Type 725M Orange Drop® Metallized Polypropylene Film Capacitors

Features

- Radial-lead
- Pressed profile, compact size
- Non-inductively wound
- Very low ESR/ESL
- Self-healing properties

Specifications

Capacitance Range:
.01 to 4.7µF

Capacitance Tolerance:
±5%, ±10%
(other tolerances available upon request)

Voltage Ratings:
160 to 630 Volts D-C
100 to 250 Volts A-C

Operating Temperature Range:
-55°C to +85°C (at full voltage)

Voltage Derating:
At +105°C, 50% of +85°C rating.

Dissipation Factor:
0.1% Maximum @ 1 KHz, +25°C
(contact us for additional details on specific capacitance and voltage ratings.)

Corona Start Voltage (typical):

160 VDC units:	250 Volts RMS
250 VDC units:	275 Volts RMS
400 VDC units:	300 Volts RMS
630 VDC units:	325 Volts RMS

Insulation Resistance:

At +25°C:	200,000 MΩ for C ≤ 0.5 µF
	100,000 MΩ-µF for C > 0.5 µF
At +85°C:	10,000 MΩ for C ≤ 0.5 µF
	5,000 MΩ-µF for C > 0.5 µF

Pulse Rise Time (dV/dt):
See standard ratings table. dV/dt rating is in Volts/µsec.

Encapsulation:
Conformal coating of orange, flame retardant epoxy. Meets UL94V-0 specifications.

Lead Wire:
Tinned copper-clad steel, .032 (0.8) diameter, #20 AWG.

Dielectric/Construction:
Metallized Polypropylene film, single section design. Non-inductively wound.

Regulatory Information

Dimensions in inches, metric (mm) in parenthesis.

CDE Cornell Dubilier • 1605 E. Rodney French Blvd. • New Bedford, MA 02744 • Phone: (508)996-8561 • Fax: (508)996-3830

Ordering/Part Number Information

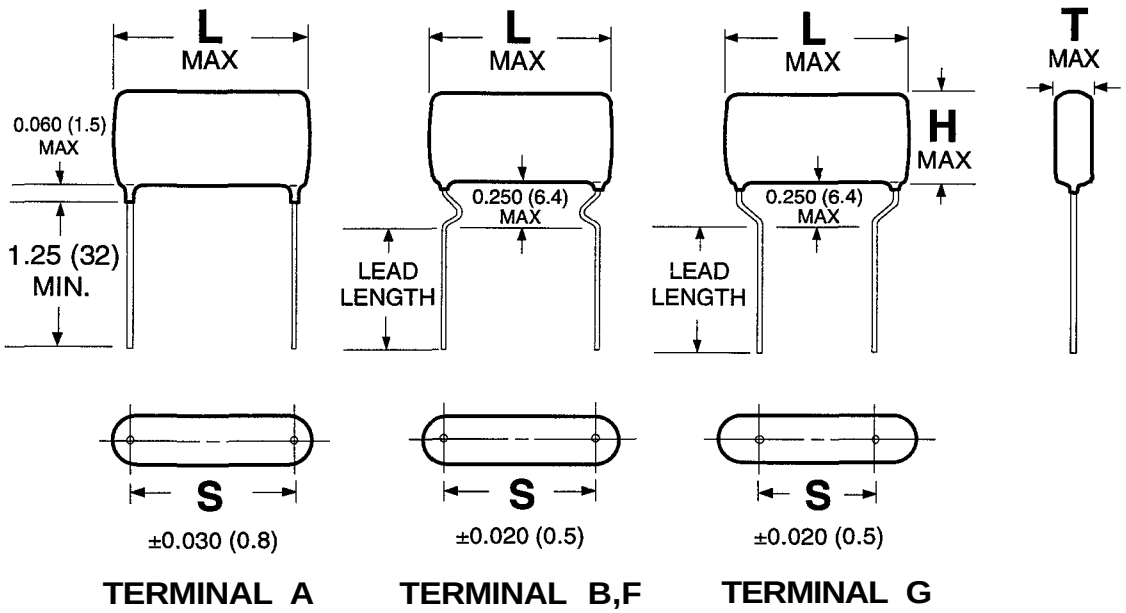
725M 334 9 2 J B 3 (XXXX)

- **(XXXX)** — A suffix may be added by the factory to denote special construction.
- **3** — **Lead Length** 1 = 0.187 (4.7) ± 0.030 (0.8); 2 = 0.250 (6.4) ± 0.030 (0.8); 3 = 1.250 (32) Minimum. Custom lead lengths available upon request.
- **B** — **Terminal** A = Straight Lead; B,F = Hairpin Crimp; G = Hockey Stick Crimp
- **J** — **Case Code** See Standard Sizes/Ratings Table
- **2** — **D-C Voltage Rating** 1 = 160 VDC; 2 = 250 VDC; 4 = 400 VDC; 6 = 630 VDC
- **9** — **Capacitance Tolerance** 9 = ±10%; 5 = ±5%
- **334** — **Capacitance** Expressed in Picofarads. The first two digits are the significant figures, the third is the number of zeros following. (i.e. 334 = 330000 pF = .33 µF)
- **725M** — **CDE Type Number** Identifies the basic capacitor design.

Standard Marking Format

Sample Marking on unit	Description	Tolerance codes per EIA Standards
CDE725M250V 334K 9910	CDE - CDE Electronics identification 725M - Type number 250V- D-C Voltage rating, Volts 334K - Capacitance and tolerance code 9910 - Weekly date code (i.e. 10th week of 1999)	J ±5% K ±10%

Standard Lead Styles



TERMINAL A **TERMINAL B,F** **TERMINAL G**

Standard Lead Spacings

CASE CODE	S			
	Term. A	Term. B	Term. F	Term. G
N	0.394 (10.0)	0.394 (10.0)	0.295 (7.5)	0.197 (5.0)
J	0.590 (15.0)	0.590 (15.0)	0.394 (10.0)	0.295 (7.5)
R	0.886 (22.5)	0.886 (22.5)	0.590 (15.0)	0.394 (10.0)
L	1.083 (27.5)	1.083 (27.5)	0.886 (22.5)	0.590 (15.0)

Type 725M Standard Sizes/Ratings

Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	dV/dt Volts/µsec
160 VDC / 100 VAC*					
0.1	725M10491N	.52 (13.2)	.21 (5.3)	.39 (9.9)	55
0.12	725M12491N	.52 (13.2)	.26 (6.6)	.43 (10.9)	64
0.15	725M15491N	.52 (13.2)	.22 (5.9)	.49 (12.4)	73
0.18	725M18491N	.52 (13.2)	.24 (6.1)	.51 (13.0)	79
0.22	725M22491J	.73 (18.5)	.20 (5.1)	.46 (11.7)	30
0.25	725M25491J	.73 (18.5)	.21 (5.3)	.48 (12.2)	33
0.27	725M27491J	.73 (18.5)	.21 (5.3)	.48 (12.2)	35
0.3	725M30491J	.73 (18.5)	.22 (5.6)	.49 (12.4)	37
0.33	725M33491J	.73 (18.5)	.23 (5.8)	.50 (12.7)	38
0.39	725M39491J	.73 (18.5)	.25 (6.4)	.52 (13.2)	41
0.43	725M43491J	.73 (18.5)	.26 (6.6)	.54 (13.7)	42
0.47	725M47491J	.73 (18.5)	.28 (7.1)	.55 (14.0)	43
0.5	725M50491J	.73 (18.5)	.28 (7.1)	.56 (14.2)	44
0.56	725M56491J	.73 (18.5)	.30 (7.6)	.57 (14.5)	45
0.62	725M62491J	.73 (18.5)	.32 (8.1)	.59 (15.0)	46
0.68	725M68491J	.73 (18.5)	.33 (8.4)	.60 (15.2)	47
0.75	725M75491R	1.03 (26.2)	.27 (6.9)	.54 (13.7)	25
0.82	725M82491R	1.03 (26.2)	.28 (7.1)	.55 (14.0)	26
0.9	725M90491R	1.03 (26.2)	.29 (7.4)	.57 (14.5)	27
1.0	725M10591R	1.03 (26.2)	.31 (7.9)	.58 (14.7)	27
1.2	725M12591R	1.03 (26.2)	.34 (8.6)	.61 (15.5)	28
1.5	725M15591R	1.03 (26.2)	.38 (9.7)	.65 (16.5)	29
1.8	725M18591R	1.03 (26.2)	.42 (10.7)	.69 (17.5)	30
2.0	725M20591R	1.03 (26.2)	.44 (11.2)	.72 (18.3)	30
2.2	725M22591R	1.03 (26.2)	.44 (11.2)	.78 (19.8)	30
2.5	725M25591L	1.23 (31.2)	.44 (11.2)	.71 (18.0)	24
2.7	725M27591L	1.23 (31.2)	.46 (11.7)	.73 (18.5)	24
3.0	725M30591L	1.23 (31.2)	.48 (12.2)	.76 (19.3)	24
3.3	725M33591L	1.23 (31.2)	.51 (13.0)	.78 (19.8)	24
3.6	725M36591L	1.23 (31.2)	.53 (13.5)	.81 (21.6)	24
3.9	725M39591L	1.23 (31.2)	.52 (13.2)	.87 (22.1)	24
4.3	725M43591L	1.23 (31.2)	.55 (14.0)	.90 (22.9)	25
4.7	725M47591L	1.23 (31.2)	.58 (14.7)	.92 (23.4)	25

Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	dV/dt Volts/µsec
250 VDC / 160 VAC*					
0.056	725M56392N	.52 (13.2)	.21 (5.3)	.35 (8.9)	54
0.062	725M62392N	.52 (13.2)	.21 (5.3)	.38 (9.7)	61
0.068	725M68392N	.52 (13.2)	.22 (5.6)	.39 (9.9)	68
0.075	725M75392N	.52 (13.2)	.21 (5.3)	.42 (10.7)	73
0.082	725M82392N	.52 (13.2)	.22 (5.6)	.43 (10.9)	77
0.09	725M90392N	.52 (13.2)	.23 (5.8)	.44 (11.2)	83
0.1	725M10492N	.52 (13.2)	.24 (6.1)	.45 (11.4)	88
0.12	725M12492N	.52 (13.2)	.26 (6.6)	.47 (11.9)	95
0.15	725M15492N	.52 (13.2)	.29 (7.4)	.50 (12.7)	103
0.18	725M18492J	.73 (18.5)	.21 (5.3)	.48 (12.2)	42
0.22	725M22492J	.73 (18.5)	.23 (5.8)	.50 (12.7)	46
0.25	725M25492J	.73 (18.5)	.25 (6.4)	.52 (13.2)	48
0.27	725M27492J	.73 (18.5)	.26 (6.6)	.53 (13.5)	50
0.3	725M30492J	.73 (18.5)	.27 (6.9)	.54 (13.7)	51
0.33	725M33492J	.73 (18.5)	.28 (7.1)	.55 (14.0)	53
0.39	725M39492J	.73 (18.5)	.31 (7.9)	.58 (14.7)	55
0.43	725M43492J	.73 (18.5)	.32 (8.1)	.60 (15.2)	56
0.47	725M47492R	1.03 (26.2)	.26 (6.6)	.53 (13.5)	30
0.5	725N50492R	1.03 (26.2)	.27 (6.9)	.54 (13.7)	30
0.56	725M56492R	1.03 (26.2)	.28 (7.1)	.56 (14.2)	31
0.62	725M62492R	1.03 (26.2)	.30 (7.6)	.57 (14.5)	32
0.68	725M68492R	1.03 (26.2)	.29 (7.4)	.63 (16.0)	33
0.75	725M75492R	1.03 (26.2)	.31 (7.9)	.64 (16.3)	33
0.82	725M82492R	1.03 (26.2)	.32 (8.1)	.66 (16.8)	34
0.9	725M90492R	1.03 (26.2)	.34 (8.6)	.67 (17.0)	34
1.0	725M10592R	1.03 (26.2)	.36 (9.1)	.69 (17.5)	35
1.2	725M12592R	1.03 (26.2)	.39 (9.9)	.73 (18.5)	36
1.5	725M15592L	1.23 (31.2)	.39 (9.9)	.73 (18.5)	28
1.8	725M18592L	1.23 (31.2)	.43 (10.9)	.77 (19.6)	29
2.0	725M20592L	1.23 (31.2)	.45 (11.4)	.79 (20.1)	29
2.2	725M22592L	1.23 (31.2)	.48 (12.2)	.82 (20.8)	29
2.5	725M25592L	1.23 (31.2)	.51 (13.0)	.85 (21.6)	29
2.7	725M27592L	1.23 (31.2)	.53 (13.5)	.88 (22.4)	29
3.0	725M30592L	1.23 (31.2)	.57 (14.5)	.91 (23.1)	30
3.3	725M33592L	1.23 (31.2)	.60 (15.2)	.94 (23.9)	30

* 60 Hz., RMS

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

Type 725M, Orange Drop®, Metallized Polypropylene Film Capacitors

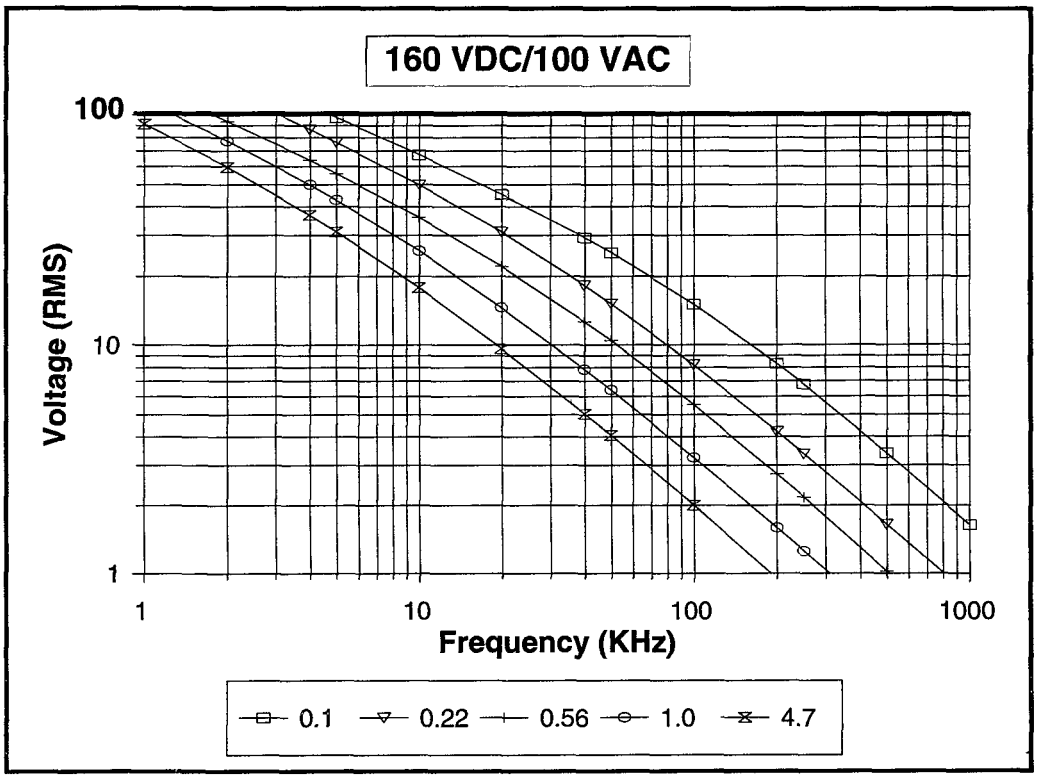
Type 725M Standard Sizes/Ratings

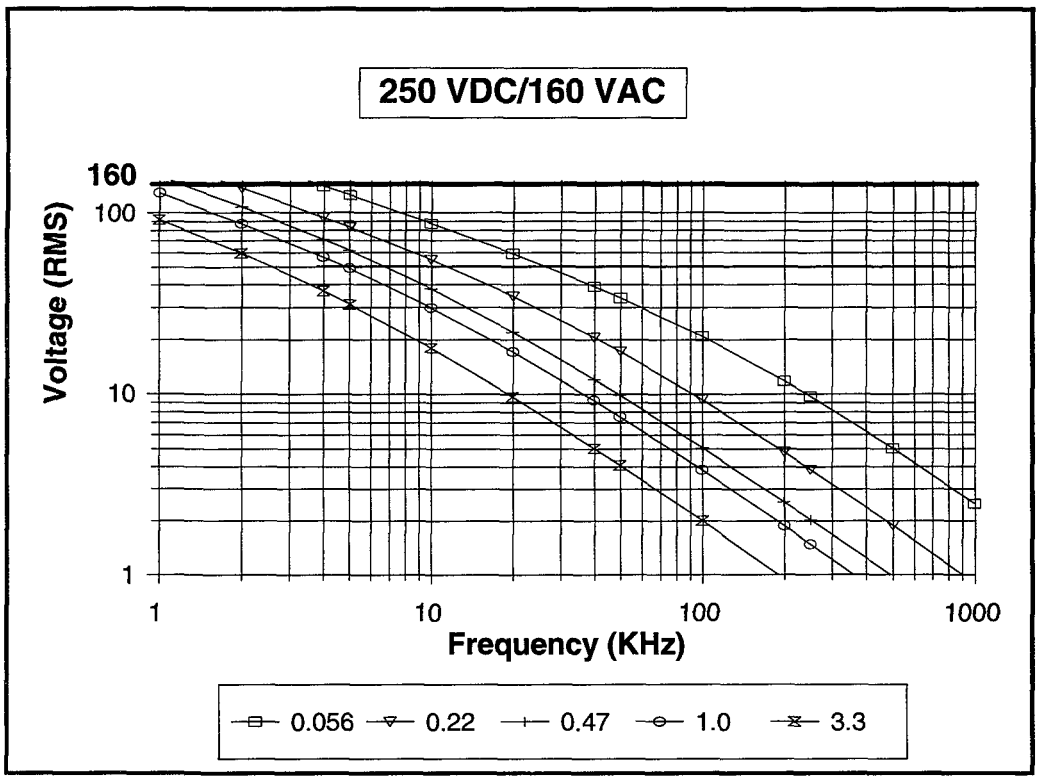
Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	dV/dt Volts/µsec	Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	dV/dt Volts/µsec
400 VDC / 220 VAC*						630 VDC / 250 VAC*					
0.027	725M27394N	.52 (13.2)	.21 (5.3)	.36 (9.1)	90	0.01	725M10396N	.52 (13.2)	.21 (5.3)	.35 (8.9)	161
0.033	725M33394N	.52 (13.2)	.21 (5.3)	.42 (10.7)	110	0.012	725M12396N	.52 (13.2)	.23 (5.8)	.37 (9.4)	196
0.039	725M39394N	.52 (13.2)	.23 (5.8)	.43 (10.9)	124	0.015	725M15396N	.52 (13.2)	.23 (5.8)	.43 (10.9)	232
0.043	725M43394N	.52 (13.2)	.24 (6.1)	.44 (11.2)	132	0.018	725M18396N	.52 (13.2)	.25 (6.4)	.45 (11.4)	256
0.047	725M47394N	.52 (13.2)	.24 (6.1)	.45 (11.4)	138	0.022	725M22396N	.52 (13.2)	.27 (6.9)	.48 (12.2)	279
0.05	725M50394N	.52 (13.2)	.25 (6.4)	.46 (11.7)	142	0.025	725M25396N	.52 (13.2)	.29 (7.4)	.49 (12.4)	291
0.056	725M56394N	.52 (13.2)	.27 (6.9)	.47(11.9)	149	0.027	725M27396N	.52 (13.2)	.27 (6.9)	.55 (14.0)	297
0.062	725M62394N	.52 (13.2)	.28 (7.1)	.49 (12.4)	155	0.033	725M33396N	.52 (13.2)	.30 (7.6)	.58 (14.7)	312
0.068	725M68394N	.52 (13.2)	.27 (6.9)	.54 (13.7)	159	0.039	725M39396N	.52 (13.2)	.33 (8.4)	.60 (15.2)	322
0.075	725M75394N	.52 (13.2)	.28 (7.1)	.55 (14.0)	164	0.043	725M43396N	.52 (13.2)	.35 (8.9)	.62 (15.7)	328
0.082	725M82394N	.52 (13.2)	.29 (7.4)	.57(14.5)	166	0.047	725M47396N	.52 (13.2)	.36 (9.1)	.64 (16.3)	332
0.09	725M90394N	.52 (13.2)	.31 (7.9)	.58 (14.7)	171	0.05	725M50396N	.52 (13.2)	.37 (9.4)	.65 (16.1)	335
						0.056	725M56396N	.52 (13.2)	.40 (10.2)	.67 (17.0)	340
0.1	725M10494J	.73 (18.5)	.22 (5.6)	.49 (12.4)	61	0.062	725M62396N	.52 (13.2)	.42 (10.7)	.69 (17.5)	344
0.12	725M12494J	.73 (18.5)	.24 (6.1)	.51 (13.0)	66						
0.15	725M15494J	.73 (18.5)	.27 (6.9)	.54 (13.7)	72	0.068	725M68396J	.73 (18.5)	.27 (6.9)	.54 (13.7)	115
0.18	725M18494J	.73 (18.5)	.29 (7.4)	.56 (14.2)	75	0.075	725M75396J	.73 (18.5)	.28 (7.1)	.56 (14.2)	118
0.22	725M22494J	.73 (18.5)	.32 (8.1)	.60 (15.2)	78	0.082	725M82396J	.73 (18.5)	.30 (7.6)	.57 (14.5)	120
0.25	725M25494J	.73 (18.5)	.34 (8.6)	.62 (15.7)	80	0.09	725M90396J	.73 (18.5)	.31 (7.9)	.58 (14.7)	123
0.27	725M27494J	.73 (18.5)	.36 (9.1)	.63 (16.0)	81	0.1	725M10496J	.73 (18.5)	.33 (8.4)	.60 (15.2)	125
0.3	725M30494J	.73 (18.5)	.38 (9.7)	.65 (16.5)	82	0.12	725M12496J	.73 (18.5)	.36 (9.1)	.63 (16.0)	129
						0.15	725M15496J	.73 (18.5)	.40 (10.2)	.68 (17.3)	133
0.33	725M33494R	1.03 (26.2)	.30 (7.6)	.57 (14.5)	43						
0.39	725M39494R	1.03 (26.2)	.33 (8.4)	.60 (15.2)	45	0.18	725M18496R	1.03 (26.2)	.33 (8.4)	.60 (15.2)	68
0.43	725M43494R	1.03 (26.2)	.34 (8.6)	.62 (15.7)	46	0.22	725M22496R	1.03 (26.2)	.34 (8.6)	.67 (17.0)	70
0.47	725M47494R	1.03 (26.2)	.36 (9.1)	.63 (16.0)	46	0.25	725M25496R	1.03 (26.2)	.36 (9.1)	.70 (17.8)	72
0.5	725M50494R	1.03 (26.2)	.37 (9.4)	.64 (16.3)	47	0.27	725M27496R	1.03 (26.2)	.38 (9.7)	.71 (18.0)	72
0.56	725M56494R	1.03 (26.2)	.39 (9.9)	.67 (17.0)	48	0.3	725M30496R	1.03 (26.2)	.40 (10.2)	.74 (18.8)	73
0.62	725M62494R	1.03 (26.2)	.41 (10.4)	.69 (17.5)	48	0.33	725M33496R	1.03 (26.2)	.42 (10.7)	.76 (19.3)	74
0.68	725M68494R	1.03 (26.2)	.41 (10.4)	.75(19.1)	48	0.39	725M39496R	1.03 (26.2)	.46 (11.7)	.80 (20.3)	75
0.75	725M75494R	1.03 (26.2)	.43 (10.9)	.77 (19.6)	49	0.43	725M43496R	1.03 (26.2)	.48 (12.2)	.82 (20.8)	75
0.82	725M82494R	1.03 (26.2)	.45 (11.4)	.79 (20.1)	49	0.47	725M47496R	1.03 (26.2)	.51 (13.0)	.85 (21.6)	76
0.9	725M90494R	1.03 (26.2)	.47 (11.9)	.81 (20.6)	50	0.5	725M50496R	1.03 (26.2)	.52 (13.2)	.87 (22.1)	76
1.0	725M10594L	1.23 (31.2)	.44 (11.2)	.78 (19.8)	38	0.56	725M56496L	1.23 (31.2)	.48 (12.2)	.82 (20.8)	58
1.2	725M12594L	1.23 (31.2)	.48 (12.2)	.82 (20.8)	39	0.62	725M62496L	1.23 (31.2)	.51 (13.0)	.85 (21.6)	58
1.5	725M15594L	1.23 (31.2)	.54 (13.7)	.89 (22.6)	39	0.68	725M68496L	1.23 (31.2)	.54 (13.7)	.88 (22.4)	59
						0.75	725M75496L	1.23 (31.2)	.57 (14.5)	.91 (23.1)	59

* 60 Hz., RMS

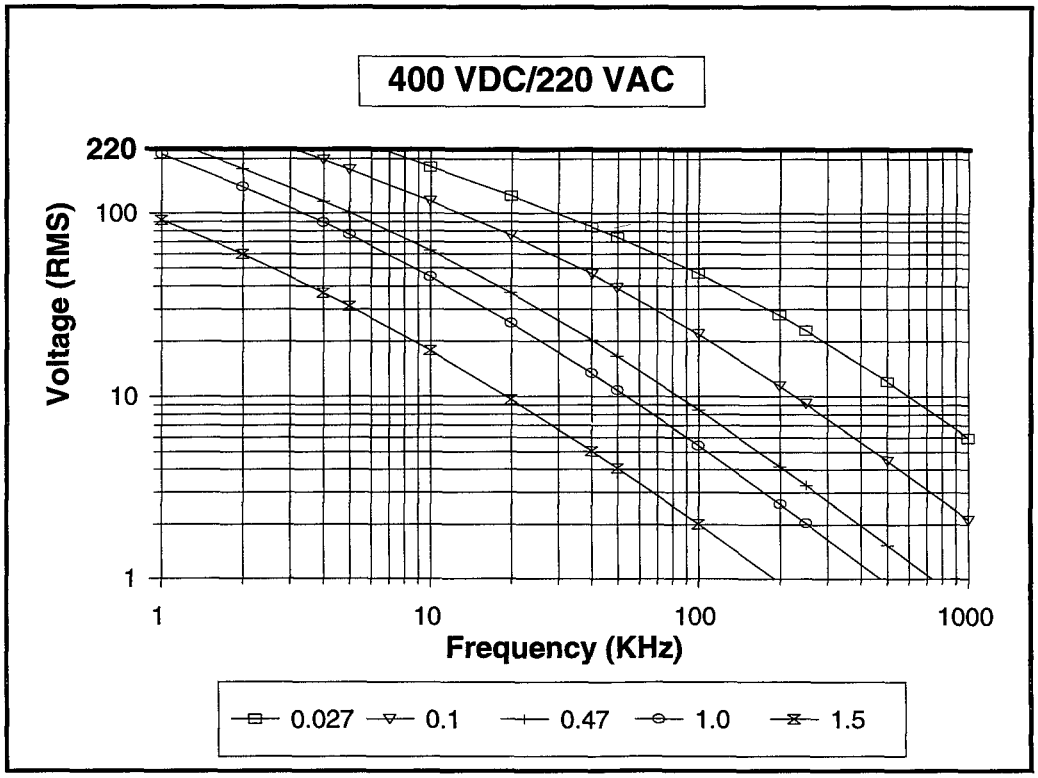
[1] To complete part number for specific tolerance, terminal style and lead length please refer to Ordering/Part Number Information page

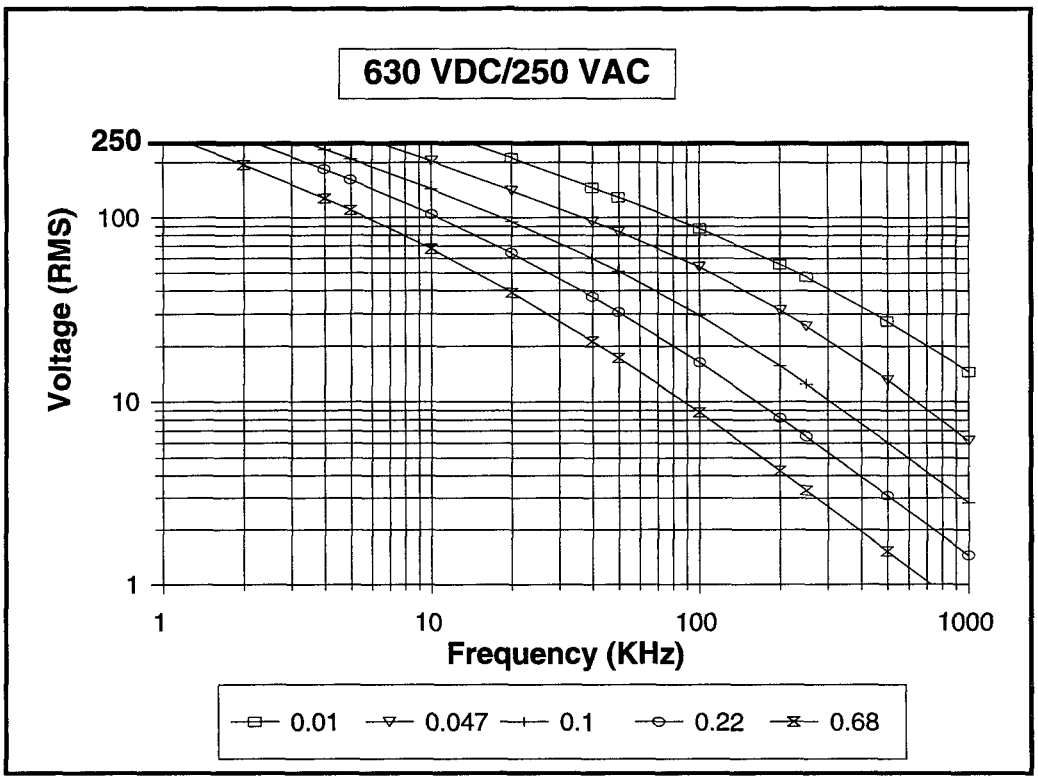
RMS Voltage vs. Frequency @ +85°C, in still air





RMS Voltage vs. Frequency @ +85°C, in still air





General Specifications

The Type 725M Orange Drop® is designed and manufactured for operation in a wide range of demanding environments and applications. Type 725M capacitors are wound from the most reliable metallized polypropylene film available and are protected by a rugged conformal coating of orange epoxy. They may be operated up to +105°C with proper derating.

The 725M series is an ideal choice for a variety of commercial and industrial electronic applications, from power supplies and amplifiers, to inverters and lighting ballasts. The 725M series is constructed of the highest quality polypropylene film with a vacuum deposited metal electrode. Metallized film offers specific clearing/self-healing characteristics that remove a fault or short in the dielectric film by vaporizing the metal electrode surrounding the defect and isolating the area.

Operating Temperature Range:
The standard operating temperature range for polypropylene film is -55°C to +85°C. The 725M may be operated at full voltage within this temperature range.

The 725M may be operated up to +105°C provided the DC working voltage is reduced to 50% of the +85°C rating (full rating).

For more specific details regarding operation above +85°C please contact our application engineering department.

The maximum operating temperature for the 725M series is +105°C.

Dielectric Withstanding Voltage:
Units shall withstand a DC potential of 150% of rated voltage applied between terminals for not more than 2 minutes.

AC Voltage Applications:
The A-C component of the 725M's voltage rating has been specified to assure that corona will not be encountered when the capacitor is operated within the noted specifications. We encourage you to contact us if you have any concerns about operating voltage, temperature limits, etc.

Lead Bend Test:
After 3 consecutive 180° bends. No damage.

DC Voltage Life Test:
500 hours at +85°C at 125% of rated voltage. After test; capacitance shall not have changed by more than ±5% of initial value, insulation resistance shall not have decreased by more than 50% of initial requirement and dissipation factor shall not have increased to more than 0.1%. In addition, there should be no open or short circuits, and no sign of visible damage.

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 50% of initial requirement, and dissipation factor shall not have changed by more than 0.03%. Measurements made at 1 KHz.

Additional Notes:
While it is not possible to list every detail of testing that we perform or every combination of capacitance value, tolerance, etc. that is available, we strongly encourage you to please contact us with your specific requirements. Thank you.

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