

High Performance Single Layer Capacitors for RF, Microwave, and Millimeter-Wave Applications



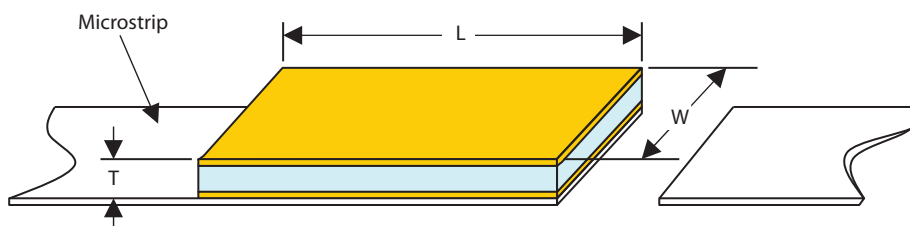
Di-Cap®

Functional Applications:

DC Blocking, RF Bypass, Filtering, and Tuning.

Benefits:

- Gold metallization for wire bonding
- Rugged construction
- Custom sizes at commercial prices
- Thin film Technology
- ESD proof



DiCap Dimensions

Style	W Width		L Length (Maximum)		T Thickness (50 Volts)		T Thickness (100 Volts)		Standard Capacitance Range pF
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
D10	.010 ^{+0.000} / _{-0.003}	.254 ^{+0.000} / _{-0.076}	.010	.254	.004 ±.001	.102 ±.025	-	-	.02 - 100
D12	.012 ^{+0.002} / _{-0.003}	.305 ^{+0.051} / _{-0.076}	.015	.381	.004 ±.001	.102 ±.025	-	-	.03 - 200
D15	.015 ^{+0.000} / _{-0.003}	.381 ^{+0.000} / _{-0.076}	.020	.508	.004 ±.001	.102 ±.025	.006 ±.001	.152 ±.025	.04 - 300
D20	.020 ^{+0.000} / _{-0.003}	.508 ^{+0.000} / _{-0.076}	.020	.508	.004 ±.001	.102 ±.025	.006 ±.001	.152 ±.025	.06 - 400
D25	.025 ^{+0.000} / _{-0.003}	.635 ^{+0.000} / _{-0.076}	.030	.762	.004 ±.001	.102 ±.025	.006 ±.001	.152 ±.025	.10 - 780
D30	.030 ^{+0.000} / _{-0.003}	.762 ^{+0.000} / _{-0.076}	.030	.762	.004 ±.001	.102 ±.025	.006 ±.001	.152 ±.025	.15 - 950
D35	.035 ±.005	.889 ±.127	.040	1.016	.004 ±.001	.102 ±.025	.007 ±.002	.178 ±.051	.20 - 1600
D50	.050 ±.010	1.270 ±.254	.060	1.524	-	-	.007 ±.002	.178 ±.051	.30 - 3700
D70	.070 ±.010	1.778 ±.254	.080	1.778	-	-	.008 ±.002	.203 ±.051	.55 - 6800
D90	.090 ±.010	2.286 ±.254	.100	2.540	-	-	.010 ±.004	.254 ±.102	.65 - 10,000

Maximum thickness does not apply for capacitance values below 0.5pF.

Table of Standard Values (pF)

0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55
0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1
1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
2	2.2	2.4	2.7	3	3.3	3.6	3.9	4.3
4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1	10
11	12	13	15	16	18	20	22	24
27	30	33	36	39	43	47	51	56
62	68	75	82	91	100	110	120	130
150	160	180	200	220	240	270	300	330
360	390	430	470	510	560	620	680	750
820	910	1000	1100	1200	1300	1500	1600	1800
2000	220	2400	2700	3000	3300	3600	3900	4300
5300	6500	10,000						



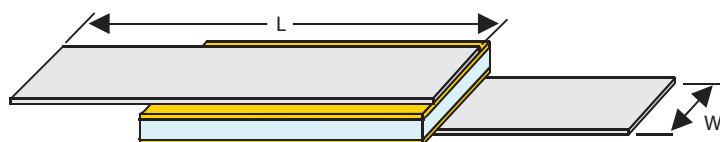
Di-Cap®

Leaded Di-Cap® Dimensions

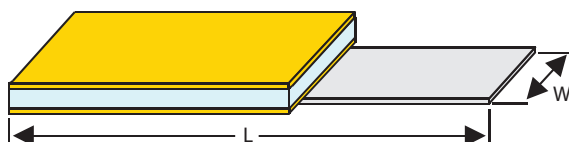
Style	W		W		L	
	Lead Width (Minimum)		Lead Width (Maximum)		Lead Length (Minimum)	
	Inches	mm	Inches	mm	Inches	mm
D10	.0035	.0889	.007	.1778	.250	6.350
D12	.0045	.1143	.009	.2286	.250	6.350
D15	.0065	.1651	.013	.3302	.250	6.350
D20	.0085	.2159	.017	.2159	.250	6.350
D25	.011	.2794	.022	.5588	.250	6.350
D30	.0135	.3429	.027	.6858	.250	6.350
D35	.015	.381	.030	.762	.250	6.350
D50	.020	.508	.040	1.016	.250	6.350
D70	.030	.762	.060	1.524	.250	6.350
D90	.040	1.016	.080	2.032	.250	6.350

Notes:

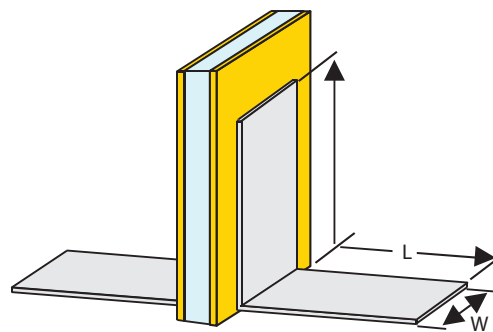
- See Di-Cap® Termination Code Table for available lead configurations.
- Lead material is 0.002" pure silver, (Ag), 0.002"±.0005" thick.
- Leads are attached with AuSn, 80%/20% eutectic alloy. Re-flow temperature is 280°C minimum.
- Pure Gold, (Au) leads are available. Consult factory for details.
- Chip dimensions per Di-Cap® dimensions table.
- Custom lead dimensions are available. Consult factory for details.



Axial Beam Lead



Single Beam Lead



Standing Axial Beam Lead

Di-Cap® Designer Kits 160 Capacitors, 10 Each of 16 Values

Part Number	Capacitor Width	10 Capacitors of each value								
		Dielectric	pF	Tol.	pF	Tol.	pF	Tol.	pF	Tol.
D10XXKITA5PX	.010"	Class I, see codes on pg. 5	.1	B	.6	C	1.5	C	2.7	D
			.4	B	1.0	C	2.2	D	3.3	D
		Class II, see codes on pg. 5	3.9	D	5.6	M	8.2	M	20	M
D15XXKITA5PX	.015"	Class I, see codes on pg. 5	.1	B	.6	C	1.5	C	3.3	D
			.4	B	1.0	C	2.2	C	5.6	D
		Class II, see codes on pg. 5	6.8	K	10	K	20	M	50	M
D20XXKITA5PX	.020"	Class I, see codes on pg. 5	.1	B	.6	C	1.5	C	3.3	D
			.4	B	1.0	C	2.2	C	5.6	D
		Class II, see codes on pg. 5	6.8	K	10	K	20	M	50	M
D25XXKITA5PX	.025"	Class I, see codes on pg. 5	.1	B	.6	C	1.5	C	3.3	D
			.4	B	1.0	C	2.2	C	5.6	D
		Class II, see codes on pg. 5	6.8	K	10	K	20	M	50	M
D30XXKITA5PX	.030"	Class I, see codes on pg. 5	.1	B	.6	C	1.5	C	3.3	D
			.4	B	1.0	C	2.2	C	5.6	D
		Class II, see codes on pg. 5	6.8	K	10	K	20	M	50	M

DLI reserves the right to substitute values as required.
Customer may request particular cap value and material for sample kits.

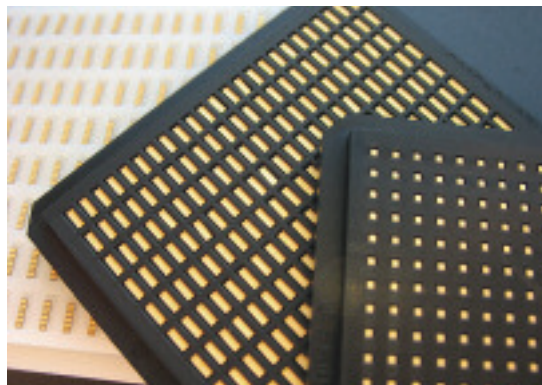
DLI - The Global Leader for High Frequency Solutions

High Performance Single Layer Capacitors for RF, Microwave, and Millimeter-Wave Applications

Di-Cap®

25 Volt, Ultra High K, UX* Dielectric Di-Cap® Capacitance Ranges (pF)

Case Size		Available Thickness	
		0.005"	0.010"
D10	Min	60	—
	Max	100	—
D12	Min	90	—
	Max	200	—
D15	Min	130	—
	Max	300	—
D20	Min	180	90
	Max	400	200
D25	Min	330	170
	Max	780	390
D30	Min	470	230
	Max	950	470
D35	Min	730	360
	Max	1600	850
D50	Min	1900	940
	Max	3700	1900
D70	Min	4300	2000
	Max	6800	3500
D90	Min	7500	3700
	Max	10000	5500



*Recommended for commercial use only. UX material restricted to "M" termination only.

50 Volt Di-Cap® Capacitance Ranges (pF)

Case Size		DLI Class I Dielectrics														
		LA	PI	PG	AH	CF	NA	CD	NG	CG	DB	NP	NR	NS	NU	NV
D10	Min	0.02	0.03	0.04	0.06	0.07	0.06	0.10	0.15	0.20	0.20	0.25	0.45	0.80	1.6	2.4
	Max	0.02	0.05	0.06	0.10	0.10	0.10	0.15	0.20	0.35	0.35	0.40	0.80	1.5	3.0	4.3
D12	Min	0.03	0.04	0.06	0.08	0.10	0.09	0.15	0.20	0.30	0.30	0.35	0.65	1.2	2.4	3.6
	Max	0.06	0.10	0.10	0.20	0.25	0.20	0.35	0.45	0.75	0.75	0.90	1.7	3.0	6.2	9.1
D15	Min	0.04	0.06	0.08	0.15	0.15	0.15	0.25	0.25	0.45	0.45	0.50	1.0	1.8	3.6	5.6
	Max	0.08	0.15	0.20	0.30	0.35	0.30	0.55	0.65	1.1	1.1	1.3	2.4	4.7	9.1	13
D20	Min	0.06	0.09	0.15	0.20	0.20	0.20	0.35	0.40	0.65	0.65	0.75	1.5	2.7	5.6	8.2
	Max	0.10	0.20	0.25	0.40	0.50	0.45	0.75	0.90	1.4	1.5	1.8	3.3	6.2	12	18
D25	Min	0.10	0.20	0.25	0.35	0.45	0.40	0.65	0.75	1.2	1.3	1.5	2.7	5.1	11	16
	Max	0.20	0.40	0.50	0.80	0.95	0.90	1.5	1.7	2.7	2.7	3.3	6.2	12	24	36
D30	Min	0.15	0.25	0.30	0.45	0.55	0.50	0.85	0.95	1.6	1.6	1.9	3.6	6.8	15	20
	Max	0.25	0.45	0.60	0.95	1.1	1.0	1.8	2.0	3.3	3.3	3.9	7.5	13	27	43
D35	Min	0.20	0.35	0.50	0.70	0.85	0.80	1.3	1.5	2.7	2.7	3.0	5.6	11	22	33
	Max	0.50	0.85	1.1	1.8	2.0	1.9	3.3	3.6	6.2	6.2	7.5	13	27	51	75

Case Size		DLI Class II Dielectrics								DLI Class III Dielectrics		
		BF*	BD	BG*	BC	BE	BL	BJ	BN	BT*	BU	BV
D10	Min	1.2	1.8	2.4	3.6	3.3	5.6	9.1	12	12	22	36
	Max	2.2	3.6	4.3	6.2	6.2	10	16	22	22	43	68
D12	Min	1.8	3.0	3.6	5.1	5.1	8.2	13	18	18	36	56
	Max	4.7	7.5	9.1	13	13	20	33	47	47	91	130
D15	Min	2.7	4.3	5.6	7.5	7.5	12	20	27	27	51	82
	Max	6.8	11	13	20	18	30	51	68	68	130	200
D20	Min	4.3	6.2	8.2	12	12	18	30	43	43	75	120
	Max	9.1	13	18	27	24	39	68	91	91	180	270
D25	Min	8	12	16	22	22	36	56	82	82	150	240
	Max	18	27	36	51	51	82	130	180	180	330	510
D30	Min	10	16	20	30	30	47	75	100	100	200	300
	Max	22	33	43	62	62	91	160	220	220	390	620
D35	Min	16	27	33	47	47	75	120	160	160	300	510
	Max	39	62	75	110	110	180	270	390	390	750	1200

*Recommended for commercial use only. Please contact an inside sales representative for additional information.

Di-Cap®

100 Volt Di-Cap® Capacitance Ranges (pF)

Case Size		DLI Class I Dielectrics														
		LA	PI	PG	AH	CF	NA	CD	NG	CG	DB	NP	NR	NS	NU	NV
D15	Min	0.03	0.04	0.06	0.08	0.1	0.09	0.15	0.20	0.30	0.30	0.35	0.65	1.2	2.4	3.6
	Max	0.05	0.10	0.10	0.20	0.25	0.20	0.35	0.45	0.70	0.75	0.85	1.6	3.0	6.2	9.1
D20	Min	0.04	0.06	0.08	0.15	0.15	0.15	0.25	0.30	0.45	0.45	0.55	1.0	1.9	3.9	5.6
	Max	0.08	0.10	0.15	0.25	0.30	0.30	0.50	0.60	0.95	1.0	1.2	2.2	3.9	8.2	12
D25	Min	0.07	0.15	0.20	0.25	0.30	0.30	0.45	0.50	0.85	0.85	1.0	1.9	3.6	7.5	11
	Max	0.15	0.25	0.35	0.50	0.65	0.60	1.0	1.1	1.9	1.9	2.2	4.3	8.2	16	24
D30	Min	0.09	0.15	0.20	0.35	0.40	0.35	0.60	0.65	1.1	1.1	1.3	2.7	4.7	9.1	15
	Max	0.15	0.30	0.40	0.65	0.75	0.70	1.2	1.4	2.2	2.2	2.7	5.1	9.1	18	27
D35	Min	0.15	0.20	0.25	0.40	0.45	0.45	0.70	0.80	1.3	1.4	1.6	3.0	5.6	12	18
	Max	0.30	0.55	0.75	1.2	1.4	1.3	2.2	2.4	3.9	4.3	5.1	9.1	18	36	51
D50	Min	0.30	0.50	0.60	0.95	1.1	1.1	1.7	2.0	3.3	3.3	3.9	7.5	15	30	43
	Max	0.75	1.3	1.7	2.7	3.0	3.0	4.7	5.6	9.1	9.1	11	20	39	82	120
D70	Min	0.55	0.95	1.2	1.9	2.4	2.2	3.6	4.3	6.8	6.8	8	15	30	56	91
	Max	1.10	2.0	2.7	3.9	4.7	4.3	7.5	8.2	13	15	16	33	62	120	180
D90	Min	0.65	1.2	1.5	2.4	3.0	2.7	4.3	5.1	8.2	8.2	10	20	36	68	110
	Max	1.80	3.0	3.9	6.2	7.5	6.8	12	13	22	22	27	51	91	180	270

Case Size		DLI Class II Dielectrics								DLI Class III Dielectrics		
		BF*	BD	BG*	BC	BE	BL	BJ	BN	BT*	BU	BV
D15	Min	1.8	3.0	3.6	5.6	5.1	8.2	13	18	18	36	56
	Max	4.3	6.8	9.1	13	13	20	33	47	47	82	130
D20	Min	2.7	4.3	5.6	8	8	13	20	30	30	56	82
	Max	6.2	9	12	18	16	27	47	62	62	120	180
D25	Min	5.6	8	11	16	15	24	39	56	56	100	160
	Max	12	18	24	33	33	51	82	120	120	220	360
D30	Min	6.8	11	15	20	20	33	51	68	68	130	220
	Max	13	22	27	43	39	62	100	130	130	270	430
D35	Min	9.1	13	18	24	24	39	62	91	91	160	270
	Max	24	39	51	75	75	120	180	270	270	510	750
D50	Min	22	33	43	62	62	100	160	220	220	390	620
	Max	56	91	120	160	160	270	430	560	560	1100	1800
D70	Min	43	68	91	120	120	200	330	430	430	820	1300
	Max	91	130	180	270	240	390	680	910	910	1600	2700
D90	Min	51	82	110	150	150	240	390	510	510	1000	1600
	Max	130	220	270	390	390	620	1000	1300	1300	2700	4300

*Recommended for commercial use only. Please contact an inside sales representative for additional information.

Part Number Identification

D	10	CF	OR1	B	5	P	X	
Product D = Di-Cap®	Case Size 10 12 15 20 25 30 35 50 70 90	Material See material tables on page 5.	Capacitance (pF) R02 = 0.02 pF OR5 = 0.5 pF 1R0 = 1.0 pF 5R1 = 5.1 pF 100 = 10 pF 101 = 100 pF 432 = 4300 pF Refer to Capacitance range tables for available values. Consult an inside sales rep. for custom solutions.	Tolerance A = ± 0.05pF B = ± 0.10pF C = ± 0.25pF D = ± 0.5pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% L = ± 15% M = ± 20% Z = + 80% -20%	Voltage 2 = 25V 5 = 50V 1 = 100V	Termination P = Ni / Au T = Ni / AuSn M = Au L = Single Beam Lead A = Axial Beam Lead S = Standing Axial Beam Lead	Test Level Y, X, A, B, D and E. See test level definitions on page 7.	Packaging D = Black Dotted E = Repopulated T = Tape and Reel Leave blank for generic waffle pack. See packaging definitions on page 32.