

Functional Applications:

- DC Blocking
- RF Bypass
- Filtering
- Tuning
- Submounts

Benefits:

- Gold Metallization for wire bonding
- Rugged Construction
- Custom sizes at commercial prices
- Thin Film Technology
- ESD Proof

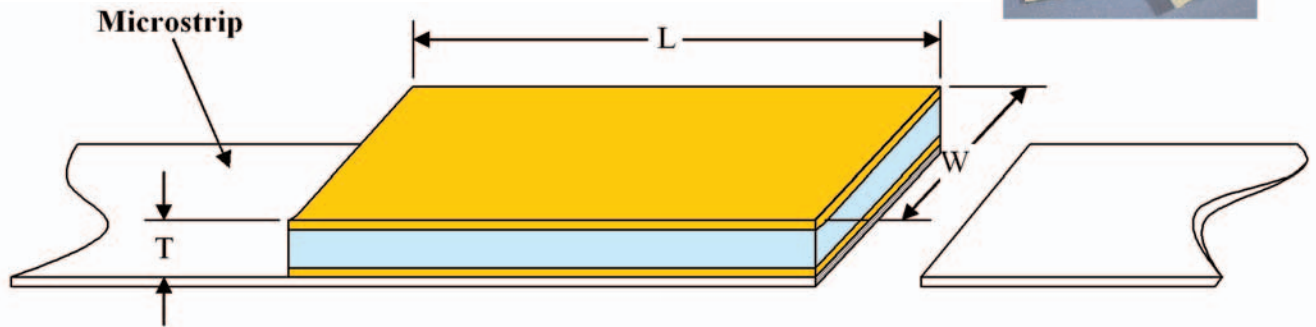


Table of Standard Values (pF)

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	110	1200	1300	1500	1600	1800
2000	220	2400	2700	3000	3300	3600	3900	4300
5300	6500	10,000						

DiCap® Dimensions

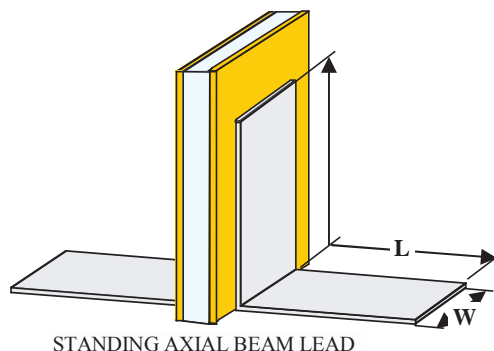
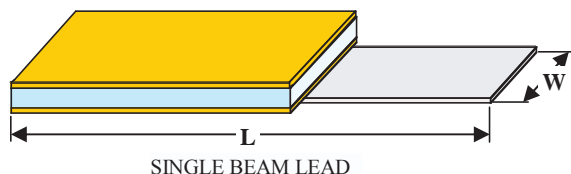
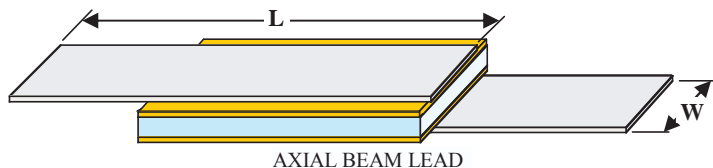
Style	W Width		L Length (Maximum)		T Thickness (50 Volts)		T Thickness (100 Volts)		Standard Capacitance Range
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	pF
D10	.010 + .000 - .003	.254 + .000 - .076	.010	.254	.004 ± .001	.102 ± .025	-	-	.02 - 100
D12	.012 + .002 - .003	.305 + .051 - .076	.015	.381	.004 ± .001	.102 ± .025	-	-	.03 - 200
D15	.015 + .000 - .003	.381 + .000 - .076	.020	.508	.004 ± .001	.102 ± .025	.006 ± .001	.152 ± .025	.04 - 350
D20	.020 + .000 - .003	.508 + .000 - .076	.020	.508	.004 ± .001	.102 ± .025	.006 ± .001	.152 ± .025	.06 - 470
D25	.025 + .000 - .003	.635 + .000 - .076	.030	.762	.004 ± .001	.102 ± .025	.006 ± .001	.152 ± .025	.10 - 800
D30	.030 + .000 - .003	.762 + .000 - .076	.030	.762	.004 ± .001	.102 ± .025	.006 ± .001	.152 ± .025	.15 - 1000
D35	.035 ± .005	.889 ± .127	.040	1.016	.004 ± .001	.102 ± .025	.007 ± .002	.178 ± .051	.20 - 1500
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 - 6500
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

UX thickness only available in .005", .010" and .015"

Leaded DiCap[®] Dimensions						
Style	W Lead Width (Minimum)		W Lead Width (Maximum)		L 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

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



DiCap[®] 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
D15XXKITA5PX D20XXKITA5PX	.015" .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
D25XXKITA5PX D30XXKITA5PX	.025" .030"	Class II, see codes on pg. 5	6.8	K	10	K	20	M	50	M
			8.2	K	15	K	33	M	100	M
D25XXKITA5PX D30XXKITA5PX	.025" .030"	Class I, see codes on pg. 5	.4	B	1.5	C	3.3	D	8.2	K
			.6	C	2.2	C	4.7	D	10	K
			1.0	C	2.7	C	5.6	D	20	K
		Class II, see codes on pg. 5	33	M	50	M	100	M	180	M

DLI reserves the right to substitute values as required.

Customer may request specific cap value and material for sample kit.

50 Volt SLC

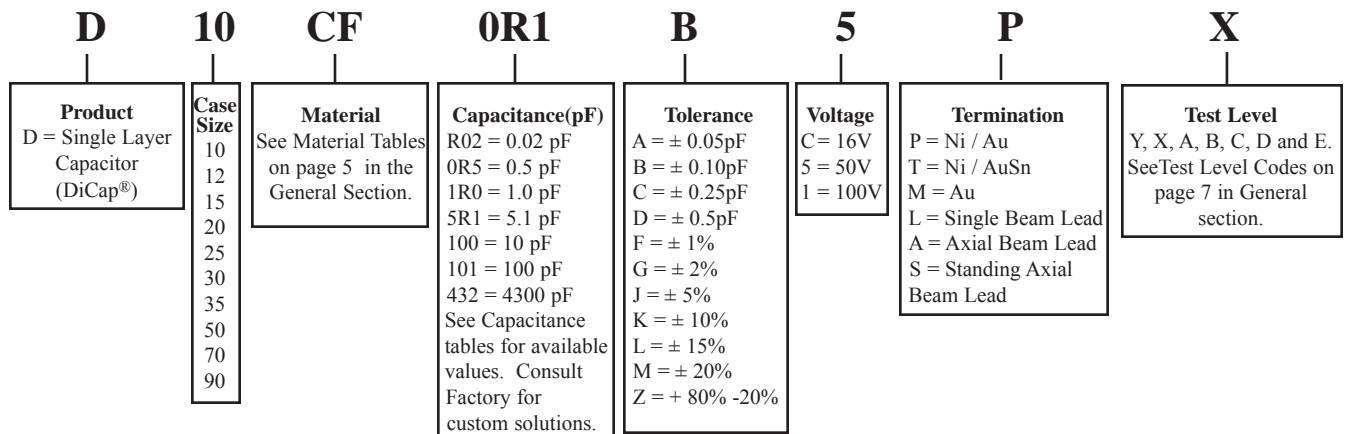
Capacitance Range vs. Case size by Dielectric Material

Style		Class I Dielectric materials														
		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

Style		Class II Materials												
		BF	BD	BG	BC	BE	BL	BJ	BN	BT	BU	BV	UX*	
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	100	
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	200	
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	350	
D20	Min	4.3	6.2	8.2	12	12	18	30	43	43	75	120	200	
	Max	9.1	13	18	27	24	39	68	91	91	180	270	470	
D25	Min	8	12	16	22	22	36	56	82	82	150	240	270	
	Max	18	27	36	51	51	82	130	180	180	330	510	800	
D30	Min	10	16	20	30	30	47	75	100	100	200	300	360	
	Max	22	33	43	62	62	91	160	220	220	390	620	1000	
D35	Min	16	27	33	47	47	75	120	160	160	300	510	560	
	Max	39	62	75	110	110	180	270	390	390	750	1200	1500	

* UX capacitors are 16 volt rated

Part Number Identification



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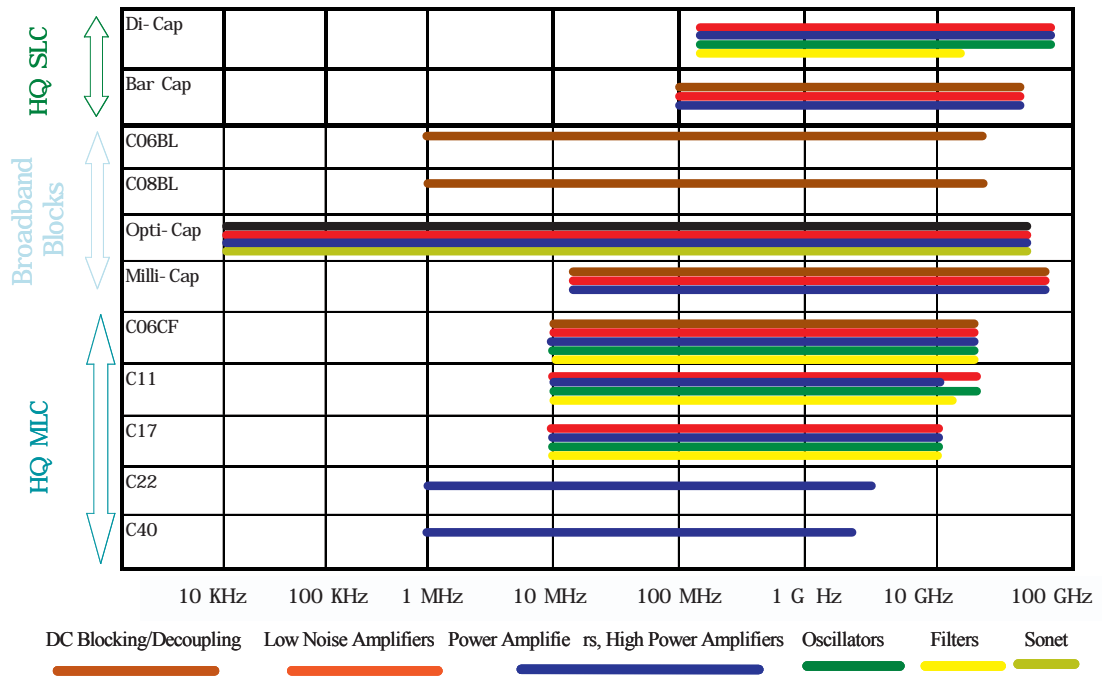
100 Volt SLC

Capacitance Range vs. Case Size By Dielectric Material																
Style		Class I Dielectric Materials														
		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

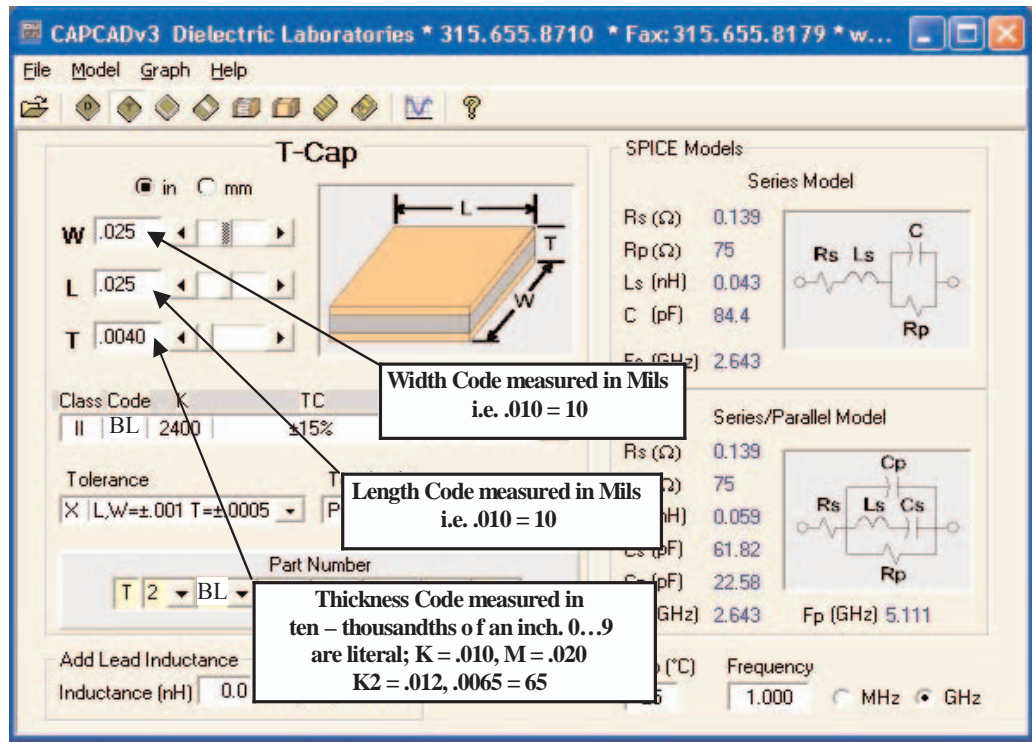
Style		Class II Materials												
		BF	BD	BG	BC	BE	BL	BJ	BN	BT	BU	BV	UX*	
D15	Min	1.8	3.0	3.6	5.6	5.1	8.2	13	18	18	36	56		
	Max	4.3	6.8	9.1	13	13	20	33	47	47	82	130	350	
D20	Min	2.7	4.3	5.6	8	8	13	20	30	30	56	82	200	
	Max	6.2	9	12	18	16	27	47	62	62	120	180	470	
D25	Min	5.6	8	11	16	15	24	39	56	56	100	160	270	
	Max	12	18	24	33	33	51	82	120	120	220	360	800	
D30	Min	6.8	11	15	20	20	33	51	68	68	130	220	360	
	Max	13	22	27	43	39	62	100	130	130	270	430	1000	
D35	Min	9.1	13	18	24	24	39	62	91	91	160	270	560	
	Max	24	39	51	75	75	120	180	270	270	510	750	1500	
D50	Min	22	33	43	62	62	100	160	220	220	390	620	1200	
	Max	56	91	120	160	160	270	430	560	560	1100	1800	3700	
D70	Min	43	68	91	120	120	200	330	430	430	820	1300	2200	
	Max	91	130	180	270	240	390	680	910	910	1600	2700	6500	
D90	Min	51	82	110	150	150	240	390	510	510	1000	1600	3500	
	Max	130	220	270	390	390	620	1000	1300	1300	2700	4300	10,000	

* UX capacitors are 16 volt rated

Capacitor Spectrum Chart



CapCad™



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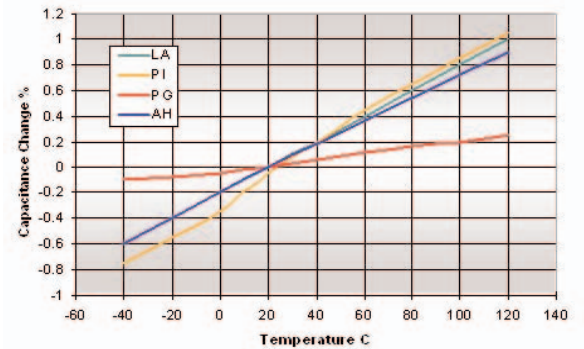
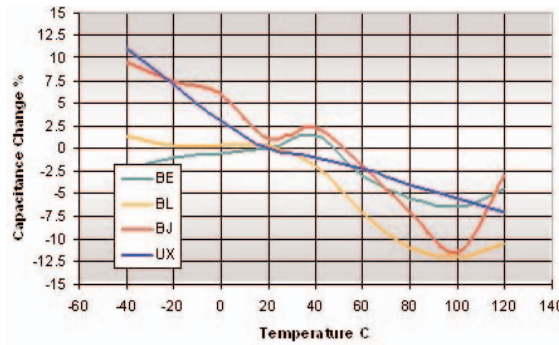
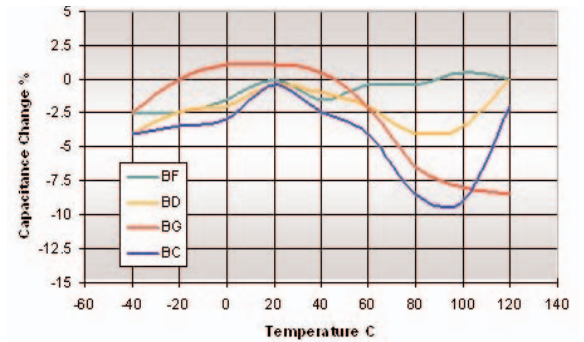
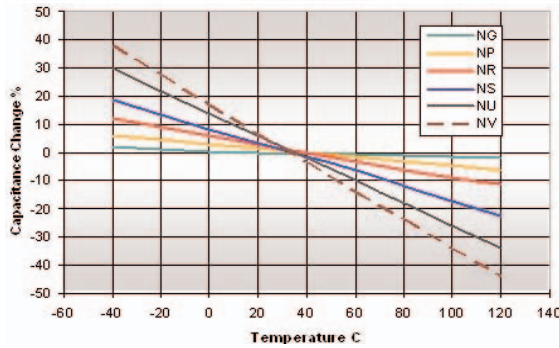
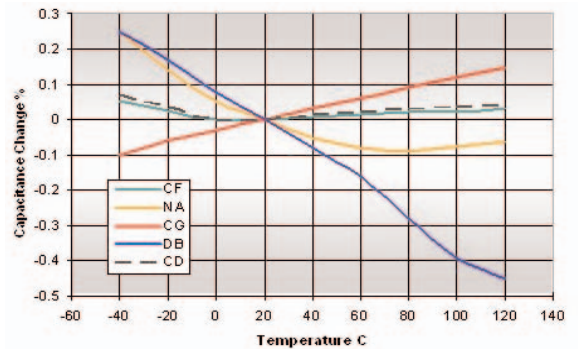
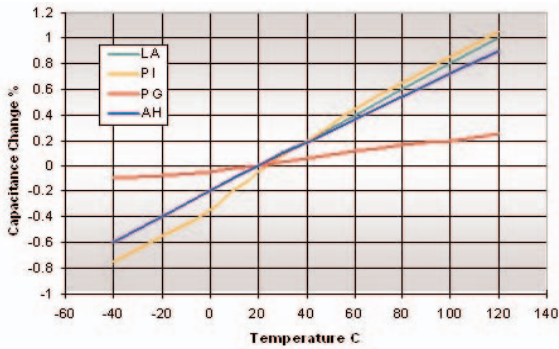
2777 Route 20 East
Cazenovia, New York, USA
13035-9433

Dielectric General Information

DLI Class I Dielectric Materials					
Dielectric Code	Relative ϵ_r @ 1 MHz	Temperature Coefficient -55°C to +125°C (ppm/°C Maximum)	Dissipation Factor @ 1 MHz (% Maximum)	Insulation Resistance (M Ω)	
				@ +25°C	@ +125°C
LA	6.0	P115 \pm 20	0.20	>10 ⁶	>10 ⁵
PI	9.9	P105 \pm 20	0.15	>10 ⁶	>10 ⁵
PG	13	P22 \pm 30	0.15	>10 ⁶	>10 ⁵
AH	20	P90 \pm 20	0.15	>10 ⁶	>10 ⁵
CF	24	0 \pm 15	0.60	>10 ⁶	>10 ⁵
NA	22	N30 \pm 15	0.15	>10 ⁶	>10 ⁵
CD	37	N20 \pm 15	0.15	>10 ⁶	>10 ⁵
NG	43	N220 \pm 60	0.25	>10 ⁶	>10 ⁵
CG	70	0 \pm 30	0.70	>10 ⁶	>10 ⁵
DB	72	N50 \pm 30	0.15	>10 ⁶	>10 ⁵
NP	85	N750 \pm 200	0.50	>10 ⁴	>10 ³
NR	160	N1500 \pm 500	0.25	>10 ⁶	>10 ⁵
NS	300	N2400 \pm 500	0.70	>10 ⁶	>10 ⁵
NU	600	N3700 \pm 1000	1.50	>10 ⁶	>10 ⁵
NV	900	N4700 \pm 1000	1.20	>10 ⁶	>10 ⁵

DLI Class II Dielectric Materials						
Dielectric Code	Relative ϵ_r @ 1 MHz	Temperature Coefficient -55°C to +125°C (% Maximum)		Dissipation Factor @ 1MHz (% Maximum)	Insulation Resistance (M Ω)	
		No Bias, Pre Voltage Conditioning	No Bias, Post Voltage Conditioning		@	@
					+25°C	+125°C
BF	445	\pm 7.5	\pm 10	2.5	>10 ⁴	>10 ²
BD	700	\pm 10	\pm 15	2.5	>10 ⁴	>10 ³
BG	900	\pm 10	\pm 15	2.5	>10 ⁴	>10 ³
BC	1300	\pm 10	\pm 15	2.5	>10 ⁴	>10 ³
BE	1250	\pm 10	\pm 15	2.5	>10 ⁴	>10 ³
BL	2000	\pm 15	\pm 25	2.5	>10 ⁵	>10 ⁴
BJ	3300	\pm 10	\pm 15	3.0	>10 ⁵	>10 ⁴
BN	4500	\pm 15	\pm 25	3.0	>10 ⁵	>10 ⁴
BT	4200	+22/-56 (-55°C to +105°C)	+22/-56 (-55°C to +105°C)	3.0	>10 ⁵	>10 ²
BU	8500	+22/-82 (+10°C to +85°C)	+22/-82 (+10°C to +85°C)	3.0	>10 ⁵	>10 ⁴
BV	13,500	+22/-82 (+10°C to +85°C)	+22/-82 (+10°C to +85°C)	3.0	>10 ⁵	>10 ⁴
UX	30,000	\pm 15%	\pm 25%	2.5	>10 ³	>10 ²

Dielectric Temperature Characteristics



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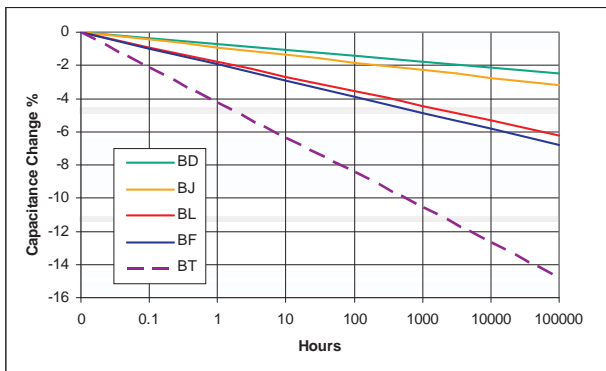
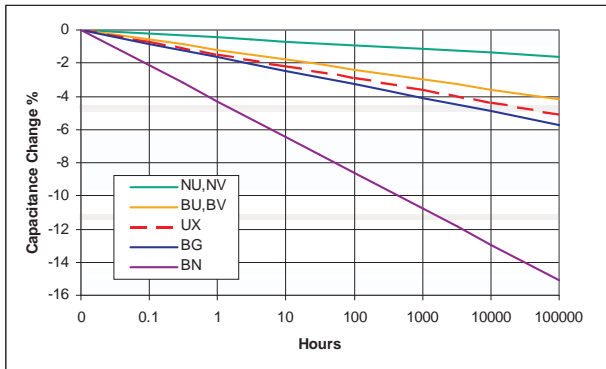
Termination Codes

Code	Description (Layers in order from dielectric material to outermost)		Capacitor Types
	S1	AU-100	
P	1. 300 Angstroms Titanium - Tungsten 2. 50i Inches min. Nickel - Vanadium 3. 100i Inches min. Gold	1. 50i Inches min. Nickel 2. 100i Inches min. Gold	DiCap®, T-Cap®, Bar Cap, Binary Cap, and Gap Cap
T	S2 1. 300 Angstroms Titanium - Tungsten 2. 50i Inches min. Nickel - Vanadium 3. 300i Inches min. Gold - Tin		DiCap®, T-Cap®
M	S5 1. 300 Angstroms Titanium - Tungsten 2. 100i Inches min. Gold		DiCap®, T-Cap®, Bar Cap, Binary Cap, and Gap Cap
B	S1	AU-100	Single border Cap
E	S1	AU-100	Double border Cap
L	Single beam lead. (Standard lead material is silver (Ag) .002" thick. Optional Gold (Au))		DiCap®
A	Axial beam lead. (Standard lead material is silver (Ag) .002" thick. Optional Gold (Au))		DiCap®
S	Standing axial beam lead. (Standard lead material is silver (Ag) .002" thick. Optional Gold (Au))		DiCap®

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Test Level Codes

Dielectric Aging Characteristics



Code	Description
Industrial / Commercial Options	
Y	<ul style="list-style-type: none"> 1% AQL 2 Side Visual Screening.
X	<ul style="list-style-type: none"> 100% 4 Side Visual Screening. 1% AQL for the electrical parameters Capacitance, Dissipation Factor, Insulation Resistance, and Dielectric Withstanding Voltage.

High Reliability Options	
A	MIL-PRF-49464 Group A <ul style="list-style-type: none"> 100%, 100 +0/-4 Hours Voltage Conditioning. 100% Electrical Screening 100% 6 Side Visual Screening.
B	<ul style="list-style-type: none"> Bond Strength. Die Shear Strength. Temperature Coefficient Limits.
B	MIL-PRF-49464 Group B <ul style="list-style-type: none"> MIL-PRF-49464, Group A above Thermal Shock and Immersion. Resistance to Soldering Heat. Moisture Resistance. Low Voltage Humidity. Life.
D	Special agreed upon testing to customers' formal specification. Customer Drawing Required! (May include, but is not limited to, one or more of the following common requests.) <ul style="list-style-type: none"> MIL-PRF-38534 Class H Element Evaluation. MIL-PRF-38534 Class K Element Evaluation. 10(0) Destructive Bond Pull per MIL -STD-883, Method 2011. 10(0) Die Shear per MIL -STD-883, Method 2019. Consult Factory for other alternatives or assistance in specifying custom testing.
E	6 Side Visual Screening per MIL -STD-883, Method 2032.

Environmental & Physical Testing Procedures

Parameter	MIL-STD-202	
	Method	Condition
Thermal Shock	107	A, (modified), -55°C to +125°C.
Immersion	104	B
Moisture Resistance	106	-
Resistance to Solder Heat	210	C, 260°C for 20 seconds.
Life	108	A, 96 Hours @ +125°C.
Barometric Pressure	105	B
Shock, (Specified Pulse)	213	I, 100g's, 6ms.
Vibration, High Frequency	204	G, 30g's peak, 10Hz to 2kHz.
Parameter	MIL-STD-883	
Bond Strength	2011	D, 3 grams minimum with .001" dia wire
Die Shear Strength	2019	Limit per MIL -STD-883, Figure 2019-4.
Temperature Cycling	1010	C
Mechanical Shock	2002	B, Y1,
Constant Acceleration	2001	3,000g's, Y1 direction

Capacitance Tolerance Table

Tolerance Code	Tolerance
A	±.05pF
B	±.10pF
C	±.25pF
D	±.50pF
E	±.5%
F	±1%
G	±2%
H	±3%
I	±4%
J	±5%
K	±10%
L	±15%
M	±20%
X	GMV
V	+100%, -0%
Z	+80%, -20%
S	Special