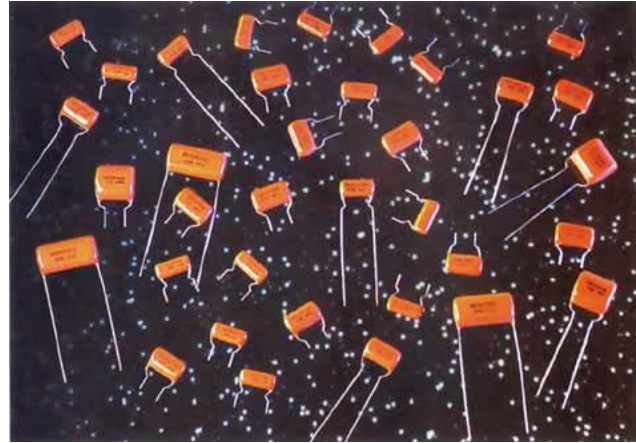


# Type 425M, Orange Drop<sup>®</sup>, Metallized Polyester Film/Foil Capacitors

## Type 425M Orange Drop<sup>®</sup> Metallized Polyester Film Capacitors

### Features

- Radial-lead
- Pressed profile
- Non-inductively wound
- Compact size
- Self-healing properties



### Specifications

#### Capacitance Range:

012 to 12.0  $\mu\text{F}$

#### Capacitance Tolerance:

$\pm 5\%$ ,  $\pm 10\%$

#### Voltage Ratings:

100 to 630 Volts DC

#### Operating Temperature Range:

$-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  (at full voltage)

#### Voltage Derating:

At  $+105^{\circ}\text{C}$ , 70% of  $+85^{\circ}\text{C}$  rating.

At  $+125^{\circ}\text{C}$ , 50% of  $+85^{\circ}\text{C}$  rating

#### Pulse Rise Time (dV/dt):

See standard ratings table dV/dt rating is in Volts/ $\mu\text{sec}$ .

#### Insulation Resistance:

At  $+25^{\circ}\text{C}$ : 10,000  $\text{M}\Omega$  for  $C \leq 1.0 \mu\text{F}$

10,000  $\text{M}\Omega$ - $\mu\text{F}$  for  $C > 1.0 \mu\text{F}$

At  $+85^{\circ}\text{C}$  1,000  $\text{M}\Omega$  for  $C \leq 1.0 \mu\text{F}$

1,000  $\text{M}\Omega$ - $\mu\text{F}$  for  $C > 1.0 \mu\text{F}$

#### Dissipation Factor:

1.0% Maximum @ 1 KHz,  $+25^{\circ}\text{C}$

#### Encapsulation:

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

#### Lead Wire:

Tinned copper-clad steel,

.032 (0.8) diameter, #20 AWG.

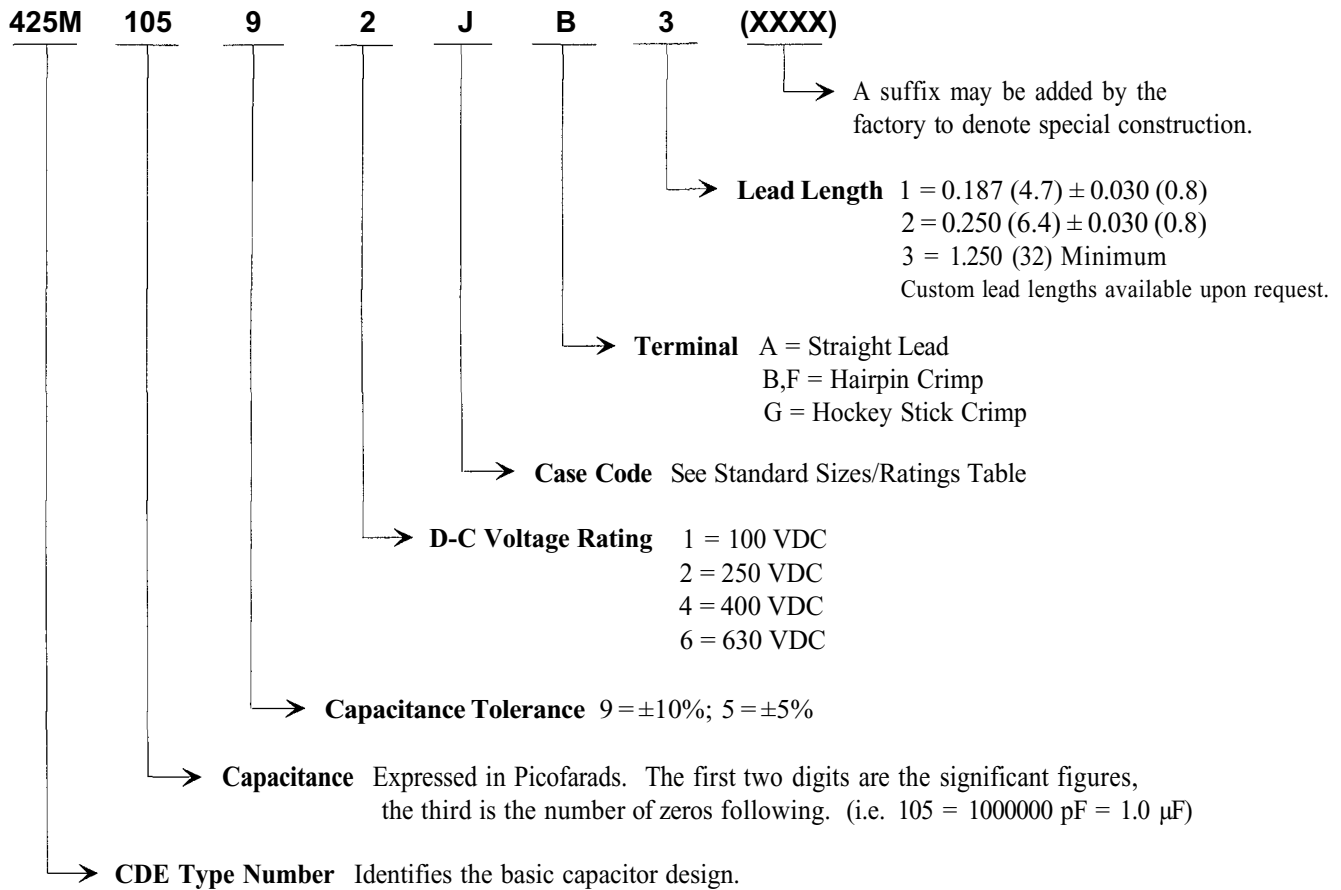
#### Dielectric/Construction:

Metallized Polyester film, single section design Non-inductively wound.

Dimensions in inches, metric (mm) in parenthesis.

# Type 425M, Orange Drop<sup>®</sup>, Metallized Polyester Film/Foil Capacitors

## Ordering/Part Number Information



## Standard Marking Format

### Sample Marking on unit

CDE425M250V  
105K 9910

### Description

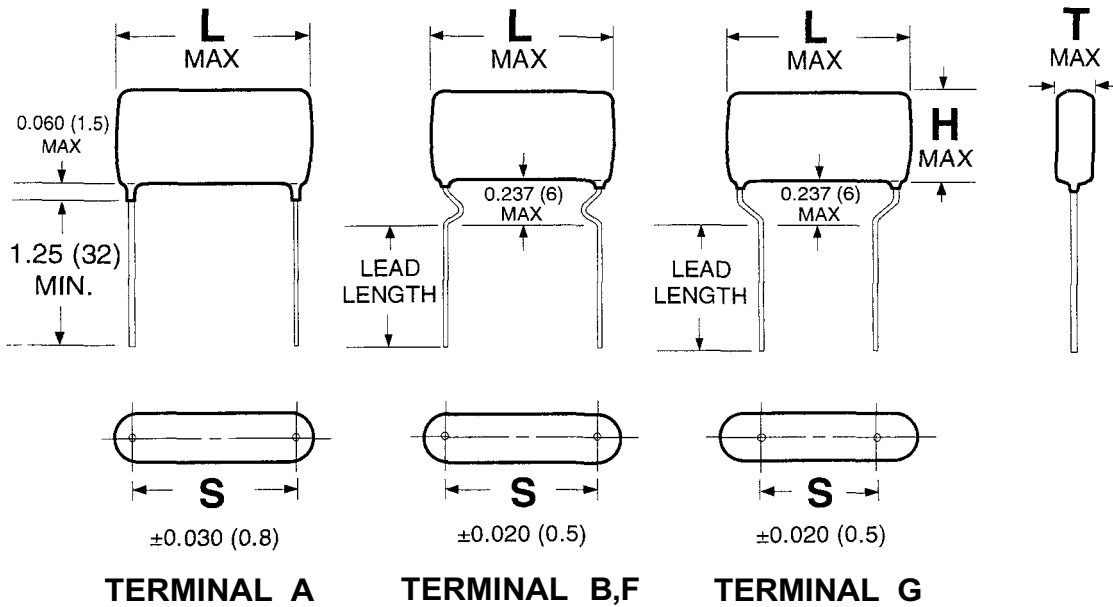
CDE - CDE Electronics identification  
 425M - Type number  
 250V - DC Voltage rating, Volts  
 105K - Capacitance and tolerance code  
 9910 - Weekly date code  
 (i.e. 10th week of 1999)

### Tolerance codes per EIA Standards

J ±5%  
 K ±10%

# Type 425M, Orange Drop<sup>®</sup>, Metallized Polyester Film/Foil Capacitors

## Standard Lead Styles



## 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 425M, Orange Drop<sup>®</sup>, Metallized Polyester Film/Foil Capacitors

## Type 425M Standard Sizes/Ratings

Value ( $\mu$ F)	Part Number <sup>1</sup>	L MAX	T MAX	H WAX	dV/dt Volts/ $\mu$ sec	Value ( $\mu$ F)	Part Number <sup>1</sup>	L MAX	T MAX	H MAX	dV/dt Volts/ $\mu$ sec
<b>100 VDC</b>						<b>250 VDC</b>					
0.33	425M33491N	.52 (13.2)	.24 (6.1)	.38 (9.7)	38	0.12	425M12492N	.52 (13.2)	.23 (5.8)	.37 (9.4)	59
0.39	425M39491N	.52 (13.2)	.24 (6.1)	.42 (10.7)	46	0.15	425M15492N	.52 (13.2)	.24 (6.1)	.41 (10.4)	77
0.43	425M43491N	.52 (13.2)	.24 (6.1)	.45 (11.4)	50	0.18	425M18492N	.52 (13.2)	.24 (6.1)	.45 (11.4)	89
0.47	425M47491N	.52 (13.2)	.25 (6.4)	.46 (11.7)	54	0.22	425M22492N	.52 (13.2)	.26 (6.6)	.47 (11.9)	100
0.5	425M50491N	.52 (13.2)	.26 (6.6)	.46 (11.7)	56	0.25	425M25492N	.52 (13.2)	.28 (7.1)	.49 (12.4)	107
0.56	425M56491N	.52 (13.2)	.27 (6.9)	.48 (12.2)	60	0.27	425M27492N	.52 (13.2)	.29 (7.4)	.50 (12.7)	110
0.62	425M62491N	.52 (13.2)	.28 (7.1)	.49 (12.4)	63	0.3	425M30492N	.52 (13.2)	.30 (7.6)	.51 (13.0)	114
0.68	425M68491N	.52 (13.2)	.29 (7.4)	.50 (12.7)	65	0.33	425M33492N	.52 (13.2)	.32 (8.1)	.52 (13.2)	118
0.75	425M75491N	.52 (13.2)	.31 (7.9)	.52 (13.2)	68	0.39	425M39492J	.73 (18.5)	.23 (5.8)	.50 (12.7)	47
0.82	425M82491N	.52 (13.2)	.30 (7.6)	.57 (14.5)	70	0.43	425M43492J	.73 (18.5)	.24 (6.1)	.51 (13.0)	50
0.9	425M90491N	.52 (13.2)	.31 (7.9)	.58 (14.7)	72	0.47	425M47492J	.73 (18.5)	.25 (6.4)	.52 (13.2)	52
1.0	425M10591N	.52 (13.2)	.33 (8.4)	.60 (15.2)	74	0.5	425M50492J	.73 (18.5)	.26 (6.6)	.53 (13.5)	53
1.2	425M12591J	.73 (18.5)	.26 (6.6)	.53 (13.5)	31	0.56	425M56492J	.73 (18.5)	.27 (6.9)	.54 (13.7)	56
1.5	425M15591J	.73 (18.5)	.29 (7.4)	.56 (14.2)	34	0.62	425M62492J	.73 (18.5)	.29 (7.4)	.56 (14.2)	58
1.8	425M18591J	.73 (18.5)	.31 (7.9)	.58 (14.7)	36	0.68	425M68492J	.73 (18.5)	.30 (7.6)	.57 (14.5)	59
2.0	425M20591J	.73 (18.5)	.33 (8.4)	.60 (15.2)	37	0.75	425M75492J	.73 (18.5)	.31 (7.9)	.58 (14.7)	61
2.2	425M22591J	.73 (18.5)	.34 (8.6)	.62 (15.7)	38	0.82	425M82492J	.73 (18.5)	.33 (8.4)	.60 (15.2)	62
2.5	425M25591J	.73 (18.5)	.37 (9.4)	.64 (16.3)	39	0.9	425M90492J	.73 (18.5)	.34 (8.6)	.61 (15.5)	63
2.7	425M27591J	.73 (18.5)	.38 (9.7)	.65 (16.5)	39	1.0	425M10592J	.73 (18.5)	.36 (9.1)	.63 (16.0)	65
3.0	425M30591J	.73 (18.5)	.40 (10.2)	.67 (17.0)	40	1.2	425M12592J	.73 (18.5)	.39 (9.9)	.67 (17.0)	67
3.3	425M33591J	.73 (18.5)	.42 (10.7)	.69 (17.5)	41	1.5	425M15592J	.73 (18.5)	.42 (10.7)	.75 (19.1)	68
3.6	425M36591R	1.03 (26.2)	.34 (8.6)	.61 (15.5)	22	1.8	425M18592R	1.03 (26.2)	.35 (8.9)	.69 (17.5)	39
3.9	425M39591R	1.03 (26.2)	.33 (8.4)	.67 (17.0)	23	2.0	425M20592R	1.03 (26.2)	.37 (9.4)	.71 (18.0)	39
4.3	425M43591R	1.03 (26.2)	.35 (8.9)	.68 (17.3)	23	2.2	425M22592R	1.03 (26.2)	.39 (9.9)	.72 (18.3)	40
4.7	425M47591R	1.03 (26.2)	.36 (9.1)	.70 (17.8)	23	2.5	425M25592R	1.03 (26.2)	.41 (10.4)	.75 (19.1)	41
5.0	425M50591R	1.03 (26.2)	.37 (9.4)	.71 (18.0)	24	2.7	425M27592R	1.03 (26.2)	.43 (10.9)	.77 (19.6)	41
5.6	425M56591R	1.03 (26.2)	.40 (10.2)	.73 (18.5)	24	3.0	425M30592R	1.03 (26.2)	.45 (11.4)	.79 (20.1)	41
6.0	425M60591R	1.03 (26.2)	.41 (10.4)	.75 (19.1)	24	3.3	425M33592R	1.03 (26.2)	.48 (12.2)	.82 (20.8)	42
6.2	425M62591R	1.03 (26.2)	.42 (10.7)	.76 (19.3)	24	3.6	425M36592R	1.03 (26.2)	.50 (12.7)	.84 (21.3)	42
6.8	425M68591R	1.03 (26.2)	.44 (11.2)	.78 (19.8)	25	3.9	425M39592R	1.03 (26.2)	.52 (13.2)	.86 (21.8)	42
7.0	425M70591R	1.03 (26.2)	.45 (11.4)	.78 (19.8)	25	4.3	425M43592R	1.03 (26.2)	.55 (14.0)	.89 (22.6)	43
7.5	425M75591R	1.03 (26.2)	.46 (11.7)	.80 (20.3)	25	4.7	425M47592R	1.03 (26.2)	.55 (14.0)	.96 (24.4)	43
8.0	425M80591R	1.03 (26.2)	.48 (12.2)	.82 (20.8)	25	5.0	425M50592L	1.23 (31.2)	.50 (12.7)	.90 (22.9)	33
8.2	425M82591R	1.03 (26.2)	.48 (12.2)	.82 (20.8)	25	5.6	425M56592L	1.23 (31.2)	.53 (13.5)	.94 (23.9)	34
10.0	425M10691R	1.03 (26.2)	.54 (13.7)	.88 (22.4)	26	6.0	425M60592L	1.23 (31.2)	.55 (14.0)	.96 (24.4)	34
11.0	425M11691R	1.03 (26.2)	.57 (14.5)	.91 (23.1)	26	6.2	425M62592L	1.23 (31.2)	.56 (14.2)	.97 (24.6)	34
12.0	425M12691R	1.03 (26.2)	.59 (15.0)	.93 (23.6)	26						

<sup>1</sup>

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

# Type 425M, Orange Drop<sup>®</sup>, Metallized Polyester Film/Foil Capacitors

## Type 425M Standard Sizes/Ratings

Value ( $\mu$ F)	Part Number <sup>1</sup>	L MAX	T MAX	H MAX	dV/dt Volts/ $\mu$ sec	Value ( $\mu$ F)	Part Number <sup>1</sup>	L MAX	T MAX	H MAX	dV/dt Volts/ $\mu$ sec
<b>400 VDC</b>						<b>630 VDC</b>					
0.047	425M47394N	.52 (13.2)	.23 (5.8)	.37 (9.4)	112	0.012	425M12396N	.52 (13.2)	.23 (5.8)	.35 (8.9)	160
0.05	425M50394N	.52 (13.2)	.23 (5.8)	.38 (9.7)	122	0.015	425M15396N	.52 (13.2)	.25 (6.4)	.37 (9.4)	233
0.056	425M56394N	.52 (13.2)	.22 (5.6)	.43 (10.9)	137	0.018	425M18396N	.52 (13.2)	.24 (6.1)	.44 (11.2)	277
0.062	425M62394N	.52 (13.2)	.23 (5.8)	.44 (11.2)	149	0.022	425M22396N	.52 (13.2)	.26 (6.6)	.46 (11.7)	321
0.068	425M68394N	.52 (13.2)	.24 (6.1)	.45 (11.4)	160	0.025	425M25396N	.52 (13.2)	.27 (6.9)	.48 (12.2)	345
0.07	425M70394N	.52 (13.2)	.24 (6.1)	.45 (11.4)	163	0.027	425M27396N	.52 (13.2)	.28 (7.1)	.49 (12.4)	358
0.075	425M75394N	.52 (13.2)	.25 (6.4)	.46 (11.7)	170	0.03	425M30396N	.52 (13.2)	.29 (7.4)	.50 (12.7)	375
0.082	425M82394N	.52 (13.2)	.26 (6.6)	.47 (11.9)	178	0.033	425M33396N	.52 (13.2)	.31 (7.9)	.51 (13.0)	388
0.1	425M10494N	.52 (13.2)	.28 (7.1)	.49 (12.4)	195	0.039	425M39396N	.52 (13.2)	.31 (7.9)	.58 (14.7)	408
						0.043	425M43396N	.52 (13.2)	.32 (8.1)	.59 (15.0)	419
0.12	425M12494J	.73 (18.5)	.22 (5.6)	.42 (10.7)	59	0.047	425M47396N	.52 (13.2)	.34 (8.6)	.61 (15.5)	428
0.15	425M15494J	.73 (18.5)	.22 (5.6)	.49 (12.4)	72	0.05	425M50396N	.52 (13.2)	.35 (8.9)	.62 (15.7)	434
0.18	425M18494J	.73 (18.5)	.24 (6.1)	.51 (13.0)	80						
0.22	425M22494J	.73 (18.5)	.26 (6.6)	.53 (13.5)	87	0.056	425M56396J	.73 (18.5)	.26 (6.6)	.46 (11.7)	124
0.25	425M25494J	.73 (18.5)	.28 (7.1)	.55 (14.0)	91	0.062	425M62396J	.73 (18.5)	.27 (6.9)	.47 (11.9)	132
0.27	425M27494J	.73 (18.5)	.29 (7.4)	.56 (14.2)	93	0.068	425M68396J	.73 (18.5)	.28 (7.1)	.48 (12.2)	138
						0.07	425M70396J	.73 (18.5)	.28 (7.1)	.49 (12.4)	140
0.3	425M30494J	.73 (18.5)	.30 (7.6)	.57 (14.5)	96	0.075	425M75396J	.73 (18.5)	.29 (7.4)	.50 (12.7)	144
0.33	425M33494J	.73 (18.5)	.30 (7.6)	.63 (16.0)	98	0.082	425M82396J	.73 (18.5)	.30 (7.6)	.51 (13.0)	149
0.39	425M39494J	.73 (18.5)	.32 (8.1)	.66 (16.8)	102	0.1	425M10496J	.73 (18.5)	.31 (7.9)	.58 (14.7)	159
0.43	425M43494J	.73 (18.5)	.34 (8.6)	.68 (17.3)	104	0.12	425M12496J	.73 (18.5)	.34 (8.6)	.61 (15.5)	166
0.47	425M47494J	.73 (18.5)	.35 (8.9)	.69 (17.5)	105	0.15	425M15496J	.73 (18.5)	.35 (8.9)	.69 (17.5)	174
0.5	425M50494J	.73 (18.5)	.37 (9.4)	.70 (17.8)	106	0.18	425M18496J	.73 (18.5)	.39 (9.9)	.72 (18.3)	179
						0.22	425M22496J	.73 (18.5)	.43 (10.9)	.77 (19.6)	183
0.56	425M56494R	1.03 (26.2)	.29 (7.4)	.63 (16.0)	56	0.25	425M25496J	.73 (18.5)	.46 (11.7)	.80 (20.3)	186
0.62	425M62494R	1.03 (26.2)	.31 (7.9)	.64 (16.3)	57						
0.68	425M68494R	1.03 (26.2)	.32 (8.1)	.66 (16.8)	58	0.27	425M27496R	1.03 (26.2)	.35 (8.9)	.69 (17.5)	94
0.75	425M75494R	1.03 (26.2)	.34 (8.6)	.67 (17.0)	59	0.3	425M30496R	1.03 (26.2)	.37 (9.4)	.71 (18.0)	96
						0.33	425M33496R	1.03 (26.2)	.39 (9.9)	.72 (18.3)	98
0.82	425M82494R	1.03 (26.2)	.35 (8.9)	.69 (17.5)	60	0.39	425M39496R	1.03 (26.2)	.42 (10.7)	.76 (19.3)	100
0.9	425M90494R	1.03 (26.2)	.37 (9.4)	.71 (18.0)	61	0.43	425M43496R	1.03 (26.2)	.44 (11.2)	.78 (19.8)	101
1.0	425M10594R	1.03 (26.2)	.39 (9.9)	.73 (18.5)	62	0.47	425M47496R	1.03 (26.2)	.46 (11.7)	.80 (20.3)	102
1.2	425M12594R	1.03 (26.2)	.43 (10.9)	.77 (19.6)	63	0.5	425M50496R	1.03 (26.2)	.48 (12.2)	.82 (20.8)	102
						0.56	425M56496R	1.03 (26.2)	.51 (13.0)	.85 (21.6)	103
1.5	425M15594L	1.23 (31.2)	.42 (10.7)	.76 (19.3)	49	0.62	425M62496R	1.03 (26.2)	.54 (13.7)	.88 (22.4)	104
1.8	425M18594L	1.23 (31.2)	.47 (11.9)	.81 (20.6)	50	0.68	425M68496R	1.03 (26.2)	.56 (14.2)	.91 (23.1)	105
2.0	425M20594L	1.23 (31.2)	.47 (11.9)	.87 (22.1)	50	0.75	425M75496R	1.03 (26.2)	.59 (15.0)	.94 (23.9)	105
2.2	425M22594L	1.23 (31.2)	.49 (12.4)	.90 (22.9)	51						
2.5	425M25594L	1.23 (31.2)	.53 (13.5)	.93 (23.6)	51	0.82	425M82496L	1.23 (31.2)	.54 (13.7)	.88 (22.4)	80
2.7	425M27594L	1.23 (31.2)	.55 (14.0)	.96 (24.4)	51	0.9	425M90496L	1.23 (31.2)	.57 (14.5)	.91 (23.1)	81
3.0	425M30594L	1.23 (31.2)	.58 (14.7)	.99 (25.1)	52	1.0	425M10596L	1.23 (31.2)	.60 (15.2)	.94 (23.9)	81

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

## General Specifications

The Type 425M Orange Drop<sup>®</sup> is designed and manufactured for operation in a wide range of demanding environments and applications. Type 425M capacitors are wound from the most reliable metallized polyester film available and are protected by a rugged conformal coating of orange epoxy. They may be operated up to +125°C with proper derating.

The 425M series is an ideal choice for a variety of commercial and industrial electronic applications, from power supplies and instrumentation to amplifiers and lighting ballasts. The 425M series is constructed of the highest quality polyester 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 polyester film is -55°C to +85°C. The 425M may be operated at full voltage within this temperature range.

The 425M may be operated up to +105°C provided the DC working voltage is reduced to 70% of the +85°C rating (full rating), and up to +125°C with a 50% reduction from 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 425M series is +125°C.

### Dielectric Withstanding Voltage:

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

### Lead Bend Test:

After 3 consecutive 180° bends. No damage.

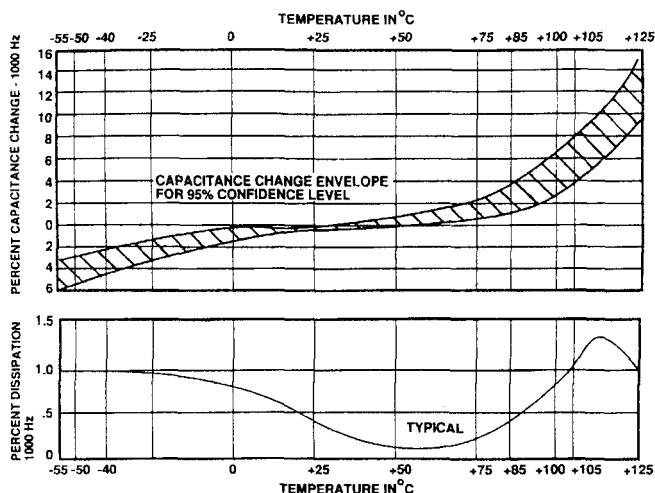
### Humidity Testing:

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 5,000 MΩ-μF, but need not exceed 5000 MΩ.

### 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 value and dissipation factor shall not have increased to more than 1.0%. In addition, there should be no open or short circuits, and no sign of visible damage.

### Typical Temperature Characteristics:



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