

+125°C Miniature Radial Lead, Aluminum Capacitors

Features-

- Suitable For Tantalum Replacement Applications
- Very Stable, Long Life
- High Temperature Rating of 125°C

General Specifications-

Operating Temperature:

-40 to +125°C

Voltage Range:

6.3 – 63 VDC

Capacitance Range:

1μF to 330μF

Capacitance Tolerance:

±20% (Std.)

Case Size Range:

6.0 X 11.0mm – 10.0 X 20.0mm

Termination:

2 Radial Leads.

Life Validation Test: 1,000hrs @ +125°C Or 2,000hrs @ +105°C

Δ CAP ≤ 15% (6.3 – 10VDC),

≤ 10% (16 – 63)

From initial measurement.

Δ ESR ≤ 1.25X Initial specified limit.

Δ DCL ≤ Initial specified limit.

Shelf Test: 250hrs @ +105°C

Δ CAP ≤ 10% From initial measurement.

Δ ESR ≤ 1.25X Initial specified limit.

Δ DCL ≤ 6X Initial specified limit.

DC Leakage Current: (After 2 min. charge)

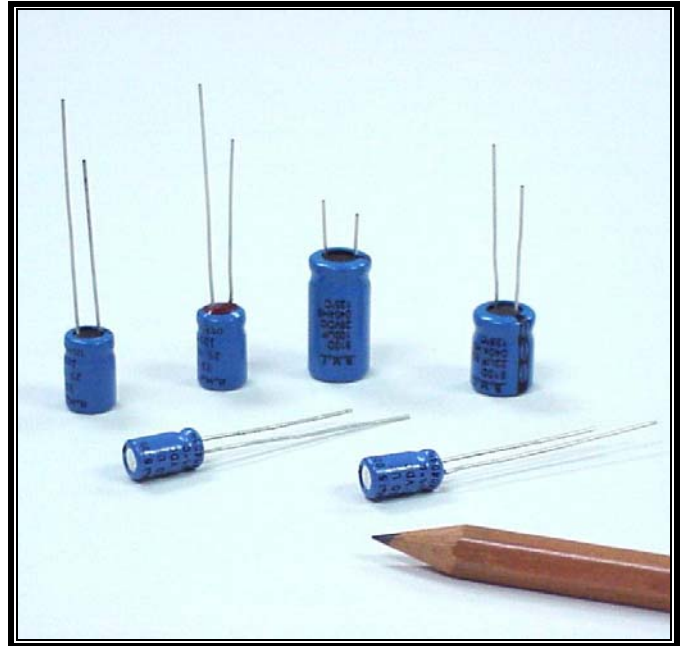
I = 0.01CV

Where:

I is in μA

C is in μF

V is in Volts



Ripple Current Multipliers:

Temperature:

Ambient Temp.	Multiplier
+105°C	0.40
+95°C	0.80
+85°C	1.00
+75°C	1.20
≤ +65°C	1.30

Frequency (Hz):

VDC	50-60	100-120	300-400	1k-100k
0 – 25	0.85	1.00	1.04	1.08
26 – 63	0.80	1.00	1.30	1.40

Low Temperature Performance:

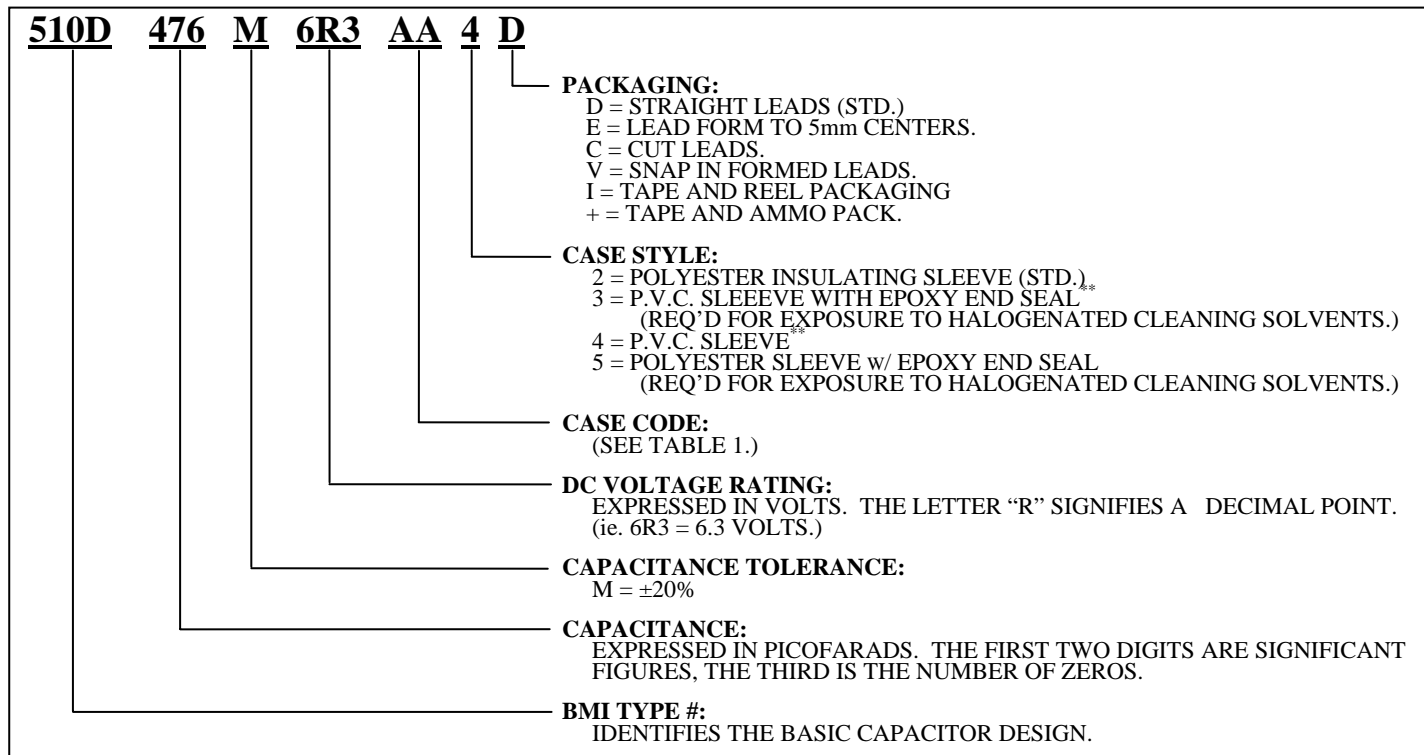
Capacitance Ratio $C^{-40°C}/C^{+25°C}$ min. @ 120Hz

Rated Voltage (VDC)	Capacitance Remaining
6.3 – 10	75%
16 – 25	80%
35 – 63	85%

Z Ratio $Z^{-40°C}/Z^{+25°C}$ max. @ 120Hz

Rated Voltage (VDC)	Multiplier
6.3	6X
10	4X
16 - 63	3X

PART NUMBER BREAK-DOWN:



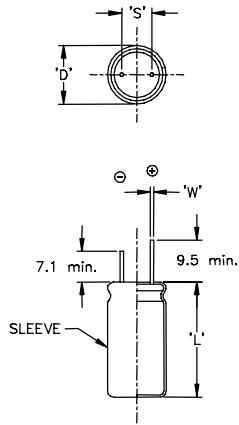
**Sleeving rated to 105°C.

Table 1. Case Dimensions mm(in.)

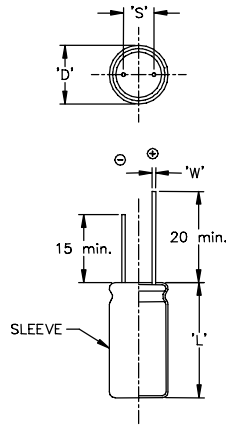
CASE CODE	NOMINAL		STYLES 2 & 4		STYLES 3 & 5 (w/EPOXY)		LEAD SPACING	WIRE GAUGE
	'D'	'L'	'D' MAX.	'L' MAX.	'D' MAX.	'L' MAX.	S ± 0.38	'W'
AA	6.0 (0.236)	11.0 (0.433)	6.5 (0.256)	12.0 (0.472)	6.5 (0.256)	13.0 (0.512)	2.5 (0.098)	No. 22 AWG (0.025)
BB	8.0 (0.315)	12.0 (0.472)	8.5 (0.335)	13.0 (0.512)	8.5 (0.335)	14.0 (0.551)	3.5 (0.138)	No. 22 AWG (0.025)
CC	10.0 (0.394)	13.0 (0.512)	10.5 (0.413)	14.3 (0.563)	10.5 (0.413)	16.0 (0.630)	5.0 (0.197)	No. 22 AWG (0.025)
CD	10.0 (0.394)	16.0 (0.630)	10.5 (0.413)	17.0 (0.669)	10.5 (0.413)	18.8 (0.740)	5.0 (0.197)	No. 22 AWG (0.025)
CG	10.0 (0.394)	20.0 (0.787)	10.5 (0.413)	21.5 (0.846)	10.5 (0.413)	23.0 (0.906)	5.0 (0.197)	No. 22 AWG (0.025)

Radial-Leaded Capacitor Dimensions

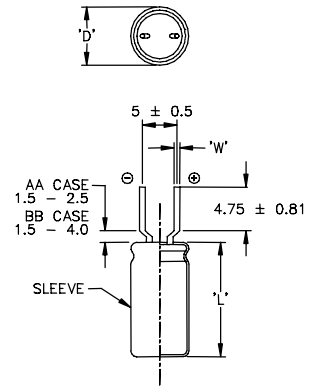
TERMINAL CODE C



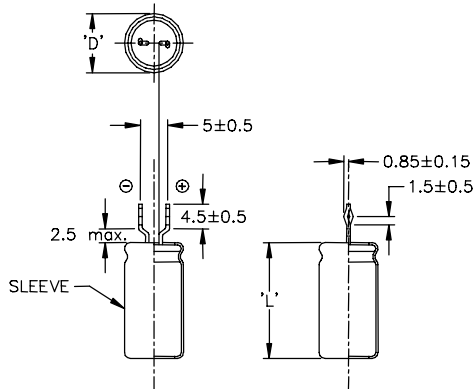
TERMINAL CODE D



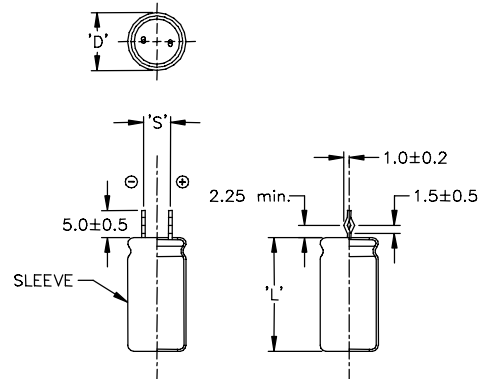
TERMINAL CODE E



TERMINAL CODE V 6 - 8 mm Dia.



TERMINAL CODE V 10 - 18 mm Dia.



Dimensions in mm

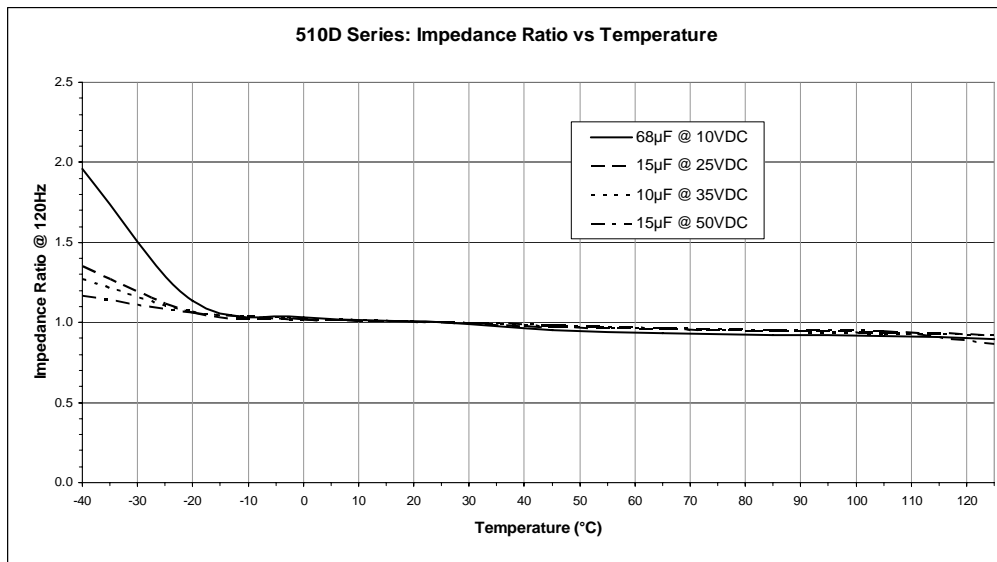
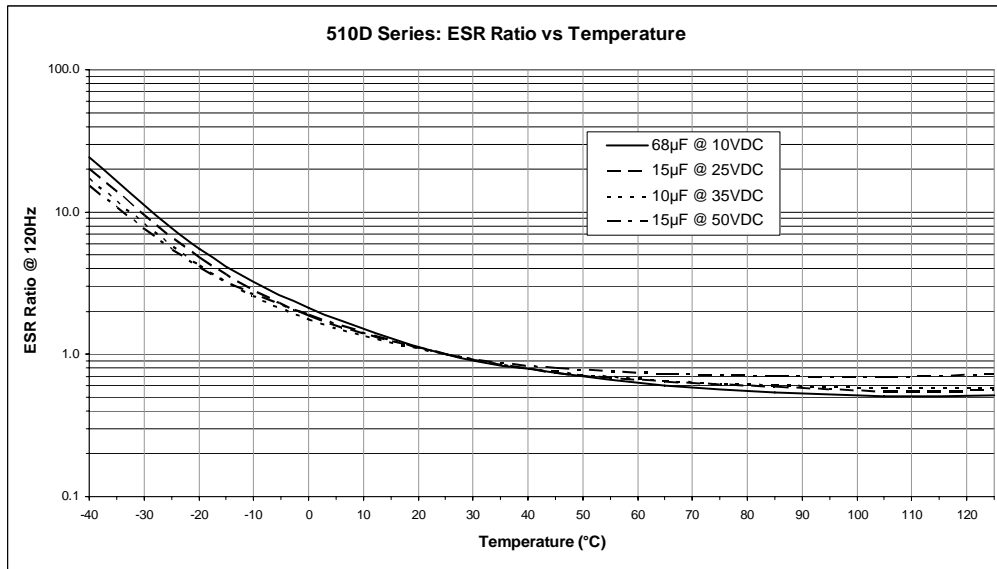
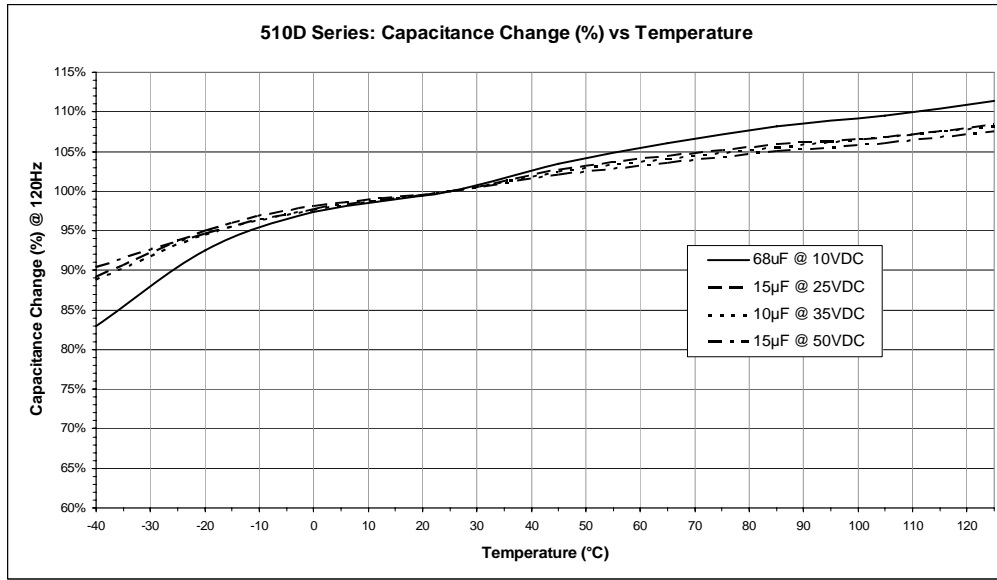
⊕ Positive Lead ⊖ Negative Lead (NC) No Charge Potential

STANDARD RATINGS FOR TYPE 510D

Rated Capacitance (μF)	Catalog Number	Nominal Case Size D x L (mm)	Max. ESR	Max. Z	Max. Z	Max. Ripple Current	Max. Ripple Current
			+25°C 120Hz (Ω)	+25°C 20kHz (Ω)	+25°C 100kHz (Ω)	+85°C 120Hz (A_{rms})	+85°C 20-100kHz (A_{rms})
6.3 VOLTS DC WORKING; 9 VOLTS DC SURGE							
47	510D476M6R3AA4D	6.0 x 11.0	5.079	2.60	2.30	0.100	0.135
100	510D107M6R3BB4D	8.0 x 12.0	2.387	1.25	1.15	0.180	0.245
150	510D157M6R3CC4D	10.0 x 13.0	1.592	1.00	0.90	0.260	0.325
220	510D227M6R3CD4D	10.0 x 16.0	1.085	0.60	0.55	0.330	0.440
330	510D337M6R3CG4D	10.0 x 20.0	0.723	0.50	0.46	0.450	0.540
10 VOLTS DC WORKING; 15 VOLTS DC SURGE							
33	510D336M010AA4D	6.0 x 11.0	4.823	2.60	2.30	0.100	0.135
68	510D686M010BB4D	8.0 x 12.0	2.341	1.30	1.20	0.180	0.240
100	510D107M010CC4D	10.0 x 13.0	1.592	1.05	0.95	0.260	0.325
150	510D157M010CD4D	10.0 x 16.0	1.061	0.62	0.57	0.330	0.440
220	510D227M010CG4D	10.0 x 20.0	0.723	0.52	0.48	0.450	0.530
16 VOLTS DC WORKING; 20 VOLTS DC SURGE							
22	510D226M016AA4D	6.0 x 11.0	6.029	2.70	2.50	0.090	0.135
47	510D476M016BB4D	8.0 x 12.0	2.822	1.35	1.25	0.162	0.235
68	510D686M016CC4D	10.0 x 13.0	1.950	1.10	1.00	0.241	0.320
100	510D107M016CD4D	10.0 x 16.0	1.326	0.74	0.60	0.300	0.400
150	510D157M016CG4D	10.0 x 20.0	0.884	0.53	0.50	0.400	0.530
25 VOLTS DC WORKING; 35 VOLTS DC SURGE							
15	510D156M025AA4D	6.0 x 11.0	8.842	2.80	2.55	0.075	0.130
33	510D336M015BB4D	8.0 x 12.0	4.019	1.40	1.28	0.136	0.230
68	510D686M025CD4D	10.0 x 16.0	1.950	0.84	0.68	0.240	0.370
100	510D107M025CG4D	10.0 x 20.0	1.326	0.57	0.57	0.330	0.510
35 VOLTS DC WORKING; 44 VOLTS DC SURGE							
10	510D106M035AA4D	6.0 x 11.0	13.26	3.10	2.60	0.060	0.125
22	510D226M035BB4D	8.0 x 12.0	6.029	1.55	1.30	0.110	0.220
33	510D336M035CC4D	10.0 x 13.0	4.019	1.30	1.08	0.162	0.285
47	510D476M035CC4D	10.0 x 13.0	2.822	1.25	1.05	0.195	0.295
50 VOLTS DC WORKING; 63 VOLTS DC SURGE							
1.0	510D105M050AA4D	6.0 x 11.0	79.58	13.50	6.00	0.025	0.060
1.5	510D155M050AA4D	6.0 x 11.0	53.05	9.40	4.40	0.030	0.072
2.2	510D225M050AA4D	6.0 x 11.0	36.17	6.60	3.60	0.037	0.086
3.3	510D335M050AA4D	6.0 x 11.0	24.11	5.50	3.00	0.045	0.094
4.7	510D475M050AA4D	6.0 x 11.0	16.93	4.50	2.80	0.054	0.104
6.8	510D685M050AA4D	6.0 x 11.0	11.70	3.50	2.70	0.065	0.118
10.0	510D106M050BB4D	8.0 x 12.0	7.958	2.25	1.40	0.098	0.182
15.0	510D156M050BB4D	8.0 x 12.0	5.305	1.75	1.35	0.120	0.206
22.0	510D226M050CC4D	10.0 x 13.0	3.617	1.40	1.10	0.176	0.280
63 VOLTS DC WORKING; 80 VOLTS DC SURGE							
1.0	510D105M063AA4D	6.0 x 11.0	79.58	13.20	5.90	0.025	0.060
1.5	510D155M063AA4D	6.0 x 11.0	53.05	9.20	4.30	0.030	0.073
2.2	510D225M063AA4D	6.0 x 11.0	36.17	6.50	3.50	0.037	0.087
3.3	510D335M063AA4D	6.0 x 11.0	24.11	5.40	2.95	0.045	0.095
4.7	510D475M063AA4D	6.0 x 11.0	16.93	4.40	2.75	0.054	0.105
6.8	510D685M063BB4D	8.0 x 12.0	11.70	3.00	1.45	0.080	0.158
10.0	510D106M063BB4D	8.0 x 12.0	7.958	2.25	1.40	0.098	0.182
15.0	510D156M063CC4D	10.0 x 13.0	5.305	1.50	1.15	0.141	0.265

510D TYPICAL PERFORMANCE PROFILES

TEMPERATURE CHARACTERISTICS



510D TYPICAL PERFORMANCE PROFILES

FREQUENCY CHARACTERISTICS

