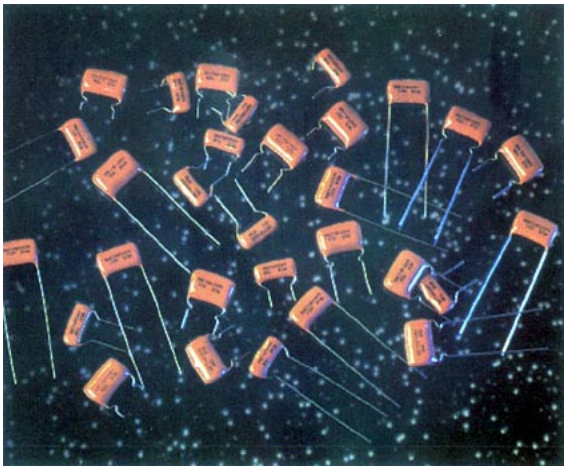
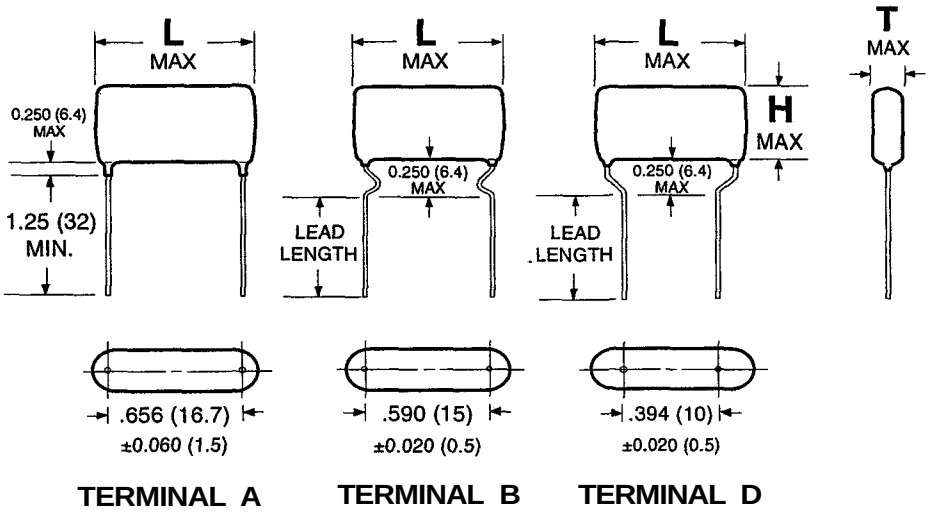
Type 716P HV, Orange Drop,® Polypropylene Film/Foil Capacitors

High Performance

Type 716P Orange Drop®
High Voltage, Compact Design
High Performance
Polypropylene Film/Foil
Capacitors



Standard Lead Styles/Lead Spacings



Additional Specifications

Lead Wire:
Tinned Copper; #20 AWG, .032 (0.8)

Construction/Dielectric:
Non-inductively wound with extended foil. Series-section design with polypropylene film; utilizes a floating common of metallized polypropylene, which provides self-healing characteristics.

Maximum Dissipation Factor (%):

	@20KHz	@100KHz
1000 VDC:	.032	.054
2000 VDC:	.029	.040

Corona Start Voltage (typical):

1000 VDC: 600 Volts RMS
2000 VDC: 650 Volts RMS

Dimensions in inches, metric (mm) in parenthesis.

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General Specifications

The 715P and 716P series are manufactured with polypropylene film and extended foil. Polypropylene has a very low dissipation factor, low dielectric absorption and exhibits excellent capacitance stability. These characteristics combined with the direct connection of the lead wire to the extended foil electrode makes the 715P and 716P series ideal for high current, high pulse applications.

The 715P series has a round profile and is available in tolerances as close as ±1%. The 716P series has a pressed profile and, in addition, is designed with copper leads, thus adding to it's performance in high frequency, high pulse current applications.

Other specifications are listed below and on the following pages.

Operating Temperature Range:
The standard operating temperature range for polypropylene film is -55°C to +85°C. The 715P and 716P may be operated up to +105°C provided the DC working voltage is reduced by 50%.

For specific derating of the AC voltage when operating above +85°C please contact our design engineering department.

The maximum operating temperature for 715P and 716P polypropylene film capacitors is + 105°C.

Dielectric Withstanding Voltage:
Units rated below 800 VDC shall withstand a DC potential of 250% of rated voltage applied between terminals for not more than 5 seconds; units rated 800 VDC and above shall withstand 200% of rated voltage.

Construction:
Units rated 100 through 600 VDC are single section designs constructed of plain polypropylene film with extended foil. Units rated 800 VDC and above are series-section designs with extended foil and incorporate a floating common of metallized polypropylene. All units are non-inductively wound.

Temperature Coefficient:
The typical temperature coefficient is -180 ppm/°C over the temperature range of -55°C to +85°C.

Humidity Testing:
Units subjected to 95% relative humidity for 72 hours with no voltage applied at +75°C. After 4 hours of drying minimum product of insulation resistance and capacitance shall be 50,000 megohm-microfarads.

DC Voltage Life Test:
Minimum of 500 hours at +85°C at 150% of rated voltage. After test, capacitance shall not have changed by more than 3%, insulation resistance shall not have decreased by more than 25% and dissipation factor shall not have changed by more than 0.03%. Measurements made at 1 KHz.

AC Voltage Life Test:
Minimum of 500 hours at +85°C at 60 Hz. AC test voltage applied at 110% of AC rating. After test, capacitance shall not have changed by more than 3%, insulation resistance shall not have decreased by more than 25%, and dissipation factor shall not have changed by more than 0.03%. Measurements made at 1 KHz.

Additional notes on Life Testing:
CDE performs standard 500 hour accelerated life tests, both DC and line frequency AC, to monitor process control over our wide range of products.

We also perform longer term life testing, typically 2000 hours, during development of most products. In addition we do accelerated life testing at 10-250 KHz for our High Performance AC products. For additional life test information please contact us.

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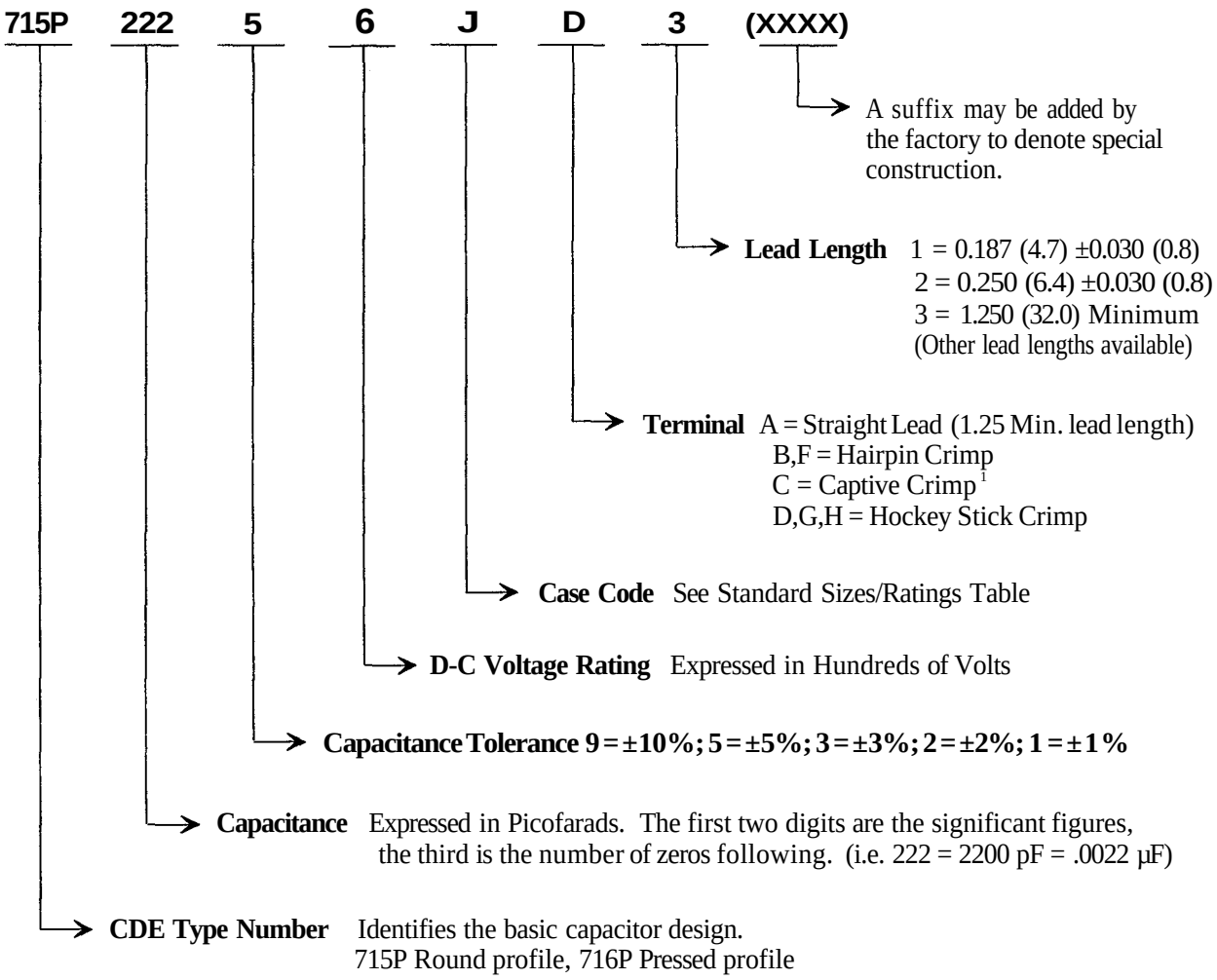
Ordering/Part Number Information



[1] Terminal C has a fixed lead length of 0.156 (4.0) ±0.020 (0.5), therefore it is not necessary to indicate the lead length digit when ordering. Available for "L" case code parts only

Please note;

While it is not possible to list every capacitance value, tolerance, or design/size variation available, our flexibility in design and manufacturing gives us the ability to quickly, and cost effectively, provide you with the capacitor you require. Please contact us today with your specific needs!

Dimensions in inches, metric (mm) in parenthesis.

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Standard Sizes/Ratings

Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	Max dV/dt (Volts/µsec)
1000 VDC / 450 VAC*					
.00082	716P821910K	.85 (21.6)	.25 (6.4)	.34 (8.6)	47500
.001	716P102910K	.85 (21.6)	.25 (6.4)	.36 (9.1)	43000
.0012	716P122910K	.85 (21.6)	.26 (6.6)	.36 (9.1)	39300
.0015	716P152910K	.85 (21.6)	.25 (6.4)	.37 (9.4)	35100
.0018	716P182910K	.85 (21.6)	.24 (6.4)	.37 (9.4)	32100
.0022	716P222910K	.85 (21.6)	.25 (6.6)	.38 (9.7)	29000
.0027	716P272910K	.85 (21.6)	.27 (6.9)	.40 (10.2)	26200
.0033	716P332910K	.85 (21.6)	.26 (6.6)	.46 (11.7)	23700
.0039	716P392910K	.85 (21.6)	.27 (6.9)	.48 (12.2)	21800
.0047	716P472910K	.85 (21.6)	.29 (7.4)	.50 (12.7)	19900
.0056	716P562910K	.85 (21.6)	.31 (7.9)	.52 (13.2)	18200
.0068	716P682910K	.85 (21.6)	.34 (8.6)	.55 (14.0)	16500
.0082	716P822910K	.85 (21.6)	.34 (8.6)	.58 (14.7)	15000
.01	716P103910K	.85 (21.6)	.35 (8.9)	.64 (16.3)	13600
.012	716P123910K	.85 (21.6)	.38 (9.7)	.67 (17.0)	12400
.015	716P153910K	.85 (21.6)	.43 (10.9)	.72 (18.3)	11100
.018	716P183910K	.85 (21.6)	.47 (11.9)	.77 (19.6)	10100
.022	716P223910K	.85 (21.6)	.49 (12.4)	.84 (21.3)	9200
.027	716P273910K	.85 (21.6)	.55 (14.0)	.90 (22.9)	8300
.033	716P333910K	.85 (21.6)	.62 (15.7)	.97 (24.6)	7500
2000 VDC / 500 VAC*					
.00022	716P221920K	.85 (21.6)	.25 (6.4)	.38 (9.7)	102000
.00027	716P271920K	.85 (21.6)	.26 (6.6)	.39 (9.9)	92100
.00033	716P331920K	.85 (21.6)	.25 (6.4)	.39 (9.9)	83300
.00039	716P391920K	.85 (21.6)	.26 (6.6)	.39 (9.9)	76600
.00047	716P471920K	.85 (21.6)	.26 (6.6)	.39 (9.9)	69600
.00056	716P561920K	.85 (21.6)	.27 (6.9)	.40 (10.2)	63900
.00068	716P681920K	.85 (21.6)	.28 (7.1)	.41 (10.4)	58000
.00082	716P821920K	.85 (21.6)	.27 (6.9)	.48 (12.2)	52800
.001	716P102920K	.85 (21.6)	.29 (7.4)	.50 (12.7)	47800
.0015	716P152920K	.85 (21.6)	.33 (8.4)	.54 (13.7)	39100
.0018	716P182920K	.85 (21.6)	.35 (8.9)	.56 (14.2)	35700
.0022	716P222920K	.85 (21.6)	.38 (9.7)	.59 (15.0)	32200
.0027	716P272920K	.85 (21.6)	.38 (9.7)	.62 (15.7)	29100
.0033	716P332920K	.85 (21.6)	.39 (9.9)	.68 (17.3)	26300
.0039	716P392920K	.85 (21.6)	.42 (10.7)	.71 (18.0)	24200
.0047	716P472920K	.85 (21.6)	.46 (11.7)	.75 (19.1)	22100
.0056	716P562920K	.85 (21.6)	.47 (11.9)	.82 (20.8)	20200
.0068	716P682920K	.85 (21.6)	.52 (13.2)	.87 (22.1)	18300
.0082	716P822920K	.85 (21.6)	.57 (14.5)	.92 (23.4)	16700
.01	716P103920K	.85 (21.6)	.63 (16.0)	.98 (24.9)	15100

* Please refer to performance curves for RMS Voltage vs. Frequency characteristic.

[1] To complete part number for proper tolerance, terminal style and lead length please refer to the Ordering/Part Number Information page.

Note: dV/dt ratings based on measurements made at junction of the wire leads and capacitor body.

Dimensions in inches, metric (mm) in parenthesis.

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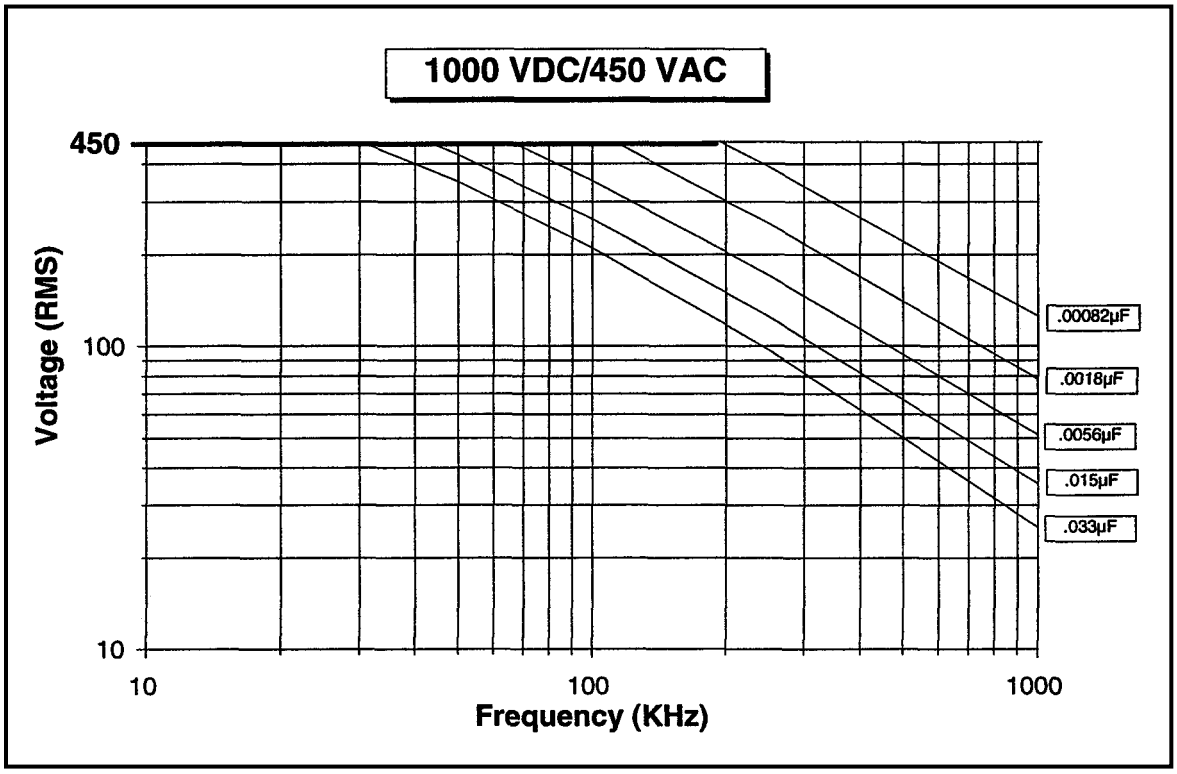
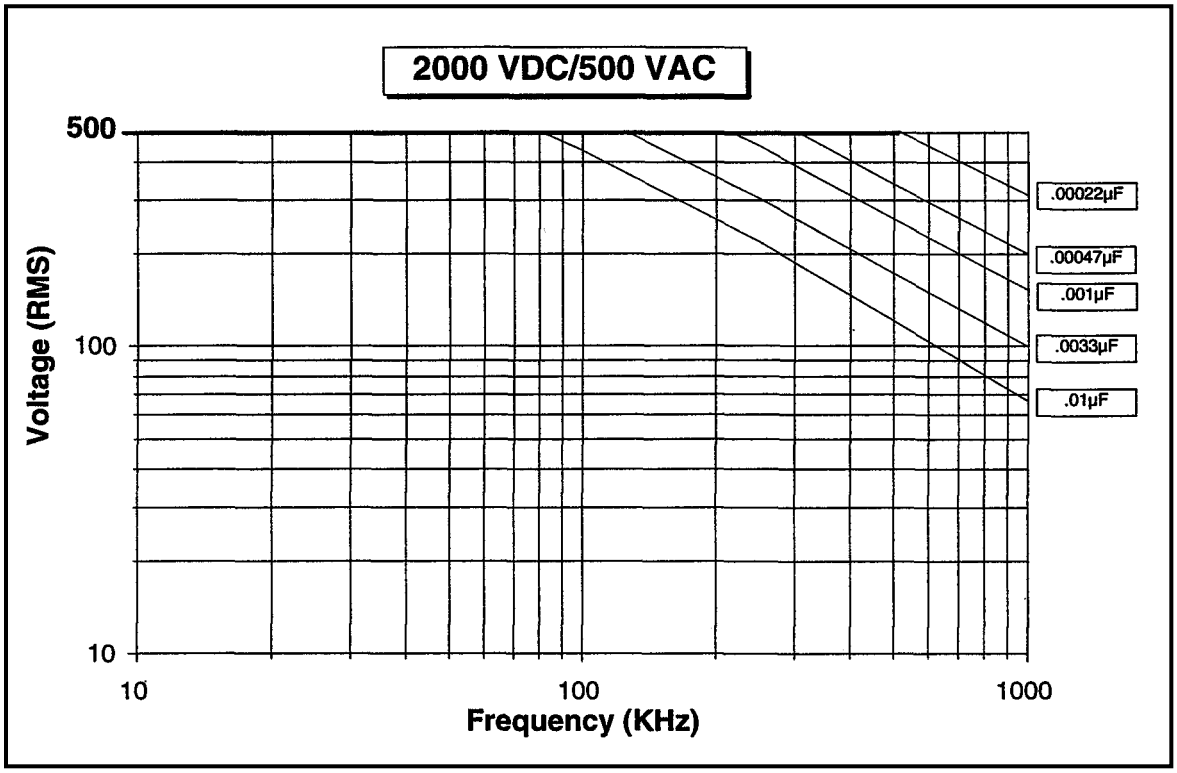
RMS Voltage vs. Frequency @ +85°C





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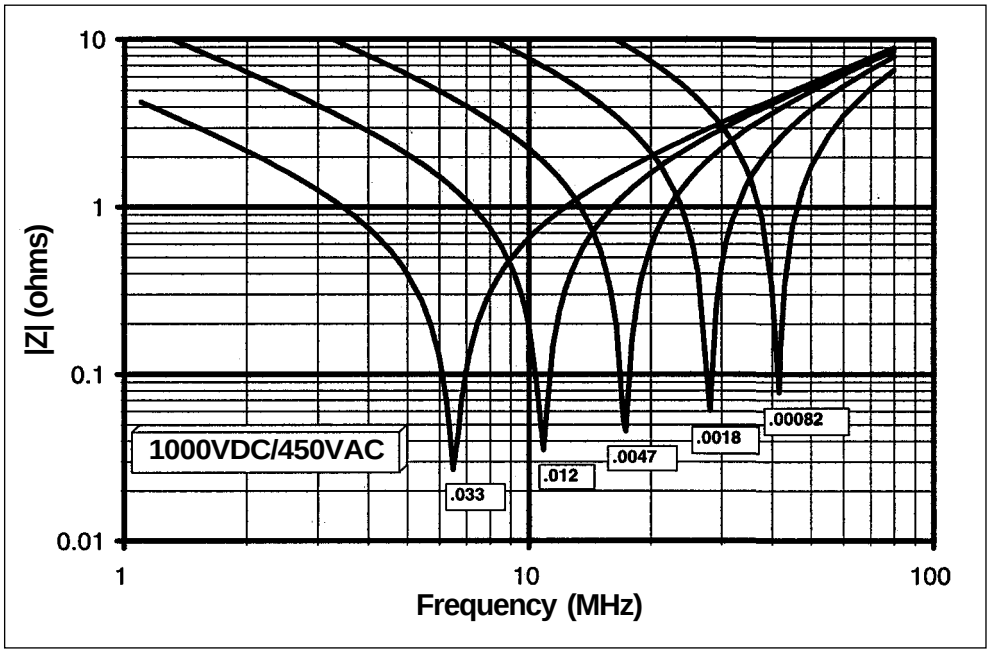
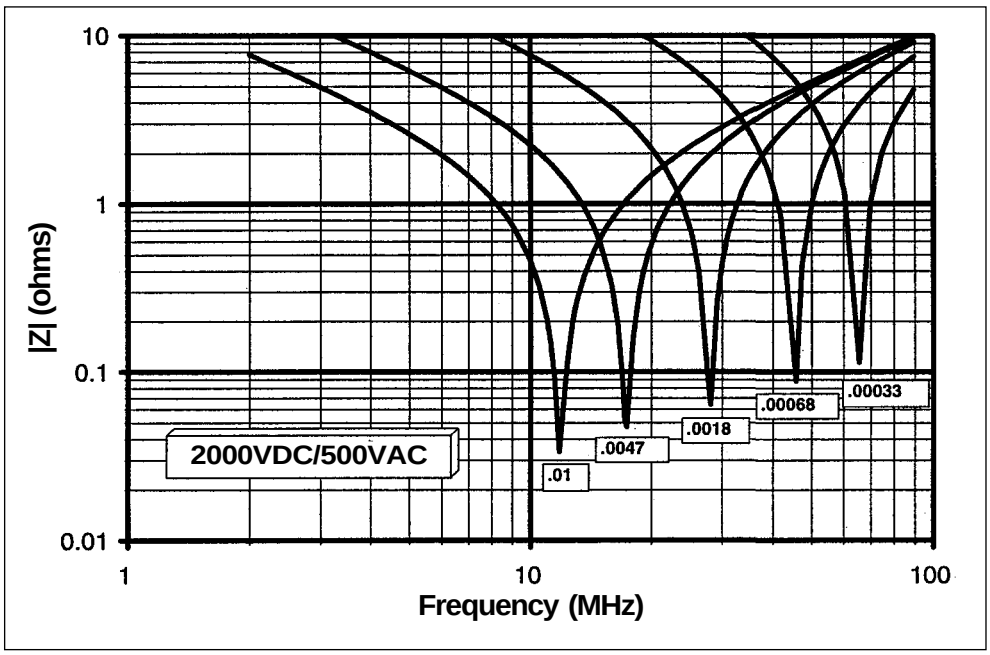
Typical Impedance vs. Frequency





Please note: Capacitance values above are in µF The resonant frequency and impedance shown above apply to units with a 0.250 (6.4) lead length and are typical values only. Please contact us for additional data.

Dimensions in inches, metric (mm) in parenthesis.

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