Aluminum Capacitors
+ 105 °C, Snap-in

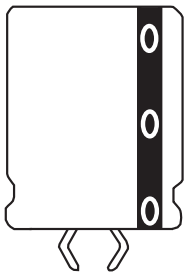

Fig.1 Component Outlines.

FEATURES

- Operating temperature to + 105 °C
- High ripple current capability
- Low ESR

Pb-free Available

QUICK REFERENCE DATA	
DESCRIPTION	**VALUE**
Nominal case size ØD x L in mm	0.87" x 1.00" [22.0 x 25.0] to 1.38" x 3.15" [35.0 x 80.0]
Operating temperature	- 40 °C to + 105 °C
Rated Capacitance	68 µF to 47 000 µF
Capacitance Tolerance	± 20 %
Voltage Rating	16 WVDC to 400 WVDC
Termination	Snap mount
Life validation test at 105 °C	2000 hours: Δ CAP ≤ 15 % from initial measurement. Δ ESR ≤ 1.3 x initial specified limit. Δ DCL ≤ initial specified limit
Shelf life at 85 °C	500 hours: Δ CAP ≤ 15 % from initial measurement. Δ ESR ≤ 1.3 x initial specified limit. Δ DCL ≤ 2 x initial specified limit
DC leakage current	$I = K\sqrt{CV}$ K = 4.0 at + 25 °C I in µA, C in µF, V in Volts

RIPPLE CURRENT MULTIPLIERS			
TEMPERATURE			
AMBIENT TEMPERATURE	**MULTIPLIERS**		
+ 55 °C	1.6		
+ 65 C	1.4		
+ 75 °C	1.2		
+ 85 °C	1.0		
+ 95 °C	0.70		
+ 105 °C	0.50		
FREQUENCY (Hz)			
WVDC	**50-60**	**300 - 1000**	**1000 AND UP**
0 - 49	0.85	1.10	1.15
50 - 199	0.83	1.15	1.20
200 - 250	0.80	1.30	1.40
ESL (TYPICAL VALUES at 1 MHz to 10 MHz)			
Nominal Diameter	0.87 [22.0]	0.98 [25.0]	1.18 [30.0]	1.38 [35.0]
Typical ESL (nH)	6.0	8.0	10.0	12.0

DIMENSIONS in inches [millimeters]

CASE CODE	DIAMETER	LENGTH	CASE CODE	DIAMETER	LENGTH
	D + 0.04 - 0 [+ 1.0 - 0]	**L ± 0.08 [2.0]**		**D + 0.04 - 0 [+ 1.0 - 0]**	**L ± 0.08 [2.0]**
HA	0.87 [22.0]	1.00 [25.0]	KC	1.18 [30.0]	1.38 [35.0]
HB	0.87 [22.0]	1.18 [30.0]	KD	1.18 [30.0]	1.57 [40.0]
HD	0.87 [22.0]	1.57 [40.0]	KE	1.18 [30.0]	2.00 [50.0]
JA	1.00 [25.0]	1.00 [25.0]	MB	1.38 [35.0]	1.18 [30.0]
JB	1.00 [25.0]	1.18 [30.0]	MC	1.38 [35.0]	1.38 [35.0]
JC	1.00 [25.0]	1.38 [35.0]	MD	1.38 [35.0]	1.57 [40.0]
JD	1.00 [25.0]	1.57 [40.0]	ME	1.38 [35.0]	2.00 [50.0]
JE	1.00 [25.0]	2.00 [50.0]	MF	1.38 [35.0]	2.50 [63.0]
KA	1.18 [30.0]	1.00 [25.0]	MG	1.38 [35.0]	3.18 [80.0]
KB	1.18 [30.0]	1.18 [30.0]			

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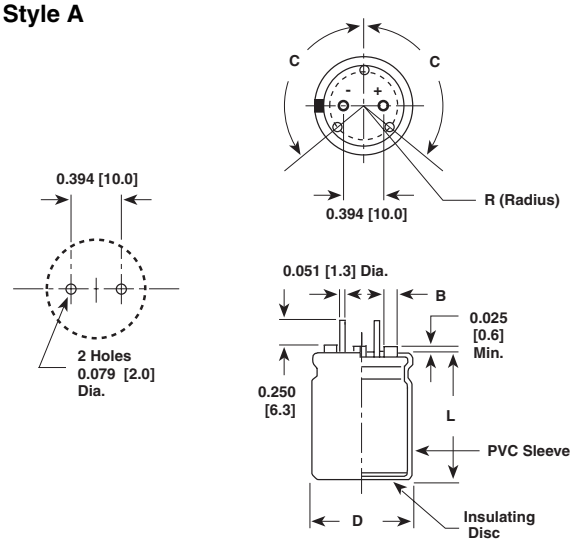
DIMENSIONS in inches [millimeters]					
CIRCUIT BOARD MOUNT TERMINAL DIMENSIONS*					
DIAMETER		**STYLE A**			**STYLE B**
D	**CASE CODE**	**B**	**R**	**C**	**R**
1.00 [25.0]	J	0.093 [2.4]	0.301 [7.6]	140 °	N/A
1.18 [30.0]	K	0.125 [3.2]	0.363 [9.2]	120 °	0.391 [9.9]
1.38 [35.0]	M	0.125 [3.2]	0.458 [11.6]	120 °	0.458 [11.6]

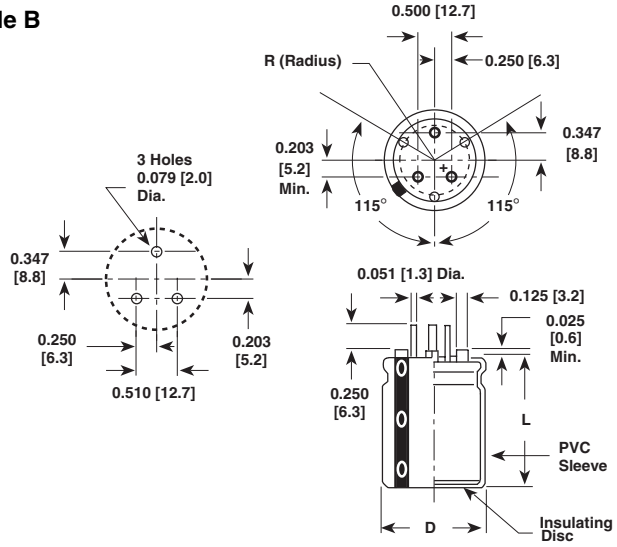
*Style A and B not available in 0.87" [22.0mm] diameter units.

DIMENSIONS AND AVAILABLE FORMS

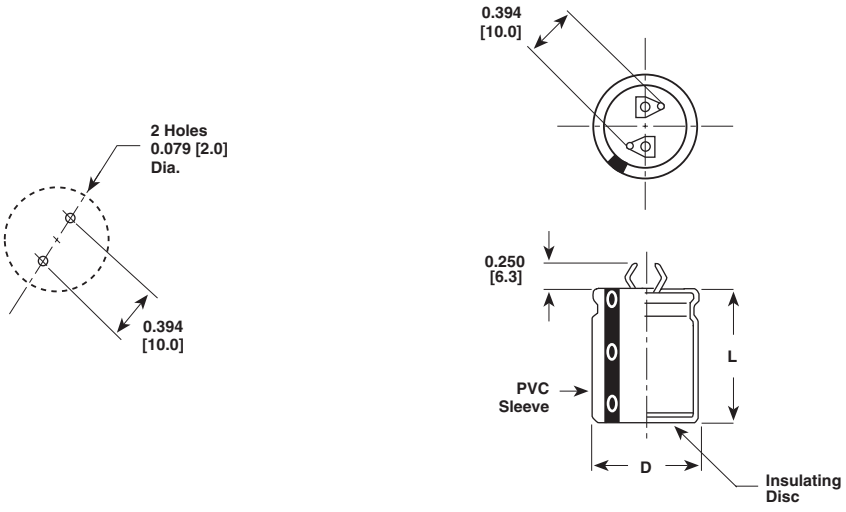
Style A

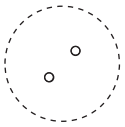
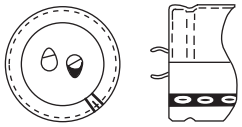
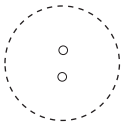
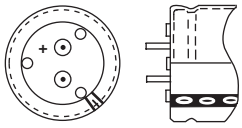
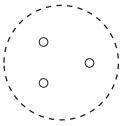
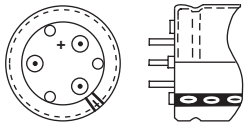


Style B



Style D



TERMINAL CONFIGURATION [numbers in brackets indicate millimeters]					
LEAD CODE	**DESCRIPTION**	**OUTLINE DRAWINGS**		**AVAILABLE DIAMETERS**	**AVAILABLE VOLTAGES AND TYPES**
		MOUNTING CONFIGURATION	**TERMINAL CONFIGURATION**		
D	Standard 2 pin snap in			0.87 [22.0] - H 0.98 [25.0] - J 1.18 [30.0] - K 1.38 [35.0] - M	All voltages 81D, 81DA 82D, 82DA
A	2 straight wire lead molded cover with standoffs			0.98 [25.0] - J 1.18 [30.0] - K 1.38 [35.0] - M	All voltages 82D, 82DA V < = 250 VDC 81D, 81DA
B	3 straight wire lead molded cover with standoffs			1.18 [30.0] - K 1.38 [35.0] - M	All voltages 82D, 82DA V < = 250 VDC 81D, 81DA

ELECTRICAL DATA	
SYMBOL	**DESCRIPTION**
µF	rated capacitance
± %	P = ± 20 %
DC	voltage rating at 105° C
HA	see dimensions in millimeters table
2	PVC insulating sleeve
D	2 pin snap-in

ORDERING EXAMPLE*

Electrolytic capacitor 81D series

81D 882 M 6R3 HA 2 D

*Note for lead (Pb)-free, add suffix E3 to part number.
Example: 81D882M6R3HA2DE3

ELECTRICAL DATA AND ORDERING INFORMATION						
CAPACITANCE (µF)	**PART NUMBER**	**NOMINAL CASE SIZE D X L**	**MAX. ESR at 25 °C (mΩ)**		**MAX. RIPPLE at + 85 °C (A)**	
			120 Hz	**20 k - 40 kHz**	**120 Hz**	**20 k - 40 kHz**
16 WVDC at + 105 °C, SURGE = 20 V						
15000.0	81D153M016JC2D	0.984 x 1.378 [25.0 x 35.0]	58.0	43.0	4.72	5.47
22000.0	81D223M016KB2D	1.181 x 1.181 [30.0 x 30.0]	53.7	41.0	5.24	5.94
33000.0	81D333M016MC2D	1.378 x 1.378 [35.0 x 35.0]	28.0	21.0	8.42	9.71
47000.0	81D473M016MD2D	1.378 x 1.575 [35.0 x 40.0]	23.0	17.0	9.70	11.20
25 WVDC at + 105 °C, SURGE = 30 V						
3300.0	81D332M025HA2D	0.866 x 0.984 [22.0 x 25.0]	110.0	76.0	2.81	3.38
4700.0	81D472M025JA2D	0.984 x 0.984 [25.0 x 25.0]	86.0	60.0	3.44	4.15
6800.0	81D682M025KA2D	1.181 x 0.984 [30.0 x 25.0]	71.0	54.0	4.25	4.91
10000.0	81D103M025KB2D	1.181 x 1.181 [30.0 x 30.0]	54.0	41.0	5.24	5.94
15000.0	81D153M025KD2D	1.181 x 1.575 [30.0 x 40.0]	36.4	27.0	7.07	8.16
22000.0*	81D223M025MD2D	1.378 x 1.575 [35.0 x 40.0]	23.0	17.0	9.41	11.20

*These ratings are normally stocked.

ELECTRICAL DATA AND ORDERING INFORMATION

CAPACITANCE (µF)	PART NUMBER	NOMINAL CASE SIZE D X L	MAX. ESR at 25 °C (mΩ)		MAX. RIPPLE at + 85 °C (A)	
			120 Hz	20 k - 40 kHz	120 Hz	20 k - 40 kHz
35 WVDC at + 105 °C, SURGE = 40 V						
4700.0	81D472M035KA2D	1.181 x 0.984 [30.0 x 25.0]	75.0	54.0	4.13	4.84
6800.0	81D682M035KB2D	1.181 x 1.181 [30.0 x 30.0]	57.0	41.0	5.10	5.94
12000.0	81D123M035KD2D	1.181 x 1.575 [30.0 x 40.0]	37.7	27.0	6.92	8.16
10000.0	81D103M035MB2D	1.378 x 1.181 [35.0 x 30.0]	36.0	24.0	7.04	8.63
50 WVDC at + 105 °C, SURGE = 63 V						
1200.0	81D122M050HA2D	0.866 x 0.984 [22.0 x 25.0]	148.0	79.0	2.41	3.29
2200.0	81D222M050JB2D	0.984 x 1.181 [25.0 x 30.0]	85.0	48.0	3.69	4.93
4700.0	81D472M050KC2D	1.181 x 1.378 [30.0 x 35.0]	53.0	33.0	5.51	7.05
6800.0*	81D682M050KE2D	1.181 x 1.969 [30.0 x 50.0]	33.0	22.0	8.04	9.74
63 WVDC at + 105 °C, SURGE = 79 V						
1000.0	81D102M063HA2D	0.866 x 0.984 [22.0 x 25.0]	151.0	75.0	2.39	3.39
1500.0	81D152M063HB2D	0.866 x 1.181 [22.0 x 30.0]	118.0	59.0	2.87	4.06
2200.0	81D222M063JC2D	0.984 x 1.378 [25.0 x 35.0]	72.0	38.0	4.21	5.78
4700.0	81D472M063KD2D	1.181 x 1.575 [30.0 x 40.0]	44.0	27.0	6.32	8.16
100 WVDC at + 105 °C, SURGE = 125 V						
470.0	81D471M100HB2D	0.866 x 1.181 [22.0 x 30.0]	258.0	114.0	1.94	2.93
680.0	81D681M100JB2D	0.984 x 1.181 [25.0 x 30.0]	188.0	86.0	2.48	3.67
1000.0	81D102M100KB2D	1.181 x 1.181 [30.0 x 30.0]	136.0	66.0	3.28	4.69
1500.0	81D152M100KC2D	1.181 x 1.378 [30.0 x 35.0]	106.0	52.0	3.90	5.59
2200.0*	81D222M100KE2D	1.181 x 1.969 [30.0 x 50.0]	66.0	33.0	5.69	8.05
200 WVDC at + 105 °C, SURGE = 250V						
220.0	81D221M200JA2D	0.984 x 0.984 [25.0 x 25.0]	625.0	272.0	1.37	2.08
330.0	81D331M200KA2D	1.181 x 0.984 [30.0 x 25.0]	498.0	192.0	1.71	2.77
470.0	81D471M200KB2D	1.181 x 1.181 [30.0 x 30.0]	294.0	136.0	2.39	3.51
1000.0	81D102M200KE2D	1.181 x 1.969 [30.0 x 50.0]	142.0	67.0	4.09	5.95
820.0	81D821M200MC2D	1.378 x 1.378 [35.0 x 35.0]	189.0	93.0	3.47	4.94
1000.0*	81D102M200MD2D	1.378 x 1.575 [35.0 x 40.0]	149.0	74.0	4.07	5.78
250 WVDC at + 105 °C, SURGE = 300V						
220.0	81D221M250HD2D	0.866 x 1.575 [22.0 x 40.0]	558.0	166.0	1.57	2.89
330.0	81D331M250JD2D	0.984 x 1.575 [25.0 x 40.0]	382.0	121.0	2.12	3.81
470.0	81D471M250JE2D	0.984 x 1.969 [25.0 x 25.0]	243.0	93.0	2.81	4.54
680.0	81D681M250KE2D	1.181 x 1.969 [30.0 x 50.0]	198.0	67.0	3.47	5.99
1000.0*	81D102M250ME2D	1.378 x 1.969 [35.0 x 50.0]	132.0	58.0	4.69	7.07
400 WVDC at + 105 °C, SURGE = 450V						
68.0	81D680M400HB2D	0.866 x 1.181 [22.0 x 30.0]	3550.0	1890.0	0.536	0.707
100.0	81D101M400JB2D	0.984 x 1.181 [25.0 x 30.0]	2920.0	1550.0	0.683	0.902
150.0	81D151M400JD2D	0.984 x 1.575 [25.0 x 40.0]	1650.0	880.0	1.000	1.1329
220.0	81D221M400KD2D	1.181 x 1.575 [30.0 x 40.0]	1110.0	580.0	1.476	1.781
330.0	81D331M400MD2D	1.378 x 1.575 [35.0 x 40.0]	730.0	390.0	1.695	2.257

*These ratings are normally stocked.

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