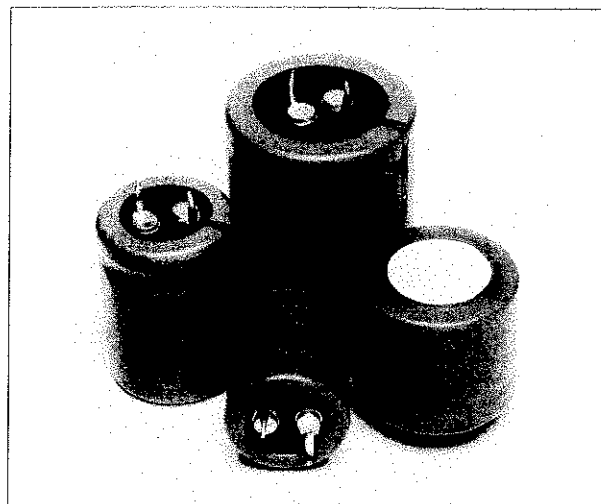




+ 105°C Snap Mount Aluminum Capacitors

Features

- Operating Temperature to + 105°C
- High Ripple Current Capability
- Low ESR



1.65-10

General Specifications

Operating Temperature:
- 40°C to + 105°C.

Voltage Range: 6.3 - 400 VDC.

Capacitance Range: 47 μ F - 180,000 μ F.

Capacitance Tolerance: $\pm 20\%$.

Case Size Range: 22 x 25mm - 35 x 80mm.

Termination: See outline drawings.

Life Validation Test: 2000 hrs @ +105°C:

- Δ CAP $\leq 15\%$ from initial measurement.
- Δ ESR $\leq 1.5x$ initial specified limit.
- Δ DCL $\leq$ initial specified limit.

Shelf Test: 500 hrs @ + 85°C:

- Δ CAP $\leq 15\%$ from initial measurement.
- Δ ESR $\leq 1.3x$ initial specified limit.
- Δ DCL $\leq 2x$ initial specified limit.

DC Leakage Current: after 5 min. charge.

$$I = K\sqrt{CV}$$

$$K = 4.0 @ +25^\circ\text{C}$$

I in μ a, C in μ F, V in Volts

Ripple Current Multipliers:

TEMPERATURE

Ambient Temp. Multipliers	+ 55°C	+ 65°C	+ 75°C	+ 85°C	+ 95°C	+ 105°C
	1.5	1.34	1.2	1.0	.77	.45

FREQUENCY Hz

Rated VDC	50-60	300-1000	Above 1000
0-49	0.85	1.10	1.15
50-199	0.83	1.15	1.20
200-400	0.80	1.30	1.40

SEE PAGE 2.

Note: Type 81D Original Ratings are recommended for replacement applications only. For new designs, see Type 81DA.

Catalog Numbering System

81D 822 M 6R3 HA 2 D

LEAD CODE. D = 2 PIN SNAP IN (Standard).
SEE TERMINAL CONFIGURATION, PAGE 112
FOR LEAD CODE OPTIONS.

CASE STYLE. 2 = PVC INSULATING SLEEVE (Standard).
5 = PVC SLEEVE WITH RESIN END SEAL.
(Required for exposure to halogenated cleaning solvents).

CASE CODE. SEE DIMENSIONS, BELOW.

DC VOLTAGE RATING. EXPRESSED IN VOLTS. AN 'R' INDICATES A DECIMAL POINT,
FOR EXAMPLE, 6R3 = 6.3 VOLTS.

CAPACITANCE TOLERANCE. M = $\pm 20\%$.

CAPACITANCE. EXPRESSED IN MICROFARADS. THE FIRST TWO DIGITS ARE SIGNIFICANT FIGURES, THE
THIRD IS THE NUMBER OF ZEROS.

TYPE NUMBER. IDENTIFIES THE BASIC CAPACITOR DESIGN.

DIMENSIONS

CASE CODE	MILLIMETERS		INCHES		STYLE 2 TYPICAL WEIGHT (GRAMS)
	DIAMETER D $\pm 1/-0$	LENGTH L ± 2	DIAMETER D, $\pm 0.04/-0$	LENGTH L, ± 0.08	
HA	22	25	0.87	1.00	16
HB	22	30	0.87	1.18	19
HD	22	40	0.87	1.57	24
JA	25	25	1.00	1.00	20
JB	25	30	1.00	1.18	24
JC	25	35	1.00	1.38	27
JD	25	40	1.00	1.57	31
JE	25	50	1.00	2.00	38
KA	30	25	1.18	1.00	30
KB	30	30	1.18	1.18	35
KC	30	35	1.18	1.38	39
KD	30	40	1.18	1.57	44
KE	30	50	1.18	2.00	53
MB	35	30	1.38	1.18	48
MC	35	35	1.38	1.38	54
MD	35	40	1.38	1.57	61
ME	35	50	1.38	2.00	74
MF	35	63	1.38	2.50	91
MG	35	80	1.38	3.18	113



STANDARD RATINGS

μ F	Catalog Number	Nominal Case Size		Max. ESR		Max. Ripple Current	
		Millimeters		@ + 25°C (m Ω)		@ + 85°C (A)	
		D	x L	120Hz	20k-40k	120Hz	20k-40k
6.3 VOLTS DC WORKING; 8 VOLTS DC SURGE							
8200	81D822M6R3HA2D	22	x 25	87.0	68.0	3.15	3.57
18000	81D183M6R3HB2D	22	x 30	79.0	61.0	3.49	4.01
27000	81D273M6R3HD2D	22	x 40	52.0	40.0	4.85	5.52
12000	81D123M6R3JA2D	25	x 25	73.0	58.0	3.71	4.20
27000	81D273M6R3JB2D	25	x 30	65.0	50.0	4.21	4.78
33000	81D333M6R3JC2D	25	x 35	52.0	41.0	4.98	6.28
39000	81D393M6R3JD2D	25	x 40	42.0	33.0	6.07	6.85
56000	81D563M6R3JE2D	25	x 50	33.0	26.0	7.19	7.95
18000	81D183M6R3KA2D	30	x 25	66.0	54.0	4.39	4.91
39000	81D393M6R3KB2D	30	x 30	51.0	41.0	5.31	5.94
47000	81D473M6R3KC2D	30	x 35	41.0	33.0	6.25	7.04
68000	81D683M6R3KD2D	30	x 40	33.0	27.0	7.38	8.16
82000	81D823M6R3KE2D	30	x 50	27.0	21.0	8.89	10.00
56000	81D563M6R3MB2D	35	x 30	31.0	25.0	7.60	8.45
68000	81D683M6R3MC2D	35	x 35	26.0	20.0	8.66	9.81
82000	81D823M6R3MD2D	35	x 40	21.0	16.3	10.20	11.50
100000	81D104M6R3ME2D	35	x 50	17.0	13.5	12.20	13.60
150000	81D154M6R3MF2D	35	x 63	13.3	10.6	15.30	16.10
180000	81D184M6R3MG2D	35	x 80	11.0	9.0	18.10	20.10
10 VOLTS DC WORKING; 12 VOLTS DC SURGE							
6800	81D682M010HA2D	22	x 25	92.0	70.0	3.07	3.52
12000	81D123M010HB2D	22	x 30	85.0	64.0	3.40	3.91
22000	81D223M010HD2D	22	x 40	54.0	41.0	4.78	5.52
10000	81D103M010JA2D	25	x 25	74.0	57.0	3.71	4.26
18000	81D183M010JB2D	25	x 30	67.0	51.0	4.16	4.78
22000	81D223M010JC2D	25	x 35	55.0	42.0	4.84	5.05
27000	81D273M010JD2D	25	x 40	44.4	34.0	5.87	6.70
39000	81D393M010JE2D	25	x 50	34.6	26.0	7.04	8.18
15000	81D153M010KA2D	30	x 25	67.0	54.0	4.39	4.91
27000	81D273M010KB2D	30	x 30	53.0	41.0	5.24	5.94
39000	81D393M010KC2D	30	x 35	43.0	34.0	6.14	6.89
47000	81D473M010KD2D	30	x 40	34.7	27.0	7.22	8.16
56000	81D563M010KE2D	30	x 50	27.7	21.0	8.89	10.00
39000	81D393M010MB2D	35	x 30	33.0	26.0	7.36	8.28
47000	81D473M010MC2D	35	x 35	27.0	21.0	8.56	9.71
56000	81D563M010MD2D	35	x 40	22.0	17.0	9.89	11.20
82000	81D823M010ME2D	35	x 50	17.1	13.4	12.10	13.70
100000	81D104M010MF2D	35	x 63	14.1	11.0	14.90	16.90
150000	81D154M010MG2D	35	x 80	11.1	9.0	18.10	19.90
16 VOLTS DC WORKING; 20 VOLTS DC SURGE							
5600	81D562M016HA2D	22	x 25	96.0	71.0	2.12	2.46
10000	81D103M016HB2D	22	x 30	86.0	63.0	3.37	3.96
15000	81D153M016HD2D	22	x 40	57.7	42.0	4.59	5.42
8200	81D822M016JA2D	25	x 25	77.0	58.0	3.64	4.21
12000	81D123M016JB2D	25	x 30	71.0	53.0	4.03	4.65
15000	81D153M016JC2D	25	x 35	58.0	43.0	4.72	5.47

STANDARD RATINGS

μ F	Catalog Number	Nominal Case Size		Max. ESR		Max. Ripple Current	
		Millimeters		@ +25°C (m Ω)		@ +85°C (A)	
		D	x L	120Hz	20k-40k	120Hz	20k-40k
16 VOLTS DC WORKING; 20 VOLTS DC SURGE (Cont.)							
22000	81D223M016JD2D	25	x 40	44.8	33.0	5.87	6.85
27000	81D273M016JE2D	25	x 50	35.0	26.0	6.92	8.04
12000	81D123M016KA2D	30	x 25	67.7	54.0	4.34	4.91
22000	81D223M016KB2D	30	x 30	53.7	41.0	5.24	5.94
27000	81D273M016KC2D	30	x 35	43.8	33.0	6.04	7.05
33000	81D333M016KD2D	30	x 40	35.3	27.0	7.07	8.16
39000	81D393M016KE2D	30	x 50	28.0	21.8	8.66	9.74
27000	81D273M016MB2D	35	x 30	35.0	26.0	7.14	8.28
33000	81D333M016MC2D	35	x 35	28.0	21.0	8.42	9.71
47000	81D473M016MD2D	35	x 40	23.0	17.0	9.70	11.20
56000	81D563M016ME2D	35	x 50	17.5	13.3	12.00	13.80
68000	81D683M016MF2D	35	x 63	15.2	11.0	14.40	16.90
100000	81D104M016MG2D	35	x 80	11.2	9.0	18.00	19.90
25 VOLTS DC WORKING; 30 VOLTS DC SURGE							
3300	81D332M025HA2D	22	x 25	110.0	76.0	2.81	3.38
4700	81D472M025HB2D	22	x 30	85.0	58.0	3.40	4.11
8200	81D822M025HD2D	22	x 40	54.0	37.0	4.78	5.74
4700	81D472M025JA2D	25	x 25	86.0	60.0	3.44	4.15
6800	81D682M025JB2D	25	x 30	67.0	47.0	4.16	4.93
8200	81D822M025JC2D	25	x 35	54.0	38.0	4.91	5.78
10000	81D103M025JD2D	25	x 40	43.4	31.0	5.97	7.02
15000	81D153M025JE2D	25	x 50	33.9	24.0	7.04	8.44
6800	81D682M025KA2D	30	x 25	71.0	54.0	4.25	4.91
10000	81D103M025KB2D	30	x 30	54.0	41.0	5.24	5.94
12000	81D123M025KC2D	30	x 35	44.0	33.0	6.04	7.05
15000	81D153M025KD2D	30	x 40	36.4	27.0	7.07	8.16
22000	81D223M025KE2D	30	x 50	28.1	22.0	8.66	9.74
12000	81D123M025MB2D	35	x 30	35.0	25.0	7.14	8.45
18000	81D183M025MC2D	35	x 35	28.0	20.0	8.13	9.96
22000	81D223M025MD2D	35	x 40	23.0	17.0	9.41	11.20
27000	81D273M025ME2D	35	x 50	17.5	13.0	12.00	13.90
33000	81D333M025MF2D	35	x 63	14.0	10.0	15.00	17.70
47000	81D473M025MG2D	35	x 80	11.2	9.0	18.00	19.90
35 VOLTS DC WORKING; 40 VOLTS DC SURGE							
2200	81D222M035HA2D	22	x 25	121.0	76.0	2.67	3.38
3300	81D332M035HB2D	22	x 30	92.0	57.0	3.26	4.16
4700	81D472M035HD2D	22	x 40	59.0	37.0	4.54	5.74
3300	81D332M035JA2D	25	x 25	95.0	62.0	3.28	4.05
4700	81D472M035JB2D	25	x 30	72.0	47.0	3.98	4.93
5600	81D562M035JC2D	25	x 35	58.0	38.0	4.72	5.78
6800	81D682M035JD2D	25	x 40	46.6	30.0	5.77	7.19
10000	81D103M035JE2D	25	x 50	36.3	24.0	6.89	8.44
4700	81D472M035KA2D	30	x 25	75.0	54.0	4.13	4.84
6800	81D682M035KB2D	30	x 30	57.0	41.0	5.10	5.94
8200	81D822M035KC2D	30	x 35	46.6	33.0	5.94	7.05
12000	81D123M035KD2D	30	x 40	37.7	27.0	6.92	8.16
15000	81D153M035KE2D	30	x 50	30.5	22.0	8.44	9.74



STANDARD RATINGS

μ F	Catalog Number	Nominal Case Size Millimeters		Max. ESR @ + 25°C (m Ω)		Max. Ripple Current @ + 85°C (A)	
		D	x L	120Hz	20k-40k	120Hz	20k-40k
35 VOLTS DC WORKING; 40 VOLTS DC SURGE (Cont.)							
10000	81D103M035MB2D	35	x 30	36.0	24.0	7.04	8.63
12000	81D123M035MC2D	35	x 35	29.3	20.0	5.82	9.45
15000	81D153M035MD2D	35	x 40	25.0	16.3	9.29	11.50
18000	81D183M035ME2D	35	x 50	19.0	13.0	11.50	13.90
27000	81D273M035MF2D	35	x 63	15.0	10.0	14.50	17.70
33000	81D333M035MG2D	35	x 80	12.0	9.0	17.30	19.90
50 VOLTS DC WORKING; 63 VOLTS DC SURGE							
1200	81D122M050HA2D	22	x 25	148.0	79.0	2.41	3.29
1800	81D182M050HB2D	22	x 30	108.0	58.0	3.00	4.11
2700	81D272M050HD2D	22	x 40	70.0	38.0	4.18	5.63
1800	81D182M050JA2D	25	x 25	110.0	62.0	3.05	4.05
2200	81D222M050JB2D	25	x 30	85.0	48.0	3.69	4.93
2700	81D272M050JC2D	25	x 35	68.0	38.0	4.34	5.89
3900	81D392M050JD2D	25	x 40	53.6	31.0	5.36	7.02
4700	81D472M050JE2D	25	x 50	42.0	24.0	6.38	8.44
2700	81D272M050KA2D	30	x 25	85.0	54.0	3.87	4.84
3900	81D392M050KB2D	30	x 30	65.0	41.0	4.74	5.94
4700	81D472M050KC2D	30	x 35	53.0	33.0	5.51	7.05
5600	81D562M050KD2D	30	x 40	42.4	27.7	6.43	7.94
6800	81D682M050KE2D	30	x 50	33.0	22.0	8.04	9.74
4700	81D472M050MB2D	35	x 30	43.0	24.0	6.45	8.63
5600	81D562M050MC2D	35	x 35	34.0	20.0	7.64	9.96
6800	81D682M050MD2D	35	x 40	28.0	16.0	8.79	11.61
10000	81D103M050ME2D	35	x 50	22.0	13.0	10.76	13.97
12000	81D123M050MF2D	35	x 63	17.3	10.5	13.48	17.33
18000	81D183M050MG2D	35	x 80	14.0	9.0	16.14	19.98
63 VOLTS DC WORKING; 79 VOLTS DC SURGE							
1000	81D102M063HA2D	22	x 25	151.0	75.0	2.39	3.39
1500	81D152M063HB2D	22	x 30	118.0	59.0	2.87	4.06
2200	81D222M063HD2D	22	x 40	74.0	38.0	4.06	5.63
1500	81D152M063JA2D	25	x 25	121.0	63.0	2.90	4.05
1800	81D182M063JB2D	25	x 30	88.0	46.0	3.61	5.02
2200	81D222M063JC2D	25	x 35	72.0	38.0	4.21	5.78
3300	81D332M063JD2D	25	x 40	57.0	30.0	5.22	7.19
3900	81D392M063JE2D	25	x 50	44.0	24.0	6.16	8.44
2200	81D222M063KA2D	30	x 25	90.0	54.0	3.78	4.85
2700	81D272M063KB2D	30	x 30	73.0	41.0	4.45	5.95
3900	81D392M063KC2D	30	x 35	55.0	33.0	5.44	7.05
4700	81D472M063KD2D	30	x 40	44.0	27.0	6.32	8.16
5600	81D562M063KE2D	30	x 50	37.0	22.0	7.55	9.75
3900	81D392M063MB2D	35	x 30	45.0	24.0	6.26	8.50
4700	81D472M063MC2D	35	x 35	36.0	20.0	7.42	9.96
5600	81D562M063MD2D	35	x 40	32.0	16.0	8.29	11.60
8200	81D822M063ME2D	35	x 50	23.0	13.0	10.52	13.97
10000	81D103M063MF2D	35	x 63	18.4	10.4	13.10	17.42
15000	81D153M063MG2D	35	x 80	14.1	9.0	18.05	19.98

STANDARD RATINGS

μ F	Catalog Number	Nominal Case Size			Max. ESR		Max. Ripple Current	
		Millimeters			@ + 25°C (m Ω)		@ + 85°C (A)	
		D	x	L	120Hz	20k-40k	120Hz	20k-40k
80 VOLTS DC WORKING; 100 VOLTS DC SURGE								
680	81D681M080HA2D	22	x	25	268.0	150.0	1.79	2.39
820	81D821M080HB2D	22	x	30	203.0	114.0	2.19	2.93
1500	81D152M080HD2D	22	x	40	131.0	74.0	3.04	4.06
1000	81D102M080JA2D	25	x	25	200.0	114.0	2.25	2.99
1200	81D122M080JB2D	25	x	30	160.0	91.0	2.69	3.58
1500	81D152M080JC2D	25	x	35	126.0	72.0	3.20	4.26
1800	81D182M080JD2D	25	x	40	99.0	57.0	3.93	5.22
2700	81D272M080JE2D	25	x	50	75.0	44.0	4.73	6.16
1500	81D152M080KA2D	30	x	25	147.0	87.0	2.55	3.84
1800	81D182M080KB2D	30	x	30	109.0	66.0	3.66	4.69
2200	81D222M080KC2D	30	x	35	86.0	52.0	4.35	5.59
2700	81D272M080KD2D	30	x	40	74.0	42.0	4.90	6.55
3900	81D392M080KE2D	30	x	50	54.0	33.0	6.29	8.05
2700	81D272M080MB2D	35	x	30	75.0	44.0	4.88	6.36
3300	81D332M080MC2D	35	x	35	61.0	35.0	5.67	7.50
3900	81D392M080MD2D	35	x	40	48.0	28.0	6.67	8.80
5600	81D562M080ME2D	35	x	50	37.0	22.0	8.29	10.72
6800	81D682M080MF2D	35	x	63	29.0	17.0	10.43	13.60
10000	81D103M080MG2D	35	x	80	23.0	13.5	12.60	16.40
100 VOLTS DC WORKING; 125 VOLTS DC SURGE								
390	81D391M100HA2D	22	x	25	343.0	151.0	1.58	2.39
470	81D471M100HB2D	22	x	30	258.0	114.0	1.94	2.93
820	81D821M100HD2D	22	x	40	161.0	72.0	2.75	4.10
560	81D561M100JA2D	25	x	25	253.0	115.0	2.00	2.97
680	81D681M100JB2D	25	x	30	188.0	86.0	2.48	3.67
820	81D821M100JC2D	25	x	35	150.0	69.0	2.92	4.30
1200	81D122M100JD2D	25	x	40	125.0	57.0	3.49	5.15
1500	81D152M100JE2D	25	x	50	90.0	42.0	4.32	6.38
820	81D821M100KA2D	30	x	25	178.0	86.0	2.68	3.87
1000	81D102M100KB2D	30	x	30	136.0	66.0	3.28	4.69
1500	81D152M100KC2D	30	x	35	106.0	52.0	3.90	5.59
1800	81D182M100KD2D	30	x	40	86.0	42.0	4.55	6.55
2200	81D222M100KE2D	30	x	50	66.0	33.0	5.69	8.05
1500	81D152M100MB2D	35	x	30	98.0	44.0	4.26	6.36
1800	81D182M100MC2D	35	x	35	79.0	36.0	5.00	7.35
2200	81D222M100MD2D	35	x	40	61.0	28.0	5.92	8.80
2700	81D272M100ME2D	35	x	50	46.0	22.0	6.74	10.72
3900	81D392M100MF2D	35	x	63	36.0	17.2	9.35	13.54
4700	81D472M100MG2D	35	x	80	28.0	13.5	11.41	16.40
160 VOLTS DC WORKING; 200 VOLTS DC SURGE								
180	81D181M160HA2D	22	x	25	741.0	392.0	1.14	1.57
220	81D221M160HB2D	22	x	30	551.0	291.0	1.41	1.94
390	81D391M160HD2D	22	x	40	344.0	184.0	1.99	2.72
220	81D221M160JA2D	25	x	25	548.0	296.0	1.44	1.96
330	81D331M160JB2D	25	x	30	411.0	221.0	1.77	2.42
390	81D391M160JC2D	25	x	35	326.0	176.0	2.11	2.86
470	81D471M160JD2D	25	x	40	256.0	139.0	2.59	3.51
680	81D681M160JE2D	25	x	50	194.0	107.0	3.12	4.18

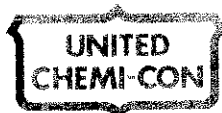


STANDARD RATINGS

μF	Catalog Number	Nominal Case Size	Max. ESR		Max. Ripple Current	
		Millimeters	@ + 25°C (m Ω)	@ + 85°C (A)		
		D x L	120Hz	20k-40k	120Hz	20k-40k
160 VOLTS DC WORKING; 200 VOLTS DC SURGE (Cont.)						
390	81D391M160KA2D	30 x 25	374.0	211.0	1.96	2.61
470	81D471M160KB2D	30 x 30	278.0	157.0	2.43	3.22
680	81D681M160KC2D	30 x 35	222.0	128.0	2.85	3.77
820	81D821M160KD2D	30 x 40	175.0	99.0	3.38	4.47
1000	81D102M160KE2D	30 x 50	136.0	77.0	4.16	5.51
680	81D681M160MB2D	35 x 30	221.0	130.0	3.02	3.94
820	81D821M160MC2D	35 x 35	176.0	104.0	3.56	4.62
1200	81D122M160MD2D	35 x 40	139.0	83.0	4.18	5.42
1500	81D152M160ME2D	35 x 50	107.0	64.0	5.15	6.65
1800	81D182M160MF2D	35 x 63	82.0	50.0	5.72	7.31
2700	81D272M160MG2D	35 x 80	62.0	38.0	8.07	10.3
200 VOLTS DC WORKING; 250 VOLTS DC SURGE						
150	81D151M200HA2D	22 x 25	1012.0	361.0	0.982	1.64
220	81D221M200HB2D	22 x 30	594.0	255.0	1.37	2.09
330	81D331M200HD2D	22 x 40	381.0	165.0	1.91	2.91
220	81D221M200JA2D	25 x 25	625.0	272.0	1.37	2.08
270	81D271M200JB2D	25 x 30	525.0	190.0	1.59	2.62
390	81D391M200JC2D	25 x 35	341.0	151.0	2.08	3.12
470	81D471M200JD2D	25 x 40	272.0	120.0	2.49	3.81
560	81D561M200JE2D	25 x 50	205.0	91.0	3.06	4.58
330	81D331M200KA2D	30 x 25	498.0	192.0	1.71	2.77
470	81D471M200KB2D	30 x 30	294.0	136.0	2.39	3.51
560	81D561M200KC2D	30 x 35	279.0	107.0	2.57	4.18
680	81D681M200KD2D	30 x 40	221.0	87.0	3.02	4.83
1000	81D102M200KE2D	30 x 50	142.0	67.0	4.09	5.95
560	81D561M200MB2D	35 x 30	287.0	116.0	2.67	4.19
820	81D821M200MC2D	35 x 35	189.0	93.0	3.47	4.94
1000	81D102M200MD2D	35 x 40	149.0	74.0	4.07	5.78
1200	81D122M200ME2D	35 x 50	116.0	58.0	5.01	7.07
1800	81D182M200MF2D	35 x 63	89.0	45.0	6.37	8.93
2200	81D222M200MG2D	35 x 80	68.0	36.0	7.88	10.70
250 VOLTS DC WORKING; 300 VOLTS DC SURGE						
120	81D121M250HA2D	22 x 25	1077.0	385.0	0.96	1.61
180	81D181M250HB2D	22 x 30	722.0	261.0	1.24	2.06
220	81D221M250HD2D	22 x 40	558.0	166.0	1.57	2.89
180	81D181M250JA2D	25 x 25	753.0	275.0	1.25	2.05
220	81D221M250JB2D	25 x 30	513.0	189.0	1.61	2.64
270	81D271M250JC2D	25 x 35	494.0	151.0	1.71	3.12
330	81D331M250JD2D	25 x 40	382.0	121.0	2.12	3.81
470	81D471M250JE2D	25 x 50	243.0	93.0	2.81	4.54
270	81D271M250KA2D	30 x 25	500.0	194.0	1.66	2.75
330	81D331M250KB2D	30 x 30	398.0	135.0	2.04	3.52
390	81D391M250KC2D	30 x 35	328.0	109.0	2.37	4.12
560	81D561M250KD2D	30 x 40	283.0	87.0	3.06	4.83
680	81D681M250KE2D	30 x 50	198.0	67.0	3.47	5.99
470	81D471M250MB2D	35 x 30	281.0	117.0	2.71	4.17
560	81D561M250MC2D	35 x 35	271.0	94.0	2.89	4.89

STANDARD RATINGS

μ F	Catalog Number	Nominal Case Size		Max. ESR		Max. Ripple Current	
		Millimeters		@ + 25°C (m Ω)		@ + 85°C (A)	
		D	x L	120Hz	20k-40k	120Hz	20k-40k
250 VOLTS DC WORKING; 300 VOLTS DC SURGE (Cont.)							
680	81D681M250MD2D	35	x 40	209.0	74.0	3.44	5.78
1000	81D102M250ME2D	35	x 50	132.0	58.0	4.69	7.07
1200	81D122M250MF2D	35	x 63	108.0	46.0	5.78	8.77
1500	81D152M250MG2D	35	x 80	93.0	35.0	6.69	10.80
300 VOLTS DC WORKING; 350 VOLTS DC SURGE							
68	81D680M300HA2D	22	x 25	3100.0	1800.0	0.475	0.634
100	81D101M300HB2D	22	x 30	2090.0	1210.0	0.622	0.829
120	81D121M300HD2D	22	x 40	1340.0	780.0	0.878	1.146
100	81D101M300JA2D	25	x 25	2180.0	1270.0	0.634	0.817
150	81D151M300JB2D	25	x 30	1490.0	870.0	0.805	1.378
180	81D181M300JC2D	25	x 35	1160.0	680.0	1.183	1.537
220	81D221M300JD2D	25	x 40	900.0	520.0	1.464	1.927
270	81D271M300JE2D	25	x 50	670.0	390.0	1.781	2.33
150	81D151M300KA2D	30	x 25	1530.0	900.0	0.841	1.098
220	81D221M300KB2D	30	x 30	970.0	570.0	1.122	1.464
270	81D271M300KC2D	30	x 35	780.0	460.0	1.317	1.72
330	81D331M300KD2D	30	x 40	600.0	350.0	1.573	2.061
470	81D471M300KE2D	30	x 50	440.0	260.0	2.000	2.61
270	81D271M300MB2D	35	x 30	750.0	450.0	1.415	1.83
330	81D331M300MC2D	35	x 35	590.0	350.0	1.683	2.196
470	81D471M300MD2D	35	x 40	450.0	270.0	2.013	2.598
560	81D561M300ME2D	35	x 50	340.0	200.0	2.513	3.269
820	81D821M300MF2D	35	x 63	250.0	150.0	3.257	4.209
1000	81D102M300MG2D	35	x 80	190.0	110.0	4.758	5.282
350 VOLTS DC WORKING; 400 VOLTS DC SURGE							
56	81D560M350HA2D	22	x 25	5110.0	2710.0	0.463	0.634
82	81D820M350HB2D	22	x 30	3550.0	1890.0	0.597	0.817
120	81D121M350HD2D	22	x 40	1990.0	1060.0	0.866	1.174
82	81D820M350JA2D	25	x 25	3550.0	1890.0	0.597	0.817
120	81D121M350JB2D	25	x 30	2420.0	1290.0	0.768	1.049
150	81D151M350JC2D	25	x 35	1990.0	1060.0	0.927	1.256
180	81D181M350JD2D	25	x 40	1650.0	880.0	1.134	1.549
220	81D221M350JE2D	25	x 50	1110.0	580.0	1.390	1.891
120	81D121M350KA2D	30	x 25	2420.0	1290.0	0.829	1.134
180	81D181M350KB2D	30	x 30	1650.0	880.0	1.061	1.427
220	81D221M350KC2D	30	x 35	1320.0	710.0	1.268	1.732
270	81D271M350KD2D	30	x 40	910.0	480.0	1.525	2.061
330	81D331M350KE2D	30	x 50	730.0	390.0	1.915	2.586
220	81D221M350MB2D	35	x 30	1110.0	580.0	1.329	1.793
270	81D271M350MC2D	35	x 35	910.0	480.0	1.598	2.159
330	81D331M350MD2D	35	x 40	730.0	390.0	1.939	2.598
470	81D471M350ME2D	35	x 50	510.0	270.0	2.440	3.269
680	81D681M350MF2D	35	x 63	420.0	220.0	3.135	4.209
820	81D821M350MG2D	35	x 80	290.0	150.0	3.904	5.160
385 VOLTS DC WORKING; 415 VOLTS DC SURGE							
47	81D470M385HA2D	22	x 25	3450.0	1800.0	0.463	0.634
68	81D680M385HB2D	22	x 30	2320.0	1210.0	0.597	0.817
120	81D121M385HD2D	22	x 40	1400.0	730.0	0.854	1.183

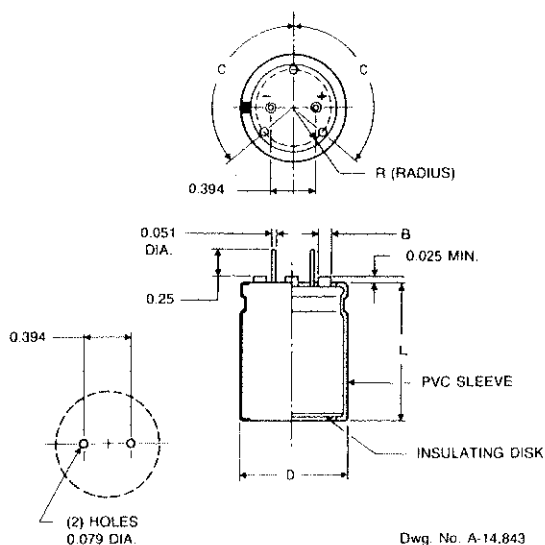


STANDARD RATINGS

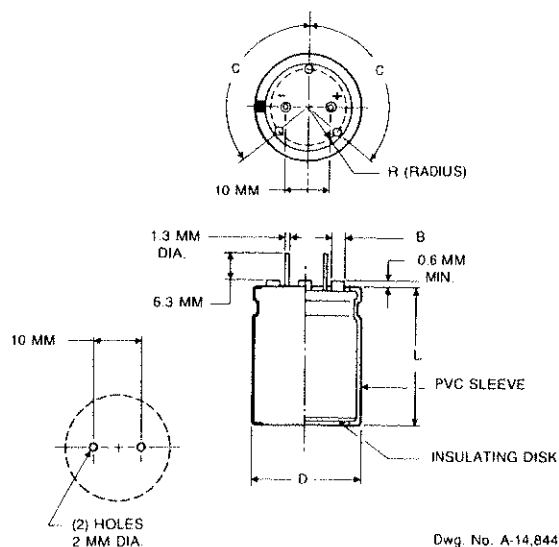
μ F	Catalog Number	Nominal Case Size	Max. ESR		Max. Ripple Current	
		Millimeters	@ + 25°C (m Ω)		@ + 85°C (A)	
		D x L	120Hz	20k-40k	120Hz	20k-40k
385 VOLTS DC WORKING; 415 VOLTS DC SURGE (Cont.)						
68	81D680M385JA2D	25 x 25	2430.0	1280.0	0.597	0.817
100	81D101M385JB2D	25 x 30	1650.0	870.0	0.768	1.049
120	81D121M385JC2D	25 x 35	1340.0	700.0	0.902	1.244
180	81D181M385JD2D	25 x 40	1020.0	540.0	1.122	1.537
220	81D221M385JE2D	25 x 50	780.0	410.0	1.342	1.854
120	81D121M385KA2D	30 x 25	1580.0	830.0	0.829	1.146
150	81D151M385KB2D	30 x 30	1130.0	600.0	1.037	1.427
220	81D221M385KC2D	30 x 35	852.0	450.0	1.268	1.732
270	81D271M385KD2D	30 x 40	670.0	360.0	1.488	2.037
330	81D331M385KE2D	30 x 50	500.0	265.0	1.878	2.586
220	81D221M385MB2D	35 x 30	880.0	460.0	1.305	1.805
270	81D271M385MC2D	35 x 35	660.0	350.0	1.598	2.183
330	81D331M385MD2D	35 x 40	510.0	270.0	1.891	2.598
470	81D471M385ME2D	35 x 50	380.0	200.0	2.379	3.269
560	81D561M385MF2D	35 x 63	288.0	150.0	3.037	4.209
820	81D821M385MG2D	35 x 80	210.0	110.0	3.818	5.282
400 VOLTS DC WORKING; 450 VOLTS DC SURGE						
47	81D470M400HA2D	22 x 25	5110.0	2710.0	0.414	0.549
68	81D680M400HB2D	22 x 30	3550.0	1890.0	0.536	0.707
100	81D101M400HD2D	22 x 40	2420.0	1290.0	0.768	1.012
68	81D680M400JA2D	25 x 25	4230.0	2250.0	0.536	0.707
100	81D101M400JB2D	25 x 30	2920.0	1550.0	0.683	0.902
120	81D121M400JC2D	25 x 35	2420.0	1290.0	0.817	1.085
150	81D151M400JD2D	25 x 40	1650.0	880.0	1.000	1.1329
220	81D221M400JE2D	25 x 50	1320.0	710.0	1.207	1.632
100	81D101M400KA2D	30 x 25	2420.0	1290.0	0.744	0.988
150	81D151M400KB2D	30 x 30	1650.0	880.0	0.927	1.220
180	81D181M400KC2D	30 x 35	1320.0	710.0	1.146	1.500
220	81D221M400KD2D	30 x 40	1110.0	580.0	1.476	1.781
330	81D331M400KE2D	30 x 50	730.0	390.0	1.683	2.244
180	81D181M400MB2D	35 x 30	1320.0	710.0	1.183	1.573
270	81D271M400MC2D	35 x 35	1110.0	580.0	1.415	1.866
330	81D331M400MD2D	35 x 40	730.0	390.0	1.695	2.257
390	81D391M400ME2D	35 x 50	610.0	320.0	2.110	2.818
560	81D561M400MF2D	35 x 63	420.0	220.0	2.757	3.647
820	81D821M400MG2D	35 x 80	350.0	180.0	3.440	4.526

OUTLINE DRAWINGS

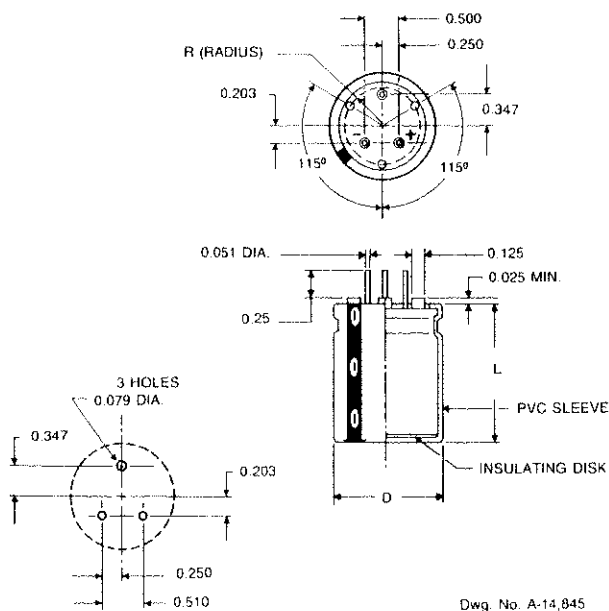
STYLE A
(INCHES)



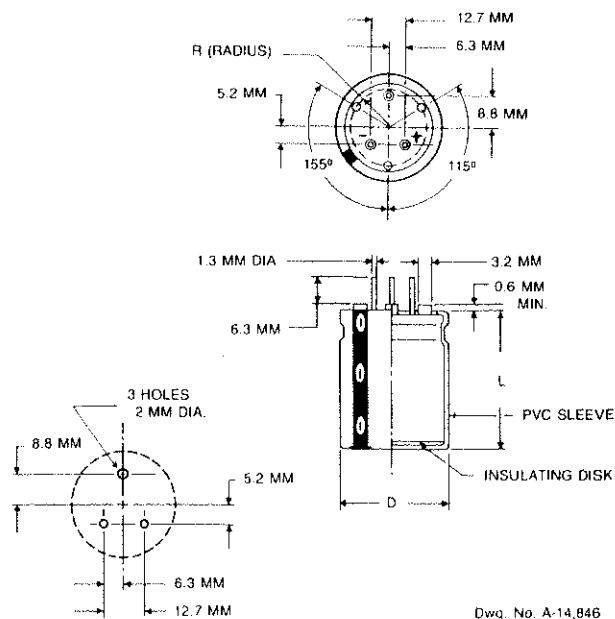
STYLE A
(MILLIMETERS)



STYLE B
(INCHES)



STYLE B
(MILLIMETERS)



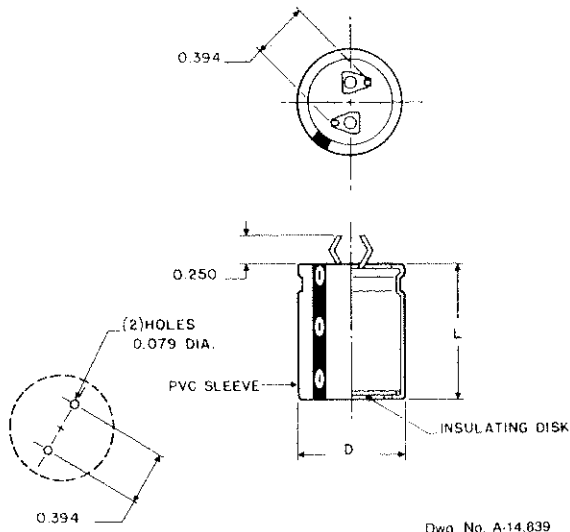
SNAP MOUNT CAPACITOR DIMENSIONAL DIMENSIONS

DIAMETER			STYLE A DIMENSIONS					STYLE B DIMENSIONS	
D mm	D in.	CODE	B mm	B in.	R mm	R in.	C	R mm	R in.
25	1.00	J	2.4	0.093	7.6	0.301	140	N/A	N/A
30	1.18	K	3.2	0.125	9.2	0.363	120	9.9	0.391
35	1.38	M	3.2	0.125	11.6	0.458	120	11.6	0.458

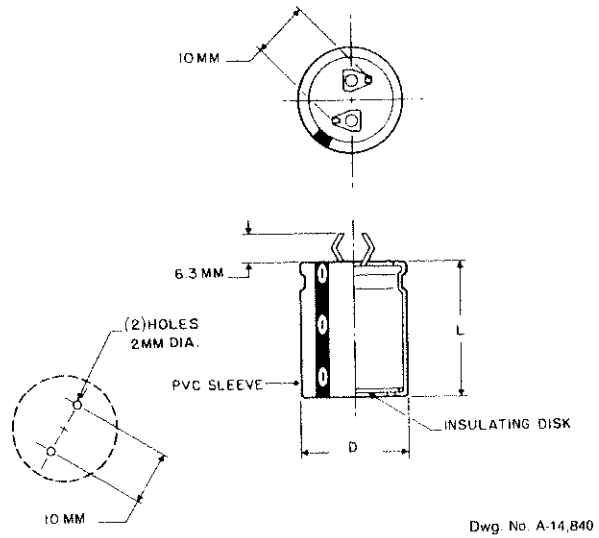
*Note: Style A & B not available in 22 mm dia. units.

OUTLINE DRAWINGS

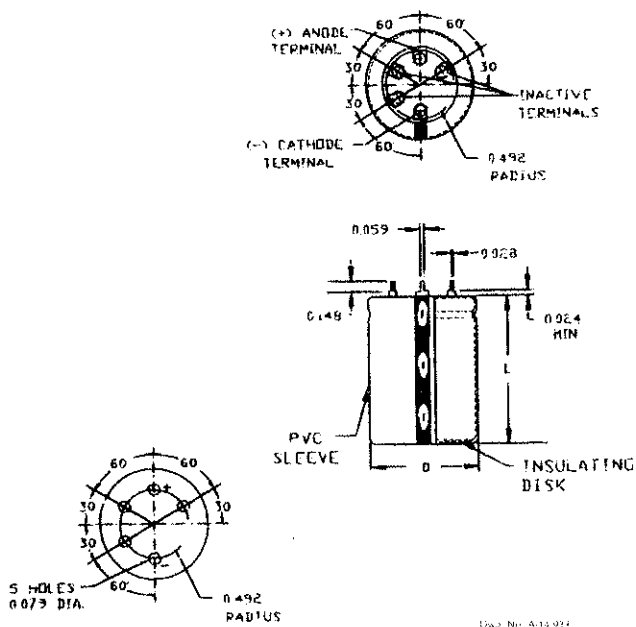
**STYLE D
(INCHES)**



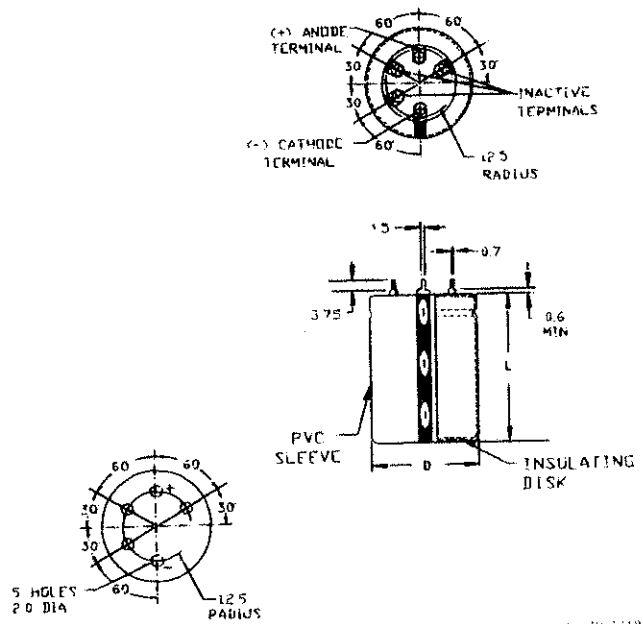
**STYLE E
(MILLIMETERS)**



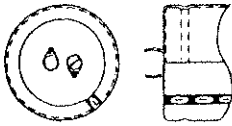
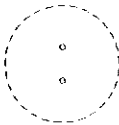
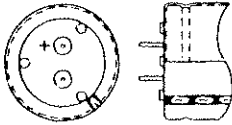
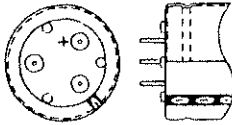
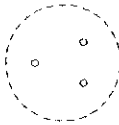
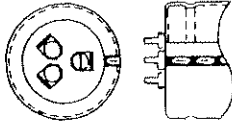
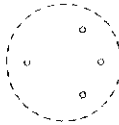
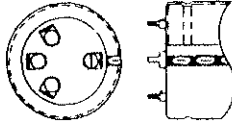
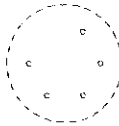
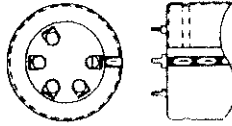
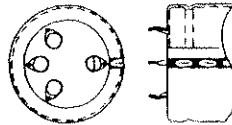
**STYLE F
(INCHES)**



**STYLE G
(MILLIMETERS)**



TERMINAL CONFIGURATION

LEAD CODE	DESCRIPTION	OUTLINE DRAWINGS		AVAILABLE DIAMETERS	AVAILABLE VOLTAGES & TYPES
		MOUNTING CONFIGURATION	TERMINAL CONFIGURATION		
D	STANDARD 2 PIN SNAP-IN			22, 25, 30, 35 H, J, K, M	ALL VOLTAGES 81D, 81DA, 82D, 82DA
A	2 STRAIGHT WIRE LEAD MOLDED COVER WITH STANDOFFS			25, 30, 35 J, K, M	ALL VOLTAGES 82D, 82DA $V \leq 250\text{VDC}$ 81D, 81DA
B	3 STRAIGHT WIRE LEAD MOLDED COVER WITH STANDOFFS			30, 35 K, M	ALL VOLTAGES 82D, 82DA $V \leq 250\text{VDC}$ 81D, 81DA
G	3 STRAIGHT STANDOFF PINS			30 K	ALL VOLTAGES 81D, 81DA, 82D, 82DA
H	4 STRAIGHT STANDOFF PINS			35 M	ALL VOLTAGES 81D, 81DA, 82D, 82DA
F	5 STRAIGHT STANDOFF PINS			40 N	ALL VOLTAGES 81D, 81DA, 82D, 82DA
J	4 PIN SNAP-IN			35 M	ALL VOLTAGES 81D, 81DA, 82D, 82DA

Note: For terminal dimensions for Codes G, H, and J, consult United Chemi-Con.