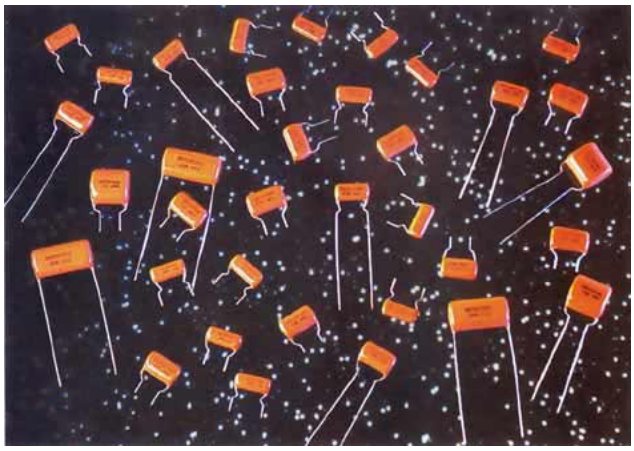
Type 425M Orange Drop® Metallized Polyester Film Capacitors



Features

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

Specifications

Capacitance Range:
012 to 12.0 µF

Capacitance Tolerance:
±5%, ±10%

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

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

Voltage Derating:
At +105°C, 70% of +85°C rating.
At +125°C, 50% of +85°C rating

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

Insulation Resistance:

At +25°C:	10,000 MΩ for C ≤ 1.0 µF
	10,000 MΩ-µF for C > 1.0 µF
At +85°C	1,000 MΩ for C ≤ 1.0 µF
	1,000MΩ-µF for C > 1 0 µF

Dissipation Factor:
1 0% Maximum @ 1 KHz, +25°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.

Ordering/Part Number Information

425M 105 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 = 100 VDC; 2 = 250 VDC; 4 = 400 VDC; 6 = 630 VDC
- **9** — **Capacitance Tolerance** 9 = ±10%; 5 = ±5%
- **105** — **Capacitance** Expressed in Picofarads. The first two digits are the significant figures, the third is the number of zeros following. (i.e. 105 = 1000000 pF = 1.0 µF)
- **425M** — **CDE Type Number** Identifies the basic capacitor design.

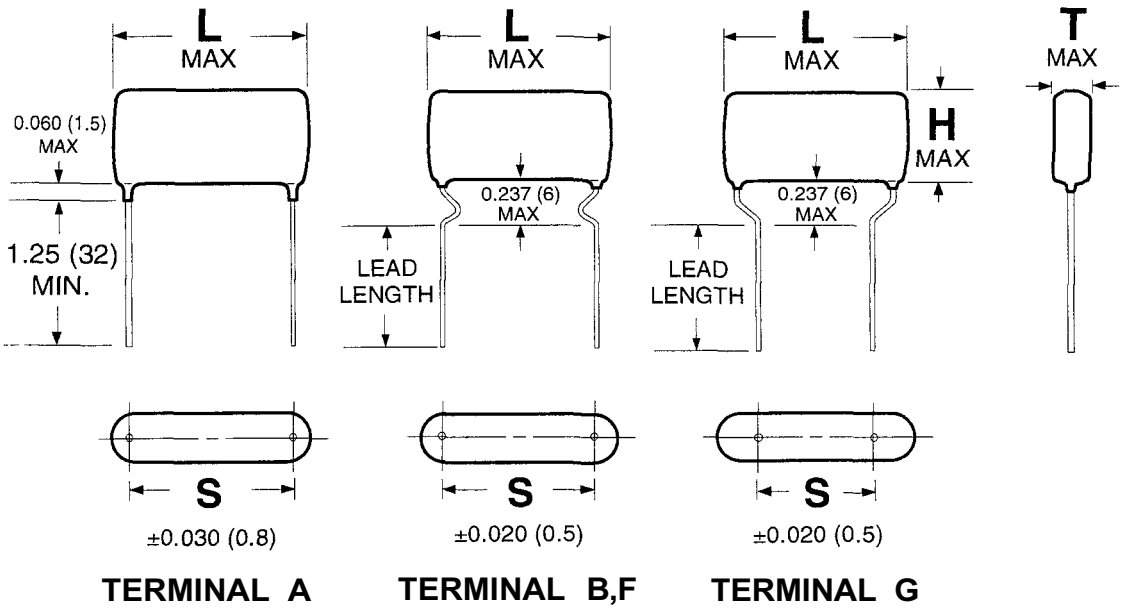
Standard Marking Format

Sample Marking on unit	Description
CDE425M250V	CDE - CDE Electronics identification
105K 9910	425M - Type number
	250V - D-C 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%

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 425M Standard Sizes/Ratings

Value (µF)	Part Number[1]	L MAX	T MAX	H WAX	dV/dt Volts/µsec	Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	dV/dt Volts/µsec
100 VDC / 63 VAC*						**250 VDC / 160 VAC***					
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						
0.82	425M82491N	.52 (13.2)	.30 (7.6)	.57 (14.5)	70	0.39	425M39492J	.73 (18.5)	.23 (5.8)	.50 (12.7)	47
0.9	425M90491N	.52 (13.2)	.31 (7.9)	.58 (14.7)	72	0.43	425M43492J	.73 (18.5)	.24 (6.1)	.51 (13.0)	50
1.0	425M10591N	.52 (13.2)	.33 (8.4)	.60 (15.2)	74	0.47	425M47492J	.73 (18.5)	.25 (6.4)	.52 (13.2)	52
						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						
8.2	425M82591R	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
10.0	425M10691R	1.03 (26.2)	.54 (13.7)	.88 (22.4)	26	5.6	425M56592L	1.23 (31.2)	.53 (13.5)	.94 (23.9)	34
11.0	425M11691R	1.03 (26.2)	.57 (14.5)	.91 (23.1)	26	6.0	425M60592L	1.23 (31.2)	.55 (14.0)	.96 (24.4)	34
12.0	425M12691R	1.03 (26.2)	.59 (15.0)	.93 (23.6)	26	6.2	425M62592L	1.23 (31.2)	.56 (14.2)	.97 (24.6)	34

* 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 425M Standard Sizes/Ratings

Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	dV/dt Volts/µsec
400 VDC / 200 VAC*					
0.047	425M47394N	.52 (13.2)	.23 (5.8)	.37 (9.4)	112
0.05	425M50394N	.52 (13.2)	.23 (5.8)	.38 (9.7)	122
0.056	425M56394N	.52 (13.2)	.22 (5.6)	.43 (10.9)	137
0.062	425M62394N	.52 (13.2)	.23 (5.8)	.44 (11.2)	149
0.068	425M68394N	.52 (13.2)	.24 (6.1)	.45 (11.4)	160
0.07	425M70394N	.52 (13.2)	.24 (6.1)	.45 (11.4)	163
0.075	425M75394N	.52 (13.2)	.25 (6.4)	.46 (11.7)	170
0.082	425M82394N	.52 (13.2)	.26 (6.6)	.47 (11.9)	178
0.1	425M10494N	.52 (13.2)	.28 (7.1)	.49 (12.4)	195
0.12	425M12494J	.73 (18.5)	.22 (5.6)	.42 (10.7)	59
0.15	425M15494J	.73 (18.5)	.22 (5.6)	.49 (12.4)	72
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
0.25	425M25494J	.73 (18.5)	.28 (7.1)	.55 (14.0)	91
0.27	425M27494J	.73 (18.5)	.29 (7.4)	.56 (14.2)	93
0.3	425M30494J	.73 (18.5)	.30 (7.6)	.57 (14.5)	96
0.33	425M33494J	.73 (18.5)	.30 (7.6)	.63 (16.0)	98
0.39	425M39494J	.73 (18.5)	.32 (8.1)	.66 (16.8)	102
0.43	425M43494J	.73 (18.5)	.34 (8.6)	.68 (17.3)	104
0.47	425M47494J	.73 (18.5)	.35 (8.9)	.69 (17.5)	105
0.5	425M50494J	.73 (18.5)	.37 (9.4)	.70 (17.8)	106
0.56	425M56494R	1.03 (26.2)	.29 (7.4)	.63 (16.0)	56
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
0.75	425M75494R	1.03 (26.2)	.34 (8.6)	.67 (17.0)	59
0.82	425M82494R	1.03 (26.2)	.35 (8.9)	.69 (17.5)	60
0.9	425M90494R	1.03 (26.2)	.37 (9.4)	.71 (18.0)	61
1.0	425M10594R	1.03 (26.2)	.39 (9.9)	.73 (18.5)	62
1.2	425M12594R	1.03 (26.2)	.43 (10.9)	.77 (19.6)	63
1.5	425M15594L	1.23 (31.2)	.42 (10.7)	.76 (19.3)	49
1.8	425M18594L	1.23 (31.2)	.47 (11.9)	.81 (20.6)	50
2.0	425M20594L	1.23 (31.2)	.47 (11.9)	.87 (22.1)	50
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
2.7	425M27594L	1.23 (31.2)	.55 (14.0)	.96 (24.4)	51
3.0	425M30594L	1.23 (31.2)	.58 (14.7)	.99 (25.1)	52

Value (µF)	Part Number[1]	L MAX	T MAX	H MAX	dV/dt Volts/µsec
630 VDC / 250 VAC*					
0.012	425M12396N	.52 (13.2)	.23 (5.8)	.35 (8.9)	160
0.015	425M15396N	.52 (13.2)	.25 (6.4)	.37 (9.4)	233
0.018	425M18396N	.52 (13.2)	.24 (6.1)	.44 (11.2)	277
0.022	425M22396N	.52 (13.2)	.26 (6.6)	.46 (11.7)	321
0.025	425M25396N	.52 (13.2)	.27 (6.9)	.48 (12.2)	345
0.027	425M27396N	.52 (13.2)	.28 (7.1)	.49 (12.4)	358
0.03	425M30396N	.52 (13.2)	.29 (7.4)	.50 (12.7)	375
0.033	425M33396N	.52 (13.2)	.31 (7.9)	.51 (13.0)	388
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
0.047	425M47396N	.52 (13.2)	.34 (8.6)	.61 (15.5)	428
0.05	425M50396N	.52 (13.2)	.35 (8.9)	.62 (15.7)	434
0.056	425M56396J	.73 (18.5)	.26 (6.6)	.46 (11.7)	124
0.062	425M62396J	.73 (18.5)	.27 (6.9)	.47 (11.9)	132
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
0.075	425M75396J	.73 (18.5)	.29 (7.4)	.50 (12.7)	144
0.082	425M82396J	.73 (18.5)	.30 (7.6)	.51 (13.0)	149
0.1	425M10496J	.73 (18.5)	.31 (7.9)	.58 (14.7)	159
0.12	425M12496J	.73 (18.5)	.34 (8.6)	.61 (15.5)	166
0.15	425M15496J	.73 (18.5)	.35 (8.9)	.69 (17.5)	174
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
0.25	425M25496J	.73 (18.5)	.46 (11.7)	.80 (20.3)	186
0.27	425M27496R	1.03 (26.2)	.35 (8.9)	.69 (17.5)	94
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
0.39	425M39496R	1.03 (26.2)	.42 (10.7)	.76 (19.3)	100
0.43	425M43496R	1.03 (26.2)	.44 (11.2)	.78 (19.8)	101
0.47	425M47496R	1.03 (26.2)	.46 (11.7)	.80 (20.3)	102
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
0.62	425M62496R	1.03 (26.2)	.54 (13.7)	.88 (22.4)	104
0.68	425M68496R	1.03 (26.2)	.56 (14.2)	.91 (23.1)	105
0.75	425M75496R	1.03 (26.2)	.59 (15.0)	.94 (23.9)	105
0.82	425M82496L	1.23 (31.2)	.54 (13.7)	.88 (22.4)	80
0.9	425M90496L	1.23 (31.2)	.57 (14.5)	.91 (23.1)	81
1.0	425M10596L	1.23 (31.2)	.60 (15.2)	.94 (23.9)	81

* 60 Hz., RMS

[1] 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® 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.

AC Voltage Applications:

The A-C component of the 425M'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.

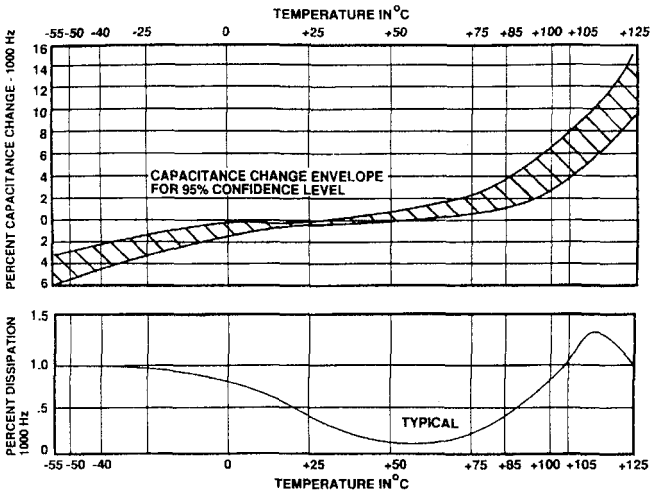
Humidity Testing:

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:



Notice and Disclaimer: All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Cornell Dubilier:
425M47552RA3