decades

(Left) Typical plot of change in capacitance at maximum setting of each decade as a function of frequency. The capacitance curves are referred to the value the capacitor would have if there were no interfacial polarization and no series inductance. Since the capacitors are adjusted to their rated accuracy at 1 kHz, the 1-kHz value on the plots should be used as a basis of reference in estimating the frequency error of the capacitor.

