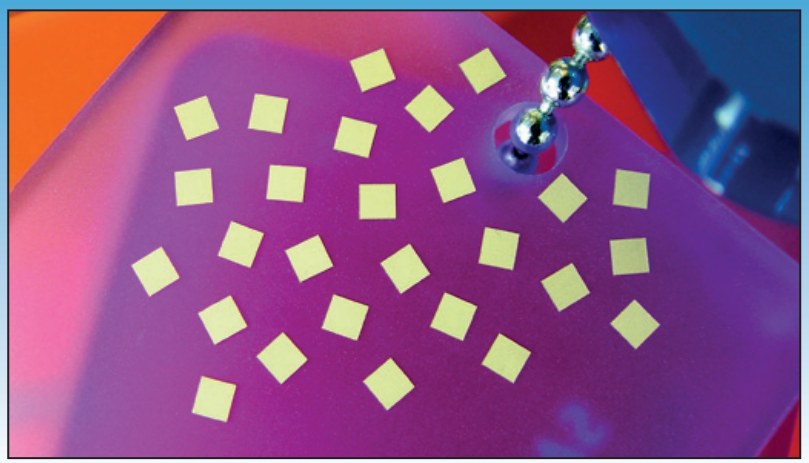
DIELECTRIC LABORATORIES

Di-Cap®
Single Layer Capacitor



Description

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

- Available from 0.03pF to 10,000pF
- Operating frequency up to 100GHz
- Wire Bondable
  100µ" Au with a Ni Barrier Layer
- Customized solutions available

Applications

- DC Blocking
- RF Bypassing
- Filtering
- Tuning
- Coupling

Benefits

- ESD Proof
- Gold metallization for wire bonding
- Rugged construction

Test Level Codes

Commercial Level

Y	1% AQL 2-Side Visual
X	100% 4-Side Visual 1% AQL Electrical (CAP/DF/IR & DWV)

High Reliability

A	**MIL-PRF-49464 Group A** • 100% Thermal Shock • 100% Voltage Conditioning • 100% Electrical (CAP/DF/IR & DWV) • 100% 6-Side Visual • Bond Strength • Die Shear • Temperature Coefficient	B	**MIL-PRF-49464 Group B** • MIL-PRF-49464 Group A • Immersion • Low Voltage Humidity • Life
		D	• Customer Defined
		E	• 6-Side Visual

Tolerance

Code	Description
A	± 0.05pF
B	± 0.1pF
C	± 0.25pF
D	± 0.50pF
G	± 2%
J	± 5%
K	± 10%
L	± 15%
M	± 20%
X	GMV (Guarantee Minimum Value)
Z	+80%, -20%

Voltage

Code	Voltage
2	25 Volts
5	50 Volts
1	100 Volts

Part Number Identification

D	10	CF	0R1	B	5	P	X	
Product D = Di-Cap®	**Case Size** 10 12 15 20 25 30 35 50 70 90	**Material** See material tables.	**Capacitance (pF)** R02 = 0.02pF 0R5 = 0.5pF 1R0 = 1.0pF 5R1 = 5.1pF 100 = 10pF 101 = 100pF 432 = 4300pF 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.	**Packaging** D = Black Dotted E = Repopulated T = Tape and Reel Leave blank for generic waffle pack.

knowles
DLI•JohansonMFG•Novacap•Syfer•Voltronics

www.dilabs.com

North America
Knowles (Cazenovia)
Phone: +1 315 655 8710
KCCSales@knowles.com

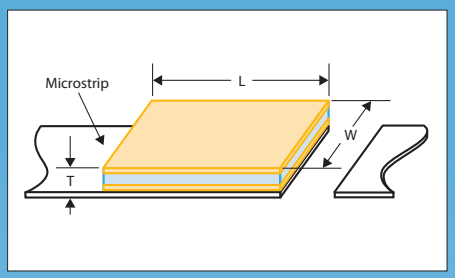
Europe
Knowles (UK) Ltd
Phone: +44 1603 723300
SyferSales@knowles.com

Far East
Knowles Capacitors
Phone: +86 512 62588258-6243
KCAsiaSales@knowles.com

Dimensions

Style	Length	Width	Thickness	
			50 Volt	100 Volt
D10	0.010" Max. (0.254mm Max.)	0.010" +0/-0.003" (0.254mm +0/-0.076mm)	0.004" ±0.001" (0.102mm ±0.025mm)	-
D12	0.015" Max. (0.381mm Max.)	0.012" +0.002"/-0.003" (0.305mm +0.051mm/-0.076mm)	0.004" ±0.001" (0.102mm ±0.025mm)	-
D15	0.020" Max. (0.508mm Max.)	0.015" +0/-0.003" (0.381mm +0/-0.076mm)	0.004" ±0.001" (0.102mm ±0.025mm)	0.006" ±0.001" (0.152mm ±0.025mm)
D20	0.020" Max. (0.508mm Max.)	0.020" +0/-0.003" (0.508mm +0/-0.076mm)	0.004" ±0.001" (0.102mm ±0.025mm)	0.006" ±0.001" (0.152mm ±0.025mm)
D25	0.030" Max. (0.762mm Max.)	0.025" +0/-0.003" (0.635mm +0/-0.076mm)	0.004" ±0.001" (0.102mm ±0.025mm)	0.006" ±0.001" (0.152mm ±0.025mm)
D30	0.030" Max. (0.762mm Max.)	0.030" +0/-0.003" (0.762mm +0/-0.076mm)	0.004" ±0.001" (0.102mm ±0.025mm)	0.006" ±0.001" (0.152mm ±0.025mm)
D35	0.040" Max. (1.016mm Max.)	0.035" ±0.005" (0.889mm ±0.127mm)	0.004" ±0.001" (0.102mm ±0.025mm)	0.007" ±0.002" (0.178mm ±0.051mm)
D50	0.060" Max. (1.524mm Max.)	0.050" ±0.010" (1.270mm ±0.254mm)	-	0.007" ±0.002" (0.178mm ±0.051mm)
D70	0.080" Max. (1.778mm Max.)	0.070" ±0.010" (1.778mm ±0.254mm)	-	0.007" ±0.002" (0.178mm ±0.051mm)
D90	0.100" Max. (2.54mm Max.)	0.090" ±0.010" (2.286mm ±0.254mm)	-	0.007" ±0.002" (0.178mm ±0.051mm)

*UX material available in 25V (0.006" Thick) and 50V (0.010" Thick)



Capacitance values - 50 Volt Rated Di-Cap®

Style	D10		D12		D15		D20		D25		D30		D35	
	CAPACITANCE (pF)													
MATERIAL	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
PI	0.03	0.05	0.04	0.1	0.06	0.15	0.09	0.2	0.2	0.4	0.25	0.45	0.35	0.85
PG	0.04	0.06	0.06	0.1	0.08	0.2	0.15	0.25	0.25	0.5	0.3	0.6	0.5	1.1
AH	0.06	0.1	0.08	0.2	0.15	0.3	0.2	0.4	0.35	0.8	0.45	0.95	0.7	1.8
CF	0.07	0.1	0.1	0.25	0.15	0.35	0.2	0.5	0.45	0.95	0.55	1.1	0.85	2
NA	0.06	0.1	0.09	0.2	0.15	0.3	0.2	0.45	0.4	0.9	0.5	1	0.8	1.9
CD	0.1	0.15	0.15	0.35	0.25	0.55	0.35	0.75	0.65	1.5	0.85	1.8	1.3	3.3
CG	0.2	0.35	0.3	0.75	0.45	1.1	0.65	1.4	1.2	2.7	1.6	3.3	2.7	6.2
NP	0.25	0.4	0.35	0.9	0.5	1.3	0.75	1.8	1.5	3.3	1.9	3.9	3	7.5
NR	0.45	0.8	0.65	1.7	1	2.4	1.5	3.3	2.7	6.2	3.6	7.5	5.6	13
NS	0.8	1.5	1.2	3	1.8	4.7	2.7	6.2	5.1	12	6.8	13	11	27
NU	1.6	3	2.4	6.2	3.6	9.1	5.6	12	11	24	15	27	22	51
NV	2.4	4.3	3.6	9.1	5.6	13	8.2	18	16	36	20	43	33	75
BD	1.8	3.6	3	7.5	4.3	11	6.2	13	12	27	16	33	27	62
BC	3.6	6.2	5.1	13	7.5	20	12	27	22	51	30	62	47	110
BE	3.3	6.2	5.1	13	7.5	18	12	24	22	51	30	62	47	110
BL	5.6	10	8.2	20	12	30	18	39	36	82	47	91	75	180
BJ	9.1	16	13	33	20	51	30	68	56	130	75	160	120	270
BN	12	22	18	47	27	68	43	91	82	180	100	220	160	390
BU	22	43	36	91	51	130	75	180	150	330	200	390	300	750
BV	36	68	56	130	82	200	120	270	240	510	300	620	510	1200

Capacitance values - 100 Volt Rated Di-Cap®

Style	D15		D20		D25		D30		D35		D50		D70		D90	
	CAPACITANCE (pF)															
MATERIAL	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
PI	0.04	0.1	0.06	0.1	0.15	0.25	0.15	0.3	0.2	0.55	0.5	1.3	0.95	2	1.2	3
PG	0.06	0.1	0.08	0.15	0.2	0.35	0.2	0.4	0.25	0.75	0.6	1.7	1.2	2.7	1.5	3.9
AH	0.08	0.2	0.15	0.25	0.25	0.5	0.35	0.65	0.4	1.2	0.95	2.7	1.9	3.9	2.4	6.2
CF	0.1	0.25	0.15	0.3	0.3	0.65	0.4	0.75	0.45	1.4	1.1	3	2.4	4.7	3	7.5
NA	0.09	0.2	0.15	0.3	0.3	0.6	0.35	0.7	0.45	1.3	1.1	3	2.2	4.3	2.7	6.8
CD	0.15	0.35	0.25	0.5	0.45	1	0.6	1.2	0.7	2.2	1.7	4.7	3.6	7.5	4.3	12
CG	0.3	0.7	0.45	0.95	0.85	1.9	1.1	2.2	1.3	3.9	3.3	9.1	6.8	13	8.2	22
DB	0.3	0.75	0.45	1	0.85	1.9	1.1	2.2	1.4	4.3	3.3	9.1	6.8	15	8.2	22
NP	0.35	0.85	0.55	1.2	1	2.2	1.3	2.7	1.6	5.1	3.9	11	8	16	10	27
NR	0.65	1.6	1	2.2	1.9	4.3	2.7	5.1	3	9.1	7.5	20	15	33	20	51
NS	1.2	3	1.9	3.9	3.6	8.2	4.7	9.1	5.6	18	15	39	30	62	36	91
NU	2.4	6.2	3.9	8.2	7.5	16	9.1	18	12	36	30	82	56	120	68	180
NV	3.6	9.1	5.6	12	11	24	15	27	18	51	43	120	91	180	110	270
BD	3	6.8	4.3	9	8	18	11	22	13	39	33	91	68	130	82	220
BC	5.6	13	8	18	16	33	20	43	24	75	62	160	120	270	150	390
BE	5.1	13	8	16	15	33	20	39	24	75	62	160	120	240	150	390
BL	8.2	20	13	27	24	51	33	62	39	120	100	270	200	390	240	620
BJ	13	33	20	47	39	82	51	100	62	180	160	430	330	680	390	1000
BN	18	47	30	62	56	120	68	130	91	270	220	560	430	910	510	1300
BU	36	82	56	120	100	220	130	270	160	510	390	1100	820	1600	1000	2700
BV	56	130	82	180	160	360	220	430	270	750	620	1800	1300	2700	1600	4300

UX Material Capacitance Table

Style	D10		D12		D15		D20		D25		D30		D35		D50		D70		D90	
	CAPACITANCE (pF)																			
MATERIAL	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
25V	51	75	75	180	110	250	170	340	280	650	390	800	620	1400	1600	3200	3500	5900	6200	10000
50V							100	200	170	390	240	470	360	850	940	2000	2100	3500	3700	5500