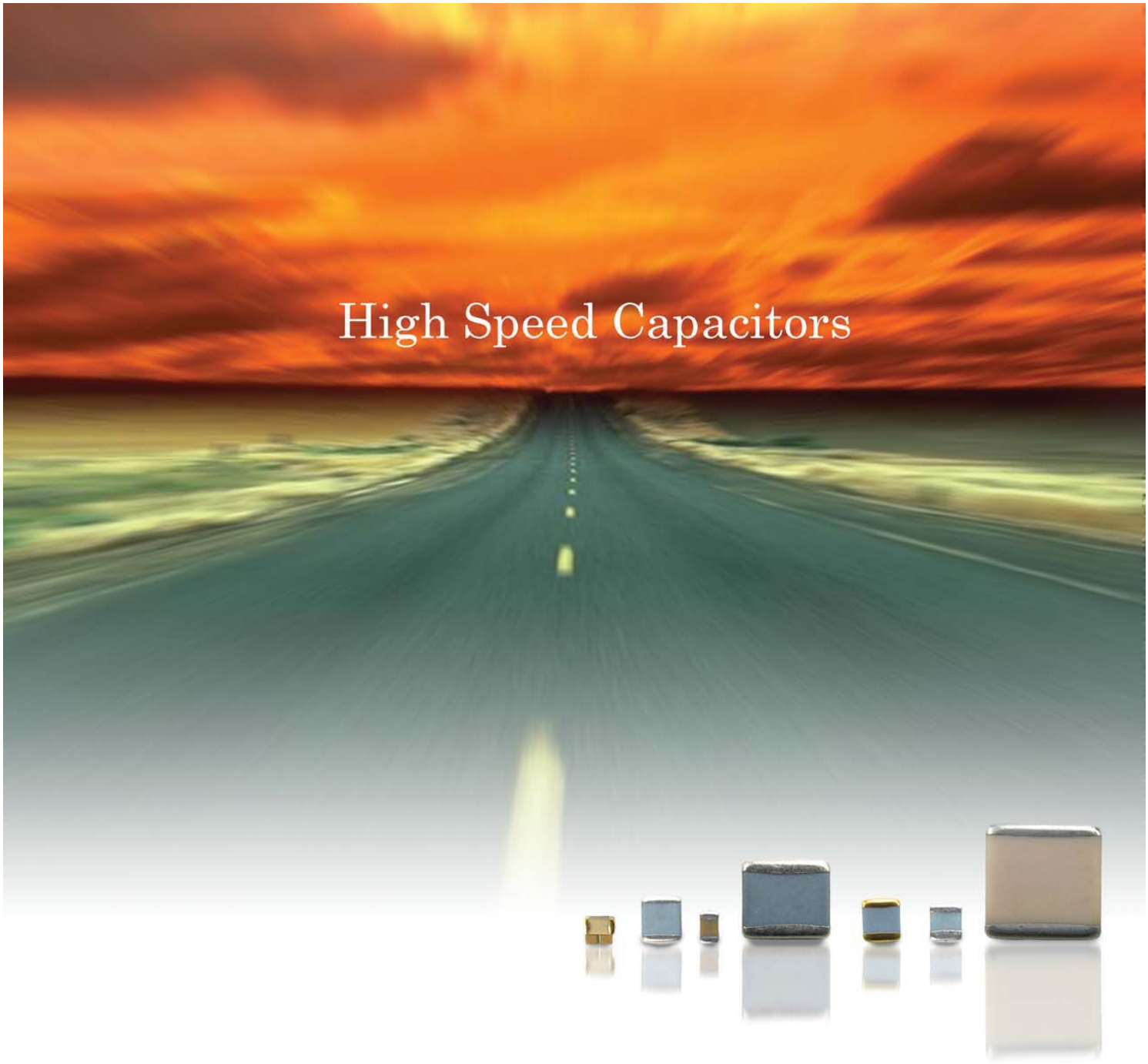


High Q Multi-Layer and Broadband Blocking Capacitors

www.dilabs.com

DIELECTRIC LABORATORIES
A DOVER COMPANY

February 2006

Dielectric

Dielectric Laboratories Inc.
2777 Route 20 East
Cazenovia, New York
13035-9433

phone 315.655.8710
fax 315.655.0445
sales@dilabs.com
or
europesales@dilabs.com
or
chinasales@dilabs.com
or
asiasales@dilabs.com

web www.dilabs.com

QUALITY SYSTEM
ISO 9001:2000
CERTIFIED

ENVIRONMENTAL
SYSTEM ISO 14001:2000
CERTIFIED

DIELECTRIC LABORATORIES
A DOVER COMPANY

Company Overview

Dielectric Laboratories Inc. (DLI) is your global partner for application specific microwave and millimeter-wave components serving customers in fiber-optic, wireless, medical, transportation, semiconductor, avionics and military markets. With 30 years of experience, you can turn to DLI with confidence for your high frequency Single-Layer Capacitor, Multi-Layer Capacitor, Resonator, Filter and custom thin film component solutions.

Our products include a broad range of High Q Multi-Layer Capacitors and a unique range of broadband blocking capacitors. These products can be customized to meet specific design targets - please discuss your needs with our Sales and Applications Team.

We are committed to serving you and we thank you for your business!

RoHS Compliance Statement

Dielectric Laboratories, Inc. is a leading supplier to the electronic components market and is fully committed to offering products supporting Restriction of Hazardous Substances (RoHS) directive 2002/95/E. All of our dielectric formulations are RoHS compliant and we offer a broad range of capacitors with RoHS compliant terminations. DLI complies with the requirements of the individual customer and will maintain product offerings that meet the demands of our industry.

Quality and Environmental Policy

DLI's reputation for quality and environmental responsibility is based on a commitment to not only meet our customer's requirements, but to exceed their expectations. The entire organization, beginning with top management, strives to achieve excellence in designing, manufacturing and delivering capacitors, build-to-print thin film products and proprietary thin film components for high frequency applications, while maintaining safe and healthy working conditions. Furthermore, DLI commits to achieve these goals in an environmentally responsible manner through our commitment to comply with environmental regulations and to implement pollution prevention initiatives. DLI strives to continually improve the effectiveness of our Quality and Environmental Management System through the establishment and monitoring of objectives and targets.

Laboratories

High Q Multi-Layer and Broadband Blocking Capacitors

C04	C06	C08	C11	C17
0.040" x 0.020" 0.1-10pF Ultra Low ESR 200V Max Filters, Synthesizers VCOs	0.060" x 0.030" 0.1-100pF Max WVDC 250V Amplifiers Filters	0.080" x 0.050" 0.1-100pF Ultra Low ESR 1000V Max Power Amps	0.055" x 0.055" 0.1-100pF Max WVDC 250V Power Amps	0.110" x 0.110" 0.1-1000pF Max WVDC 1000V Power Amps
~30GHz	~20GHz	~10GHz	~10GHz	~10GHz
Page 4	Pages 4, 10 &11	Pages 5 & 9	Pages 5, 12 & 13	Pages 14 & 15

C22	C40	Broadband DC Blocks	Opti-Cap®	Milli-Cap®
0.220" x 0.245" 1-2700pF Max WVDC 2500V MRI RF-High Power	0.380" x 0.380" 1-5100pF Max WVDC 7200V MRI RF-High Power	C04/C06/C08 Broadband DC Blocks. 0402, 0603 and 0805 EIA case size. 1MHz-20GHz for C08 (2400pF) 2MHz-30GHz for C06 (850pF) 5MHz - 30GHz for C04 (120 pF)	0402/0603 Ultra broadband capacitor. Resonant free DC blocking from 10kHz to 40 GHz	P21/P42/P02/P62 Surface Mount (SMD) Millimeter-Wave Capacitor. Ideal for Matching filters & SONET applications
~3GHz	~200MHz			20MHz-40GHz
Pages 16 and 17	Pages 18 and 19	Page 20	Page 21	Page 22

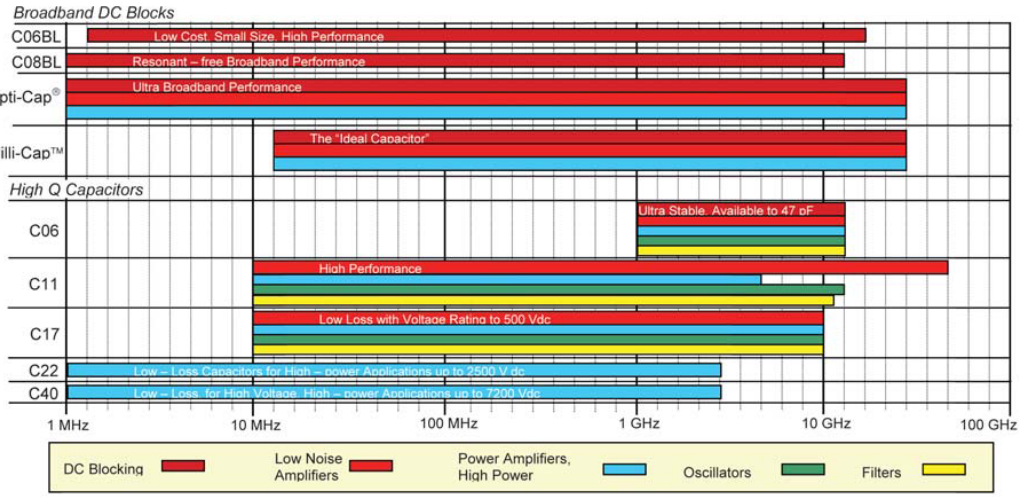


Table of Contents

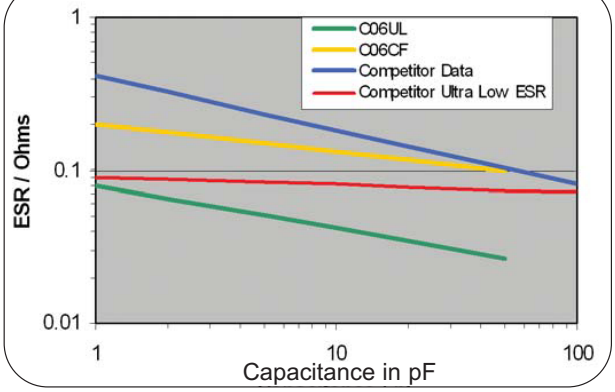
DIELECTRIC LABORATORIES
A DOVER COMPANY

What's New

In our continuing efforts to provide our customers around the world with the products that make their products better, we have recently introduced several new material systems and case sizes to our already comprehensive product lines.

Ultra-Low ESR Material System - UL

A newly crafted, world standard for high Q capacitors, the UL material system is available in C04 (0402), C06 (0603), C08 (0805), C11 (0505), and C17 (1111) case sizes. As the 1GHz data in the graph below indicates, the UL system offers the design engineer options not seen before. UL not only provides ESR advantage when compared to DLI's workhorse materials systems CF and AH, but also when compared to competitors' standard and "ultra-low ESR" offerings.

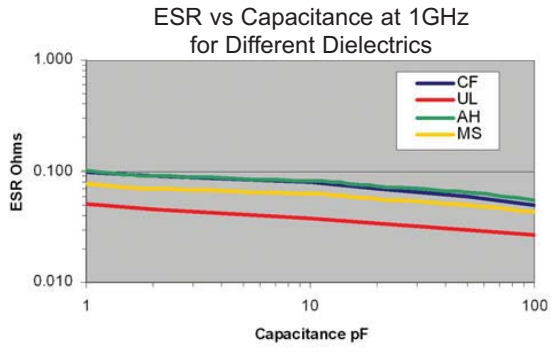


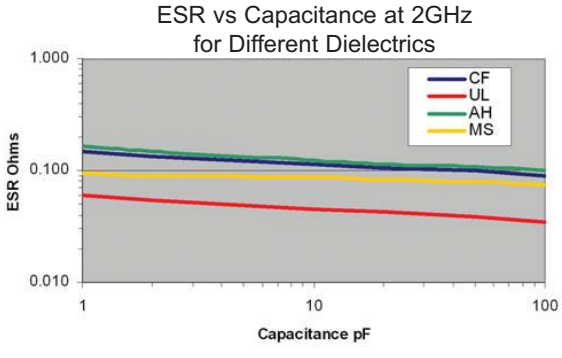
New High Q Material System - MS

A very stable, higher Q material system that provides excellent, low loss performance in commercial systems below 3 GHz range is available in C06 (0603), C08 (0805), C11 (0505), and C17 (1111) case sizes. This material system is suitable for many applications where economical, high performance is required. See the graph below that compares C11 ESR results for the MS material system to DLI's other material systems at 1 and 2 GHz. The MS system is available in extended capacitance value ranges (see tables on appropriate case size pages).

Comparison of Material Systems

Material System	Temperature Coefficient -55°C to +125°C (ppm/°C Maximum)	Performance and Applications
AH	P90 ± 20	Positive TC, traditional porcelain ceramic, high power capability
CF	0 ± 15	Ultra-stable porcelain ceramic, high power capability
UL	0 ± 30	Ultra-low ESR ceramic
MS	0 ± 30	Competitive high performance ceramic
BL	± 15%	Broadband Blocking





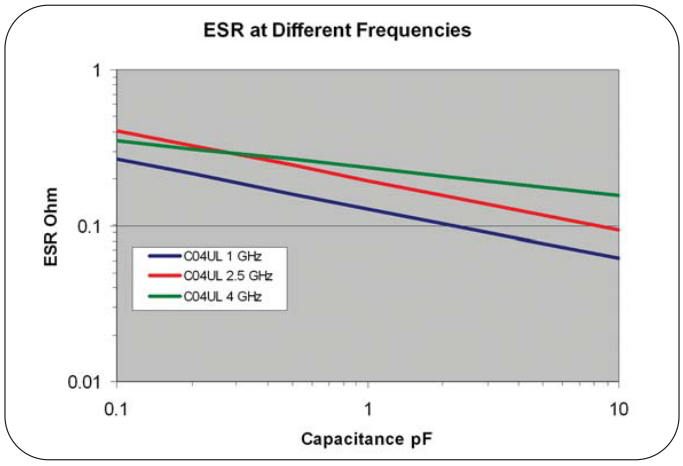
Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

C04 0402 Case Size

DLI has added an 0402 case size, high Q product line available in the UL material system. C04 products are only offered in the RoHS compliant 'S' termination system (see table on page 6).

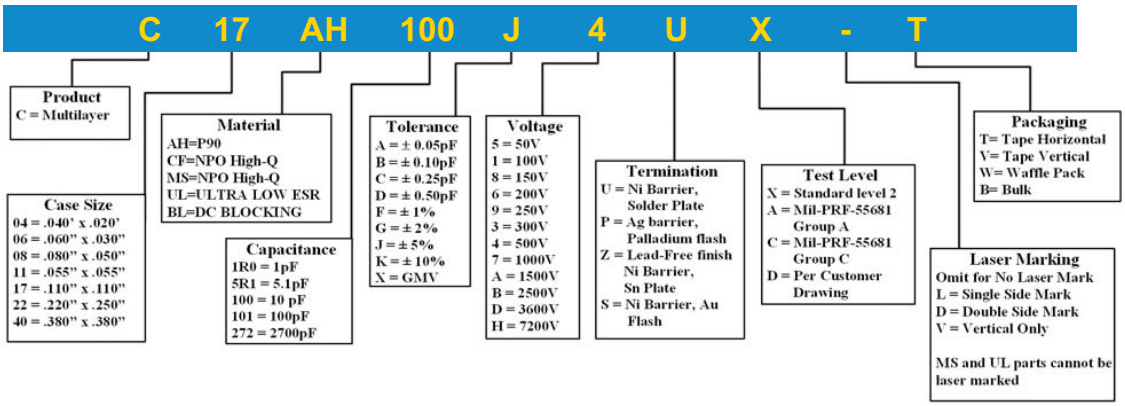
CAP CODE	CAP (pF)	Cap Tol.	CAP CODE	CAP (pF)	Cap Tol.
0R1	0.1		1R9	1.9	
0R2	**0.2**		**2R0**	**2.0**	
R25	0.25		**2R1**	**2.1**	
0R3	**0.3**		**2R2**	**2.2**	
R35	0.35		2R4	2.4	
0R4	**0.4**		**2R7**	**2.7**	
R45	0.45		**3R0**	**3.0**	
0R5	**0.5**		**3R3**	**3.3**	A
0R6	**0.6**	A	3R6	3.6	B
0R7	0.7	B	3R9	3.9	C
0R8	0.8	C	4R3	4.3	D
0R9	**0.9**	D	**4R7**	**4.7**	
1R0	**1.0**		5R1	5.1	
1R2	**1.2**		**5R6**	**5.6**	
1R3	1.3		**6R8**	**6.8**	
1R4	1.4		7R5	7.5	
1R5	**1.5**		**8R2**	**8.2**	
1R6	1.6		9R1	9.1	
1R7	1.7		**100**	**10**	FGJK
1R8	**1.8**				



C08 0805 Case Size

DLI has added an 0805 case size, high Q product line to its highly successful C08 Broadband Blocking capacitors. This case size is available in UL and MS systems and their RoHS compliant termination systems. For more information about the new C08 high Q product line, see page 9.

Multilayer Capacitor Part Number Identification



Capacitor Case Size Code

Case Size Code	Foot Print (l x w)	Guide
04	0402 EIA Case Size	High Q Capacitor
06	0603 EIA Case Size	High Q Capacitor, Broadband DC Block
08	0805 EIA Case Size	High Q Capacitor, Broadband DC Block
11	.055" x .055" (1.39mm x 1.39mm)	High Q Capacitor
17	.110" x .110" (2.79mm x 2.79mm)	High Q and Power RF & Microwave
22	.220" x .245" (5.59mm x 6.22mm)	High Voltage, High Power Capacitor
40	.380" x .380" (9.65mm x 9.65mm)	High Voltage, High Power Capacitor

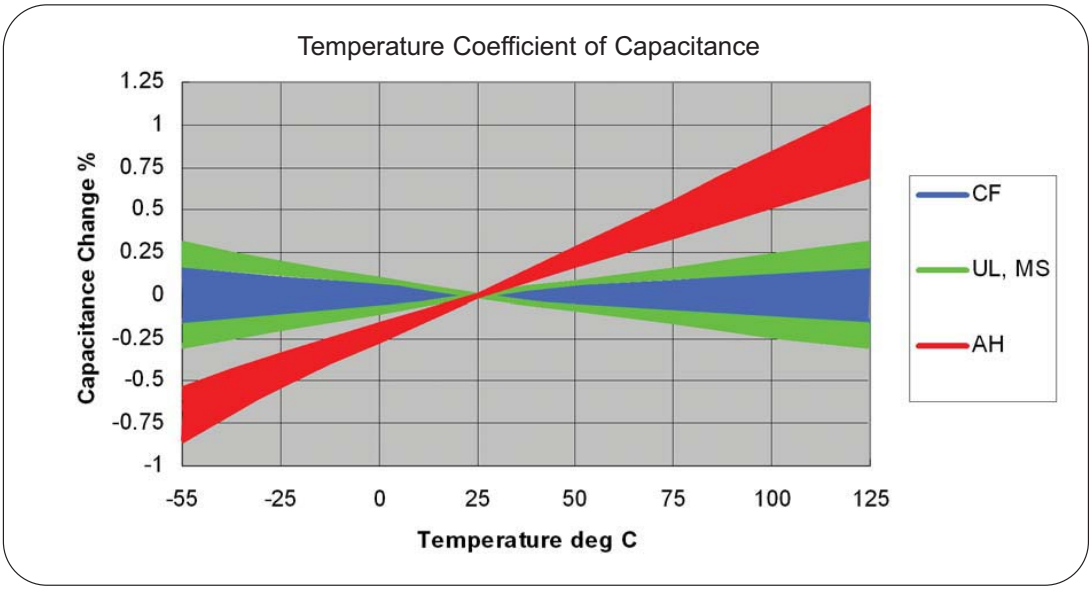
General Information

DLI Multi-Layer Dielectric Materials

Dielectric Code	Relative Εr @ 1 MHz	Temperature Coefficient -55°C to +125°C (ppm/°C Maximum)	Dissipation Factor @ 1 MHz (% Maximum)	Insulation Resistance (MΩ)	
				@ +25°C	@ +125°C
AH	20	P90 ± 20	0.05	$>10^6$	$>10^5$
CF	24	0 ± 15	0.05	$>10^6$	$>10^5$
UL	14	0 ± 30	0.05	$>10^5$	$>10^4$
MS	22	0 ± 30	0.05	$>10^5$	$>10^4$
* BL	2050	± 15%	2.50	$>10^4$	$>10^3$

All test conditions are per MIL-PRF-55681 revision A.
UL material is new Ultra Low ESR Material.

Dissipation Factor applies to values of 4.7pF or greater.
*Broadband Blocks only.



Termination Systems

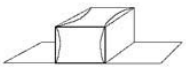
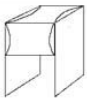
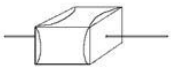
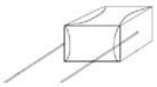
Configuration	Part Number Code	Typical Metallization	Application	Plated Layer
	U	• Ag Termination • Ni Barrier Layer • Sn-Pb Plated Solder	• High Volume • Solder Assembly • SMD-SMT • Hand Soldering	Ni – 100-250 µ" Sn-Pb – 100-150 µ" Sn / Pb, 90 / 10 (solder melting temp. 213°C)
	Z RoHS Compliant	• Ag Termination • Ni Barrier Layer • Sn Plated Solder • Lead Free Finish	• High Volume • Solder Assembly • SMD-SMT • Hand Soldering	Ni – 200-250 µ" Sn – 200 µ" (solder melting temp. 232°C)
	S RoHS Compliant	• Ag Termination • Ni Barrier Layer • Gold Flash	• Epoxy Mounting • Standard for 0402 • Specialty Solder Applications	Ni – 100-250 µ" Au – 5 µ"
	P RoHS Compliant	• AgPd Termination	• All non-Magnetic Applications	Not Plated

Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

General Information

Lead Termination Codes

Axial Ribbon	Radial Ribbon	Center Lead	Axial Wire Lead	Radial Wire Lead
Code A	Code B	Code C	Code E	Code F
				

Test Level Codes

Test code	Inspection Description (see individual part pages for additional detail)
X	100% IR, 100 % AQL visual, 100% Electrical (DWV, Cap, DF)
A	Group A testing per MIL – PRF – 55681
C	Group C testing per MIL – PRF – 55681
D	Customer Defined

Packaging Configurations

Case Style	Size L x W	7"Reel, 8mm Tape		7"Reel, 16mm Tape	13"Reel, 16mm Tape		2"x 2" Waffle Pack
		Horizontal Orientation*	Vertical Orientation	Horizontal Orientation	Horizontal Orientation	Vertical Orientation	
C04	0.040" x 0.020"	5000					108
C06	0.060" x 0.030"	4000					108
C08	0.080" x 0.050"	4000 (3000)	3100				108
C11	0.055" x 0.055"	3500 (3000)	3100				108
C17	0.110" x 0.110"	2350	750				49
C22	0.220" x 0.250"	500					
C40	0.380" x 0.380"			250	1300		

* Data shown is for all UL, CF, AH, and BL horizontal mounted capacitors. Quantities shown in parentheses ( ) are reel amounts for horizontal mounted MS capacitors
A minimum 500 piece order is typically required for tape and reel packaging.
Standard Packaging is bulk in plastic bags.
Consult factory for custom packaging solutions.

Attachment Methods

All parts are compatible with industry standard soldering methods such as IR reflow, vapor phase reflow, convection, and wave soldering. Please see DLI application note **"Recommended Solder Attachment Techniques for Multilayer Chip and Pre Tinned Capacitors"** located on our Web site www.dilabs.com.

Cleaning

Chip capacitors withstand commonly used cleaning agents, such as water, alcohol, and degreaser solvents. After soldering, it is important that no flux is trapped under the chip - flux residue degrades Q, insulation resistance and reliability.

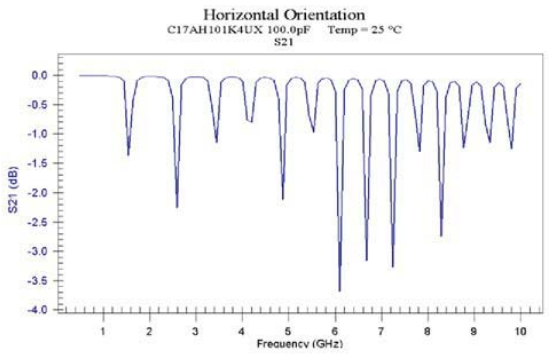
Shelf Life

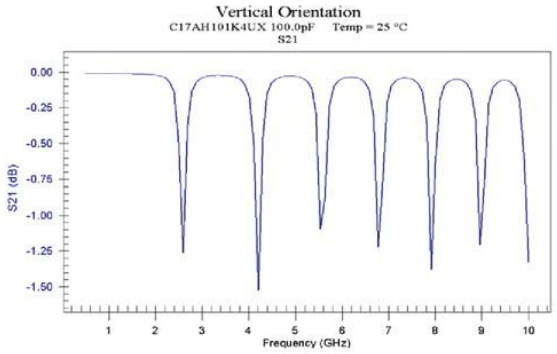
Capacitors are solderable for a minimum of one year from the date of shipment if properly stored in the original packaging. Dry nitrogen storage is preferable for longer periods.

General Information

MLC Orientation

The orientation of the MLC relative to the ground plane affects the devices' impedance. When the internal electrodes are parallel to the ground plane (Horizontal mounting) the impedance of the MLC resembles a folded transmission line driven from one end. The left graph below shows the modeled insertion loss and measured parallel resonances of C17AH101K4UX with horizontal mounting. When the internal electrodes are perpendicular to the ground plane (vertical mounting) the MLC impedance resembles a folded transmission line driven from the center reducing resonance effects. C11 and C17 are available with vertical or horizontal orientation in tape and reel packaging. Modeling can be done in CapCad®. DLI capacitor models can be found in many industry standard software packages.





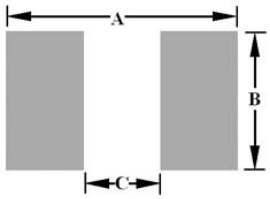
Recommended PWB Land Patterns

Printed Wire Board land pattern design for chip components is critical to ensure a reliable solder fillet, and to reduce nuisance type manufacturing problems such as component swimming and tombstoning. The land pattern suggested can be used for reflow and wave solder operations as noted. Land patterns constructed with these dimensions will yield optimized solder fillet formation and thus reduce the possibility of early failure.[1]

A = (Max Length) + 0.030" (.762mm) *
B = (Max Width) + 0.010" (.254mm)
C = (Min Length) – 2 (Solder Band)**

* Add 0.030" for Wave Solder operations.
** "C" to be no less than 0.020", change "A" to (Max Length) + 0.020".

[1] Frances Classon, James Root, Martin Marietta Orlando Aerospace, "Electronics Packaging and Interconnection Handbook";



Recommended Pad Spacing

Case Style	Internal Electrode Orientation	Reflow Soldering			Wave Soldering		
		A	B	C	A	B	C
06	Horizontal	.096	.046	.020	.126	.046	.020
	Vertical	Not Recommended			Not Recommended		
11	Horizontal	.100	.075	.020	.130	.075	.020
	Vertical	.100	.060	.020	.130	.060	.020
17	Horizontal	.160	.135	.050	.190	.135	.050
	Vertical	.160	.110	.050	.190	.110	.050
22	Horizontal	.270	.275	.110	.300	.275	.110
	Vertical	Not Recommended			Not Recommended		
40	Horizontal	.425	.400	.290	.455	.400	.290
	Vertical	Not Recommended			Not Recommended		

Temperature Precautions

The rate of heating and cooling must be controlled to preclude thermal cracking of ceramic capacitors. DLI recommends three methods of reflow solder attachment: IR Reflow, Vapor Phase Reflow, and Hot Air Convection Reflow. Ideal Profiles for any of the methods should not exceed a ramp up of approximately 200°C/minute. In all applications, DLI recommends that the chip user employ a pre-heat temperature to within 100°C of the working temperature of the user's machine. Avoid forced cooling or contact with heat sinks, such as conveyor belts, metal tables or cleaning solutions, before the chips reach ambient temperatures.

Dielectric Laboratories

DIELECTRIC LABORATORIES A DOVER COMPANY

C08 0805

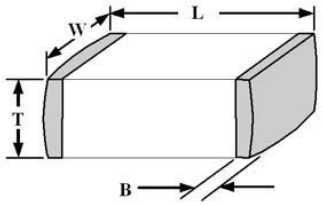
FUNCTIONAL APPLICATIONS

DC Blocking
Amplifier Matching Networks
VCO Frequency Stabilization
Filtering, Diplexers, Antenna Matching
High RF Power Circuits

BENEFITS

High Q
Stable TC
EIA 0805 Case Size
SMD Compatibility
-55 to +125 °C Operating Range

Mechanical Specifications



Product Code	Body Dimensions			Termination Code, Band Dimension and Material		
	Length (L)	Width (W)	Thickness (T)	Code	Band (B)	Material
C08	.080" ± .012" (2.0± 0.3)	.050" ± .008" (1.27± 0.2)	max .051" (max 1.3)	Z	.0.005-0.03" (0.13 - 0.75)	Ni Barrier, Tin Plate
				S		Ni Barrier, Au Flash
				P		AgPd Termination

Laser Markings available in Horizontal orientation only, Code L.
The MS material system is available in Z termination only.

Capacitance Table

C08 High Q Capacitance Values

CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC
0R1	0.1	A B C D	250V Code 9	1R7	1.7	A B C D	250V Code 9	8R2	8.2	ABCD	250V Code 9	470	47	F G J K M	250V Code 9
0R2	0.2			1R8	1.8			9R1	9.1			510	51		
R25	0.25			1R9	1.9			100	10	F G J K M		560	56		
0R3	0.3			2R0	2.0			110	11			620	62		
R35	0.35			2R1	2.1			120	12			680	68		
0R4	0.4			2R2	2.2			130	13			750	75		
R45	0.45			2R4	2.4			150	15			820	82		
0R5	0.5			2R7	2.7			160	16			910	91		
0R6	0.6			3R0	3.0			180	18			101	100		
0R7	0.7			3R3	3.3			200	20			121	120		
0R8	0.8			3R6	3.6			220	22			151	150		
0R9	0.9			3R9	3.9			240	24			181	180		150V Code 8
1R0	1.0			4R3	4.3			270	27			221	220		
1R2	1.2			4R7	4.7			300	30			271	270		100V Code 1
1R3	1.3			5R1	5.1			330	33			331	330		
1R4	1.4			5R6	5.6			360	36			391	390		50V Code 5
1R5	1.5			6R8	6.8			390	39			471	470		
1R6	1.6			7R5	7.5			430	43						

Cap values in **blue** are available in UL only, in **red** available in MS only.

C08 Designer and Engineering Kits

Values for the C08 Designer Kits and the C08 Engineering Kit are the same as the C06 Designer Kits and the C06 Engineering Kit. Refer to tables on page 11.

Electrical Specifications

Dielectric Material Code	Temperature Coefficient (ppm/°C Maximum)	Dissipation Factor (% @ 1MHz Maximum)	Dielectric Withstanding Voltage		Insulation Resistance (MΩ Minimum)		Aging Piezoelectric	Piezoelctric Effects	Dielectric Absorption
			Voltage Rating (Volts)	DWV (Volts)	@ +25°C	@ +125°C			
UL	0 ± 30	0.05	250	625	10^5	10^4	None	None	None
MS	0 ± 30	0.05	250 150 100 50	625 375 250 125	10^5	10^4			

Tolerance Codes

Code	Tolerance
A	± 0.05pF
B	± 0.10pF
C	± 0.25pF
F	± 1%
G	± 2%
J	± 5%
K	± 10%

Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

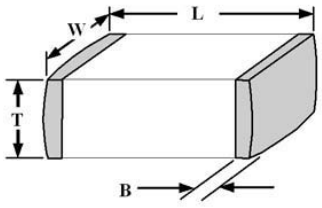
C06 0603

FUNCTIONAL APPLICATIONS

DC Blocking
Amplifier Matching Networks
VCO Frequency Stabilization
Filtering and Diplexers
Antenna Matching

BENEFITS

Stable TC
EIA 0603 Case Size
SMD Compatibility
-55 to +125 ^{0}C Operating Range



Mechanical Specifications

Product Code	Body Dimensions			Termination Code, Band Dimension and Material		
	Length (L)	Width (W)	Thickness (T)	Code	Band (B)	Material
C06	.063" ± .009" (1.6 ± 0.23)	.031" ± .008" (0.80 ± 0.20)	.031"Max (0.80) Max.	Z	.010" + .010" - .005" (.254 + .254 - .127)	Ni Barrier, Tin Plate
				S		Ni Barrier, Au Flash
				P		AgPd Termination
				U		Ni Barrier, Solder Plate

Laser Markings available in Horizontal orientation only, Code L.
The MS material system is available in Z termination only.
U termination is not available in the UL material system.

Capacitance Table

C06 Capacitance Values															
CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC
0R1	0.1	A B C D	250V Code 9	0R9	0.9	A B C D	250V Code 9	3R9	3.9	A B C D	250V Code 9	240	24	F G J K	250V* Code 9
R15	0.15			R95	0.95			4R3	4.3			270	27		
0R2	0.2			1R0	1.0			4R7	4.7			300	30		
R25	0.25			1R1	1.1			5R1	5.1			330	33		
0R3	0.3			1R2	1.2			5R6	5.6			360	36		
R35	0.35			1R3	1.3			6R2	6.2			390	39		
0R4	0.4			1R5	1.5			6R8	6.8			430	43		
R45	0.45			1R6	1.6			7R5	7.5			470	47		
0R5	0.5			1R8	1.8			8R2	8.2			510	51		100V Code 1
R55	0.55			2R0	2.0			9R1	9.1			560	56		
0R6	0.6			2R2	2.2			100	10	F G J K		620	62		
R65	0.65			2R4	2.4			120	12			680	68		
0R7	0.7			2R7	2.7			150	15			750	75		50V Code 5
R75	0.75			3R0	3.0			180	18			820	82		
0R8	0.8			3R3	3.3			200	20			101	100		
R85	0.85			3R6	3.6			220	22						

*MS capacitors in the cap range 36pF to 47pF are 150V rated, Code 8.
Cap values in **red** are available in MS only, in **blue** available in UL, CF, and AH only.

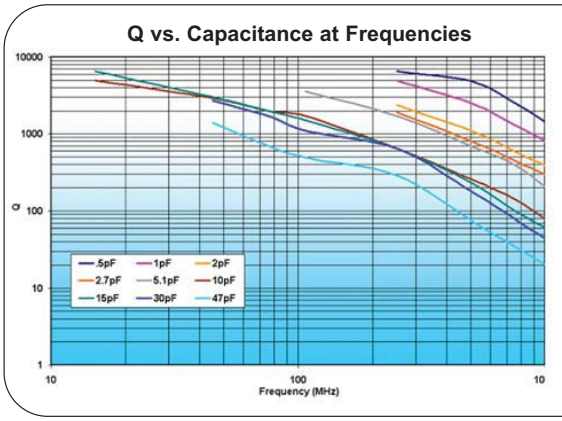
Electrical Specifications

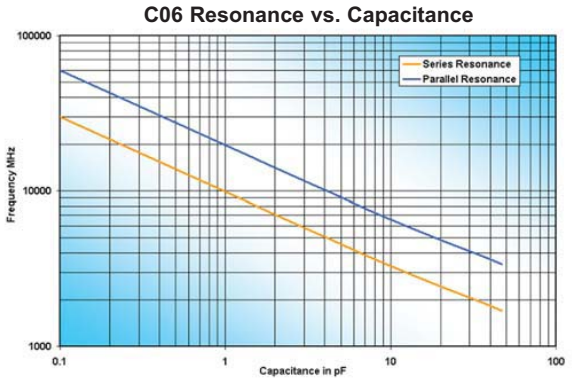
Dielectric Material Code	Temperature Coefficient (ppm/°C Maximum)	Dissipation Factor (% @ 1MHz Maximum)	Dielectric Withstanding Voltage		Insulation Resistance (MΩ Minimum)		Aging	Piezoelectric Effects	Dielectric Absorption
			Voltage Rating (Volts)	DWV (Volts)	@ +25°C	@ +125°C			
CF	0 ± 15	0.05	250	625	10^{6}	10^{5}	None	None	None
UL	0 ± 30	0.05	250	625	10^{5}	10^{4}			
MS	0 ± 30	0.05	250 100 50	625 250 125	10^{5}	10^{4}			

Tolerance Codes	
Code	Tolerance
A	± 0.05pF
B	± 0.10pF
C	± 0.25pF
F	± 1%
G	± 2%
J	± 5%
K	± 10%

Dielectric Laboratories

DIELECTRIC LABORATORIES A DOVER COMPANY





C06 ENGINEERING KIT

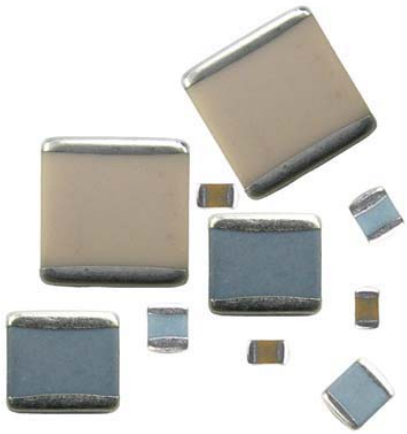
20 Pieces Each of 23 Values

CODE	CAP
0R3	0.3pF
0R5	0.5pF
1R0	1.0pF
1R2	1.2pF
1R5	1.5pF
1R8	1.8pF
2R0	2.0pF
2R2	2.2pF
2R7	2.7pF
3R3	3.3pF
3R9	3.9pF
4R7	4.7pF
5R6	5.6pF
6R8	6.8pF
100	10pF
120	12pF
150	15pF
180	18pF
220	22pF
270	27pF
330	33pF
470	47pF
560	56pF
680	68pF
820	82pF
101	100pF
C08BLBB1X5UX	2400pF Block

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

C06 DESIGNER KIT

KIT C	KIT D	KIT E
0R1	1R2	6R8
0R2	1R5	8R2
0R3	1R8	9R1
0R4	2R2	100
0R5	2R7	120
0R6	3R3	150
0R7	3R9	220
0R8	4R7	270
0R9	5R1	360
1R0	5R6	470



Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

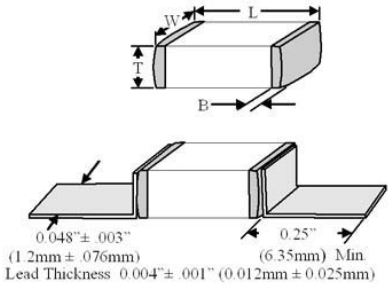
C11 0505

FUNCTIONAL APPLICATIONS

Impedance Matching
D.C. Blocking
Bypass
Coupling
Tuning and Feedback

BENEFITS

Oscillators
Timing Circuits
Filters
RF Power Amplifiers and Delay Lines
Stable TC, -55 to +125 °C Operating Range



Mechanical Specification

Product Code	Body Dimensions			Termination Code, Band Dimension and Material		
	Length (L)	Width (W)	Thickness (T)	Code	Band (B)	Material
C11	.055" + .015" - .010" (1.40 + .381 - .254)	.055" ± .015" (1.40 ± .381)	.050" Max (1.27) Max.	Z	.005" - .020" (0.130 - .050)	Ni Barrier, Tin Plate
				S		Ni Barrier, Au Flash
				P		AgPd Termination
				U		Ni Barrier, Solder Plate

Laser marking available in Horizontal and Vertical orientation. Codes L, V, D.
The MS material system is available in Z termination only.
U termination is not available in the UL material system.

Capacitance Table

C11 High Q Capacitance Values

CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol.	Rated WVDC
0R1	0.1	A B C D	250V Code 9	1R5	1.5	A B C D	250V Code 9	5R6	5.6	A B C D	250V Code 9	300	30	F G J K M	250V* Code 9
0R2	0.2			1R6	1.6			6R2	6.2			330	33		
R25	0.25			1R7	1.7			6R8	6.8			360	36		
0R3	0.3			1R8	1.8			7R5	7.5			390	39		
R35	0.35			1R9	1.9			8R2	8.2			430	43		
0R4	0.4			2R0	2.0			9R1	9.1			470	47		
R45	0.45			2R1	2.1			100	10	F G J K M		510	51		
0R5	0.5			2R2	2.2			110	11			560	56		
0R6	0.6			2R4	2.4			120	12			620	62		200V** Code 6
0R7	0.7			2R7	2.7			130	13			680	68		
0R8	0.8			3R0	3.0			150	15			750	75		
0R9	0.9			3R3	3.3			160	16			820	82		
1R0	1.0			3R6	3.6			180	18			910	91		
1R1	1.1			3R9	3.9			200	20			101	100		
1R2	1.2			4R3	4.3			220	22			121	120		100V Code 1
1R3	1.3			4R7	4.7			240	24			151	150		
1R4	1.4			5R1	5.1			270	27			181	180		50V Code 5
												221	220		

*AH, CF, and UL capacitors in the cap range from 33pF to 56pF are 200V rated, Code 6.
Cap values shown in **red** are available in MS only, in **blue** are available in AH, CF, and UL only.
**MS capacitors in the range from 62pF to 100pF are 150V rated, Code 8.

Electrical Specifications

Dielectric Material Code	Temperature Coefficient (ppm/°C Maximum)	Dissipation Factor (% @ 1MHz Maximum)	Dielectric Withstanding Voltage		Insulation Resistance (MΩ Minimum)		Aging	Piezoelectric Effects	Dielectric Absorption
			Voltage Rating (Volts)	DWV (Volts)	@ +25°C	@ +125°C			
AH	P90 ± 20	0.05	200	500	10^6	10^5	None	None	None
			250	625					
CF	0 ± 15	0.05	200	500	10^6	10^5			
			250	625					
UL	0 ± 30	0.05	200	500	10^5	10^4			
			250	625					
MS	0 ± 30	0.05	250, 200, 100, 50	625, 500,250, 125	10^5	10^4			

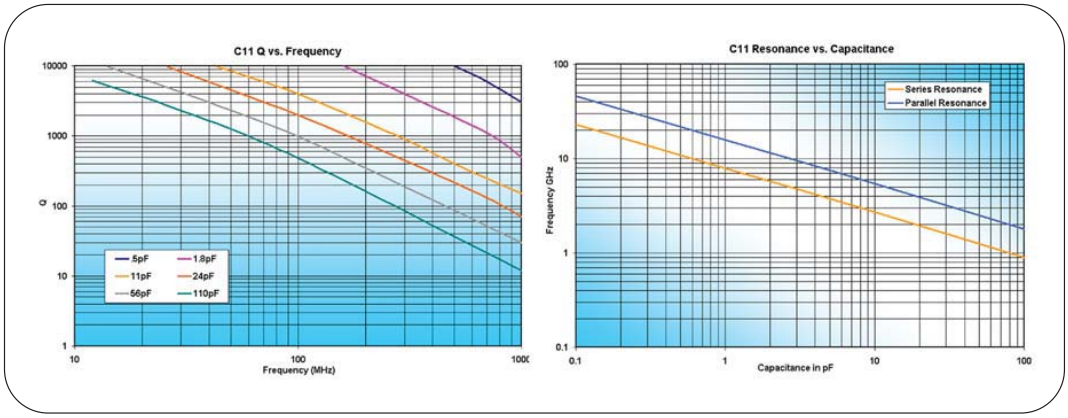
Note: Dissipation Factor applies to values of 4.7pF or greater.

Tolerance Codes

Code	Tolerance
A	± 0.05pF
B	± 0.10pF
C	± 0.25pF
D	± 0.50pF
F	± 1%
G	± 2%
J	± 5%
K	± 10%

Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY



C11 ENGINEERING KIT

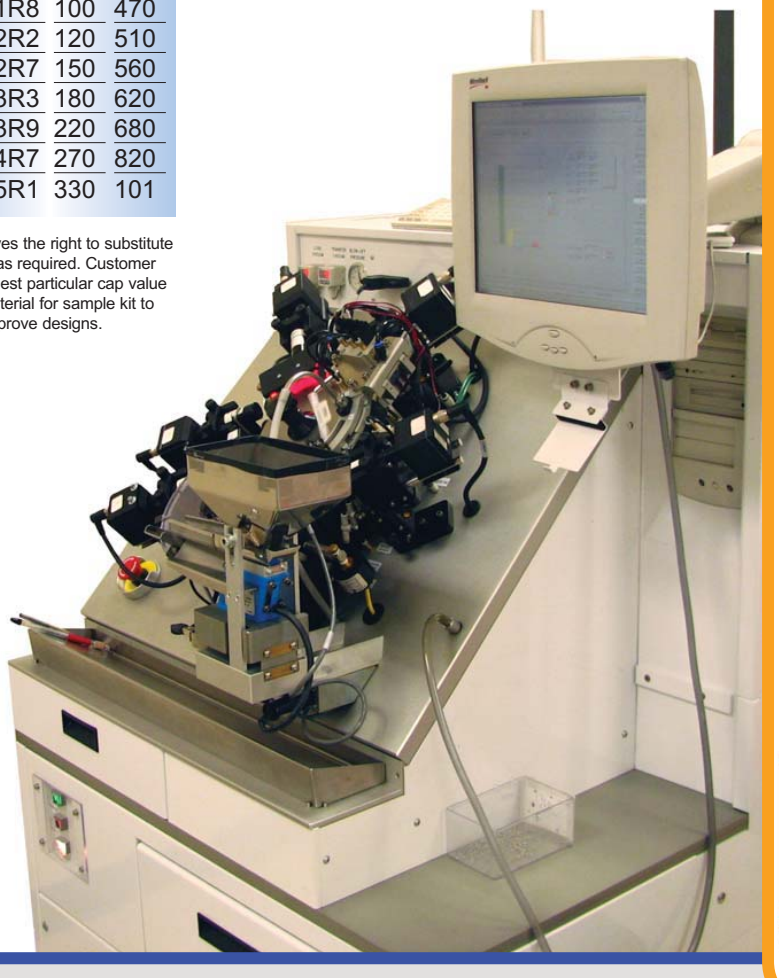
20 Pieces Each of 30 Values

CODE	CAP
0R3	0.3pF
0R5	0.5pF
1R0	1.0pF
1R2	1.2pF
1R5	1.5pF
1R8	1.8pF
2R0	2.0pF
2R2	2.2pF
2R7	2.7pF
3R3	3.3pF
3R9	3.9pF
4R7	4.7pF
5R6	5.6pF
6R8	6.8pF
8R2	8.2pF
100	10pF
120	12pF
150	15pF
180	18pF
220	22pF
270	27pF
330	33pF
390	39pF
470	47pF
560	56pF
680	68pF
820	82pF
101	100pF
C08BLBB1X5UX	2400pF Block

C11 DESIGNER KIT

KIT C	KIT D	KIT E	KIT F
0R1	1R0	5R6	270
0R2	1R2	6R8	330
0R3	1R5	8R2	390
0R4	1R8	100	470
0R5	2R2	120	510
0R6	2R7	150	560
0R7	3R3	180	620
0R8	3R9	220	680
0R9	4R7	270	820
1R0	5R1	330	101

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



Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

C17 1111

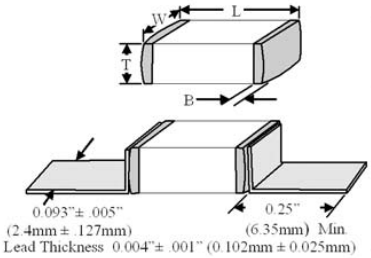
FUNCTIONAL APPLICATIONS

DC Blocking
Amplifier Matching Networks
VCO Frequency Stabilization
Filtering, Diplexers, and Antenna Matching
High RF Power Circuits

BENEFITS

Resonant Free Performance
High Q
SMD Compatibility
-55 to +125 °C Operating Range

Mechanical Specification



Product Code	Body Dimensions			Termination Code, Band Dimension and Material		
	Length (L)	Width (W)	Thickness (T)	Code	Band (B)	Material
C17	.110" + .020" - .010" (2.79 + 0.51 - 0.25)	.110" ± .015" (2.79 ± .381)	.100" (2.54) Max.	Z	.015" ± .010" (.381 ± .254)	Ni Barrier, Tin Plate
				S		Ni Barrier, Au Flash
				P		AgPd Termination
				U		Ni Barrier, Solder Plate

Laser markings available in Horizontal and Vertical orientation. Codes L, V, D.
The MS material system is available in Z termination only.
U termination is not available in the UL material system.

Capacitance Table

C17 High Q Capacitance Values

CAP CODE	CAP (pF)	Tol.	Rated WVDC	CAP CODE	CAP (pF)	Tol.	Rated WVDC	CAP CODE	CAP (pF)	Tol.	Rated WVDC	CAP CODE	CAP (pF)	Tol.	Rated WVDC
0R1	0.1	A B C D	1000V Code 7	2R0	2.0	A B C D	1000V Code 7	130	13	F G J K M	1000V Code 7	101	100	F G J K M	1000V* Code 7
0R2	0.2			2R1	2.1			150	15			111	110		
R25	0.25			2R2	2.2			160	16			121	120		
0R3	0.3			2R4	2.4			180	18			151	150		
R35	0.35			2R7	2.7			200	20			181	180		
0R4	0.4			3R0	3.0			220	22			221	220		
R45	0.45			3R3	3.3			240	24			271	270		500V** Code 4
0R5	0.5			3R6	3.6			270	27			331	330		
0R6	0.6			3R9	3.9			300	30			391	390		
0R7	0.7			4R3	4.3			330	33			471	470		
0R8	0.8			4R7	4.7			360	36			511	510		
0R9	0.9			5R1	5.1			390	39			561	560		
1R0	1.0			5R6	5.6			430	43			621	620		
1R2	1.2			6R2	6.2			470	47			681	680		
1R3	1.3			6R8	6.8			510	51			821	820		250V*** Code 9
1R4	1.4			7R5	7.5			560	56			911	910		
1R5	1.5			8R2	8.2			620	62			102	1000		
1R6	1.6			9R1	9.1			680	68			122	1200		100V Code 1
1R7	1.7			100	10	FGJKM		750	75			152	1500		
1R8	1.8			110	11			820	82			182	1800		
1R9	1.9			120	12			910	91			222	2200		

All cap values shown in **red** are available in MS only, in **blue** are available in CF, AH, and UL only.
* All CF, AH, and UL capacitors in the cap range from 110pF to 220pF are 500V rated, Code 4.
** All CF, AH, and UL capacitors in the cap range from 270pF to 680pF are 200V rated, Code 6.
*** All CF, AH, and UL capacitors in the cap range from 820pF to 1000pF are 50V rated, Code 6.

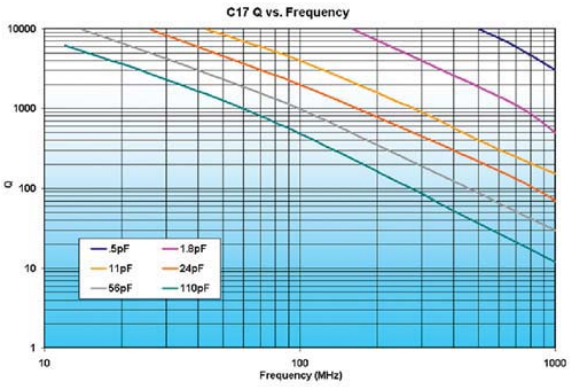
Electrical Specifications

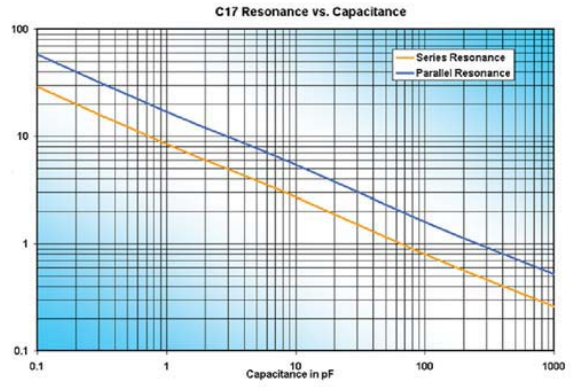
Dielectric Material Code	Temperature Coefficient (ppm/°C Maximum)	Dissipation Factor (% @ 1MHz Maximum)	Dielectric Withstanding Voltage		Insulation Resistance (MΩ Minimum)		Aging	Piezoelectric Effects	Dielectric Absorption
			Voltage Rating (Volts)	DWV (Volts)	@ +25°C	@ +125°C			
AH	P90 ± 20	0.05	1000 500 250	2500 1250 625	10^6	10^5	None	None	None
CF	0 ± 15	0.05							
UL	0 ± 30	0.05			10^5	10^4			
MS	0 ± 30	0.05	1000, 500, 250 ,100	2500, 1250 625,250	10^5	10^4			

Tolerance Codes	
Code	Tolerance
A	± 0.05pF
B	± 0.10pF
C	± 0.25pF
F	± 1%
G	± 2%
J	± 5%
K	± 10%

Dielectric Laboratories

DIELECTRIC LABORATORIES A DOVER COMPANY





C17 ENGINEERING KIT

CODE	CAP
0R3	0.3pF
0R5	0.5pF
0R7	0.7pF
1R0	1.0pF
1R2	1.2pF
1R5	1.5pF
1R8	1.8pF
2R0	2.0pF
2R2	2.2pF
2R7	2.7pF
3R3	3.3pF
3R9	3.9pF
4R7	4.7pF
5R6	5.6pF
6R8	6.8pF
8R2	8.2pF
100	10pF
120	12pF
150	15pF
180	18pF
220	22pF
270	27pF
330	33pF
390	39pF
470	47pF
560	56pF
680	68pF
820	82pF
101	100pF
151	150pF
221	220pF
331	330pF
471	470pF
681	680pF
102	1000pF
C08BLBB1X5UX	2400pF Block

C17 DESIGNER KIT

KIT C	KIT D	KIT E	KIT F
0R1	1R0	5R6	390
0R2	1R2	6R8	470
0R3	1R5	8R2	560
0R4	1R8	100	620
0R5	2R2	120	820
0R6	2R7	150	101
0R7	3R3	180	221
0R8	3R9	220	471
0R9	4R7	270	681
1R0	5R1	330	102

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

Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

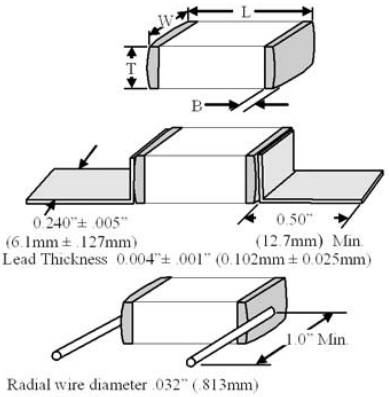
C22 2225

FUNCTIONAL APPLICATIONS

Impedance Matching
D.C. Blocking
Bypass, Coupling
Tuning and Feedback

BENEFITS

Power handling, High voltage
High Q
Low ESR
-55 to +125 °C Operating Range



Mechanical Specification

Product Code	Body Dimensions			Termination Code, Band Dimension and Material		
	Length (L)	Width (W)	Thickness (T)	Code	Band (B)	Material
C22CF	.220" + .020" - .010" (5.59 + .508 - .254)	.245" + .020" - .010" (6.22 + .508 - .254)	.130" (3.30) Max.	Z	.030" ± .010" (.762 ± .254)	Ni Barrier, Tin Plate
				S		Ni Barrier, Au Flash
				P		AgPd Termination
				U		Ni Barrier, Solder Plate

Laser markings available in Horizontal orientation only, Code L

Capacitance Table

C22 High Q, High Power, Capacitance Values
Available in CF Dielectric Material Only

CAP CODE	CAP (pF)	Cap Tol	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol	Rated WVDC	CAP CODE	CAP (pF)	Cap Tol	Rated WVDC
1R0	1.0	B C D	2500V Code B	8R2	8.2	B, C, D	2500V Code B	680	68	F G J K M	2500V Code B	561	560	F G J K M	1000V Code 7
1R2	1.2			100	10	F G J K M		820	82			681	680		
1R5	1.5			120	12			101	100			821	820		
1R8	1.8			150	15			121	120			102	1000		
2R2	2.2			180	18			151	150			122	1200		500 V Code 4
2R7	2.7			220	22			181	180			152	1500		
3R3	3.3			270	27			221	220			182	1800		
3R9	3.9			330	33			271	270			222	2200		300V Code 3
4R7	4.7			390	39			331	330		1500V Code A	272	2700		
5R6	5.6			470	47			391	390						
6R8	6.8			560	56			471	470						

Electrical Specification

Dielectric Material Code	Temperature Coefficient (ppm/°C Maximum)	Dissipation Factor (% @ 1MHz Maximum)	Dielectric Withstanding Voltage		Insulation Resistance (MΩ Minimum)		Aging	Piezoelectric Effects	Dielectric Absorption
			Voltage Rating (Volts)	DWV (Volts)	@ +25°C	@ +125°C			
CF	0 ± 15	0.05	2500	3000	10^6	10^5	None	None	None
			1500	1800					
			1000	1500					
			500	1250					
			300	750					

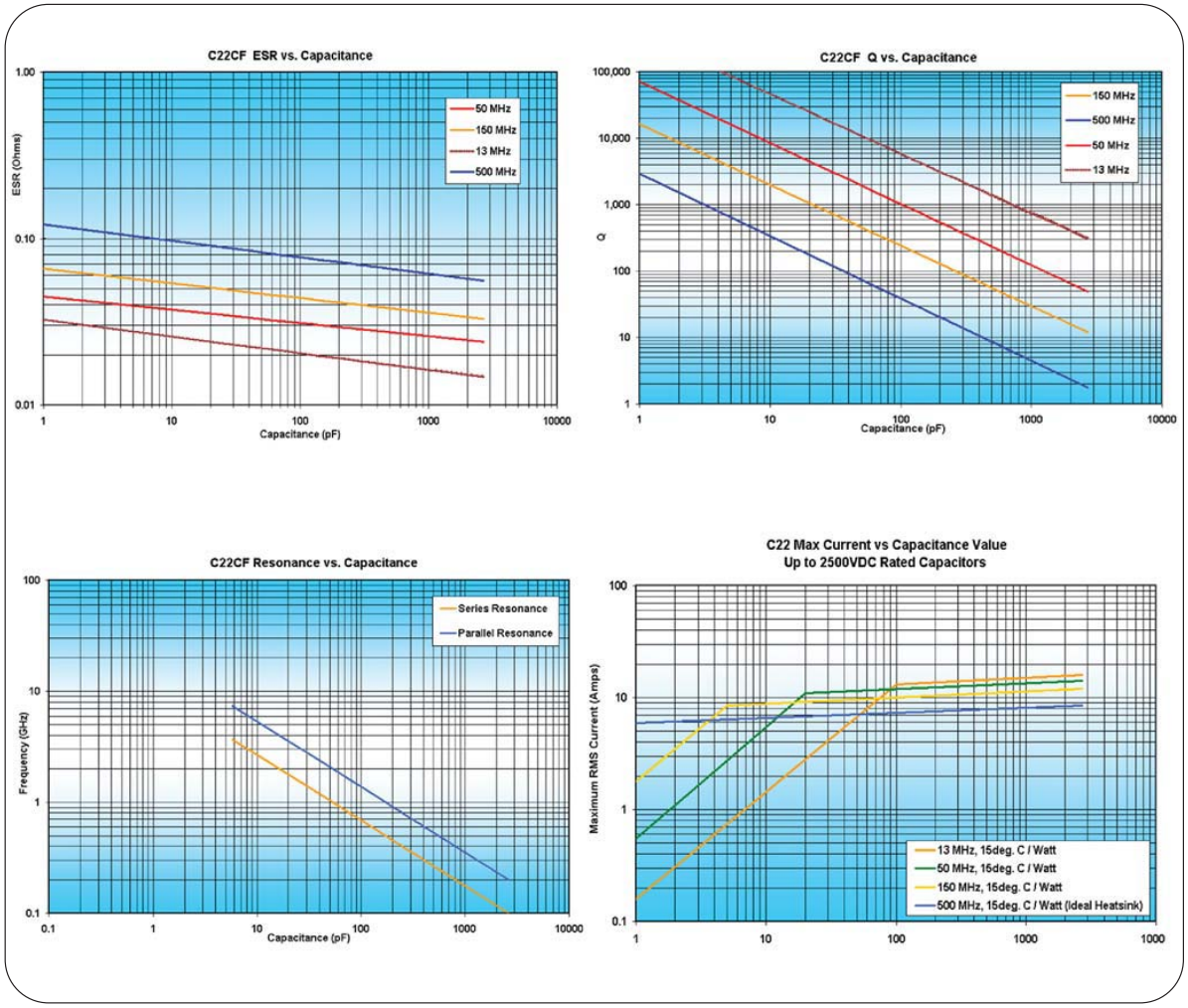
Dissipation Factor applies to values of 4.7pF or greater.
Parts rated >1000V are 100% IR tested @1000V

Tolerance Codes

Code	Tolerance
B	± 0.10pF
C	± 0.25pF
D	± 0.50pF
F	± 1%
G	± 2%
J	± 5%
K	± 10%
M	± 20%

Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY



Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

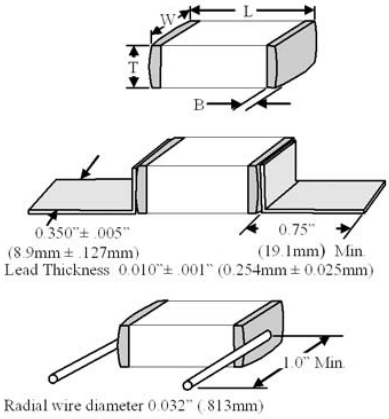
C40 3838

FUNCTIONAL APPLICATIONS

Impedance Matching
D.C. Blocking
Bypass, Coupling
Tuning and Feedback

BENEFITS

Power Handling, High voltage
High Q and Low ESR
-55 to +125 °C Operating Range



Mechanical Specifications

Product Code	Body Dimensions			Termination Code, Band Dimension and Material		
	Length (L)	Width (W)	Thickness (T)	Code	Band (B)	Material
C40	.380" + .015" - .010" (9.65 + .381 - .254)	.380" ± .010" (9.65 ± .254)	.130" (3.30) Max.	Z	.020" (.508) Min. .030" (.762) Max.	Ni Barrier, Tin Plate
				S		Ni Barrier, Au Flash
				P		AgPd Termination
				U		Ni Barrier, Solder Plate

Laser marking available in Horizontal orientation only. Code L.

Capacitance Table

C40 Capacitance Values

CAP CODE	CAP (pF)	Tol.	Rated WVDC	CAP CODE	CAP (pF)	Tol.	Rated WVDC	CAP CODE	CAP (pF)	Tol.	Rated WVDC	CAP CODE	CAP (pF)	Tol.	Rated WVDC
1R0	1.0	A B C D	7200V Code H	100	10	F G J K M	7200V Code H	121	120	F G J K M	3600V Code D	821	820	F G J K M	1000V Code 7
1R2	1.2			120	12			151	150			102	1000		
1R5	1.5			150	15			181	180			122	1200		
1R8	1.8			180	18			221	220			152	1500		
2R2	2.2			220	22			271	270			182	1800		
2R7	2.7			270	27			331	330			222	2200		
3R3	3.3			330	33			391	390			272	2700		500V Code 4
3R9	3.9			390	39			471	470		2500V Code B	332	3300		
4R7	4.7			470	47			561	560			392	3900		
5R6	5.6			560	56			681	680			472	4700		
6R8	6.8			680	68							512	5100		
8R2	8.2			820	82										
				101	100										

Electrical Specifications

Dielectric Material Code	Temperature Coefficient (ppm/°C Maximum)	Dissipation Factor (% @ 1MHz Maximum)	Dielectric Withstanding Voltage		Insulation Resistance (MΩ Minimum)		Aging	Piezoelectric Effects	Dielectric Absorption
			Voltage Rating (Volts)	DWV (Volts)	@ +25°C	@ +125°C			
AH	P90 ± 20	0.05	7200	8700	10^6	10^5	None	None	None
			3600	4400					
			2500	3750					
CF	0 ± 15	0.05	1000	1500					
			500	1250					

Tolerance Codes

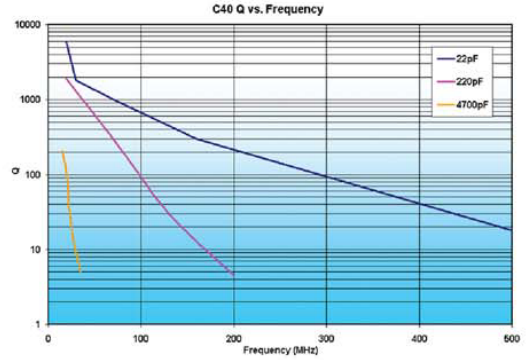
Code	Tolerance
A	± 0.05pF
B	± 0.10pF
C	± 0.25pF
F	± 1%
G	± 2%
J	± 5%
K	± 10%
M	± 20%

Note: Dissipation Factor applies to values > 4.7pF.
Parts rated >1000V are 100% IR tested @1000V

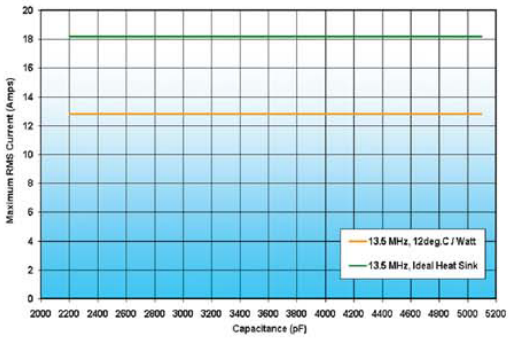
Dielectric Laboratories

DIELECTRIC LABORATORIES A DOVER COMPANY

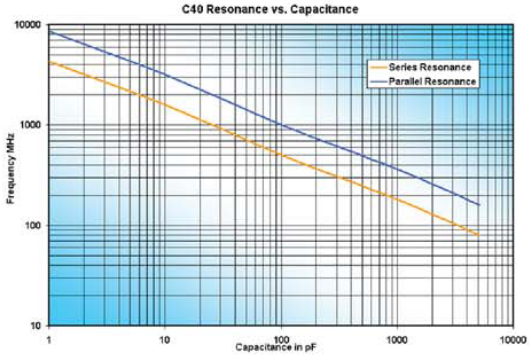
C40 Q vs. Frequency



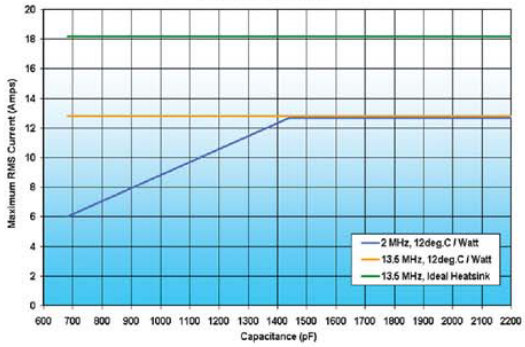
C40 Max Current vs Capacitance Value
500VDC Rated Capacitors



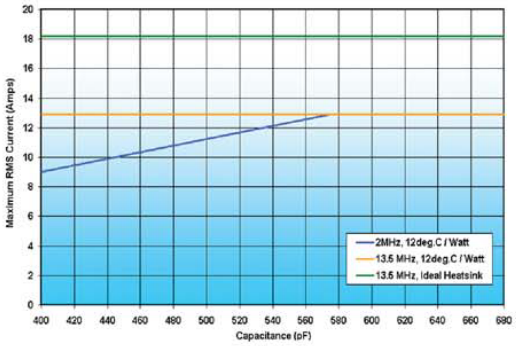
C40 Resonance vs. Capacitance



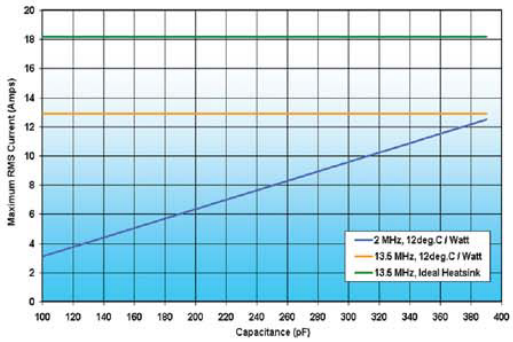
C40 Max Current vs Capacitance Value
1000VDC Rated Capacitors



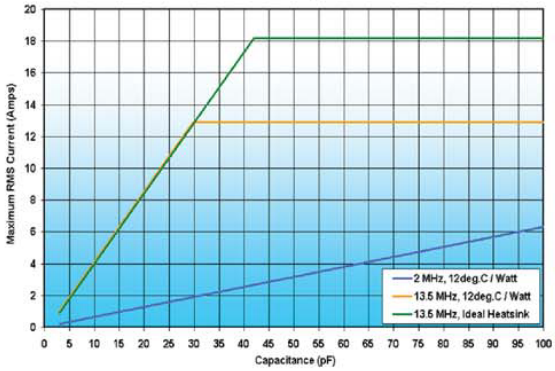
C40 Max Current vs Capacitance Value
2500VDC Rated Capacitors



C40 Max Current vs Capacitance Value
3600VDC Rated Capacitors



C40 Max Current vs Capacitance Value
7200VDC Rated Capacitors



Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

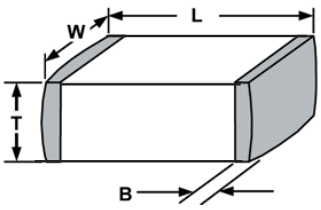
C04, C06, C08 Broadband Blocks

Functional Applications:

Fiber Optic Links
High Isolation decoupling
LANs
VCO Frequency Stabilization
Duplexers and Diplexers
RF/Microwave Modules
Instruments & Test Equip.
Filters

Benefits:

Resonance free DC Blocking / Decoupling
Low loss
Surface mountable

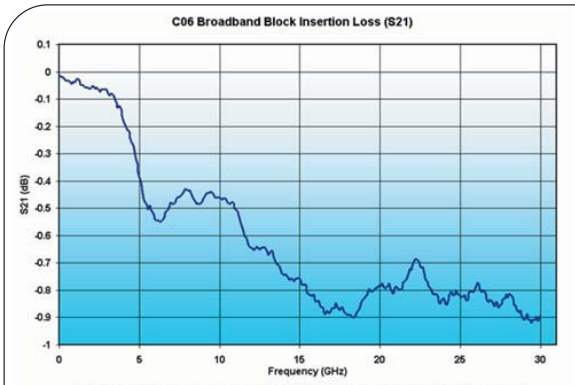


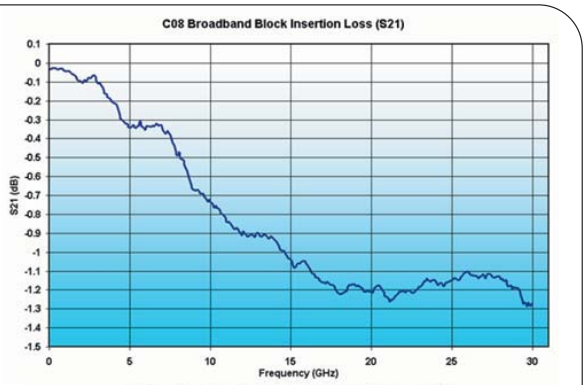
Product Code	Dimensions			
	Length (L)	Width (W)	Thickness (T)	Band (B)
C04 BL	.040" ± .004" (1.02 ± 0.1)	.020" ± .004" (0.51 ± 0.1)	.024" (0.61) Max.	.008" ± .004" (0.2 ± 0.1)
C06 BL	.060" ± .060" (1.52 ± .152)	.030" ± .006" (.762 ± .152)	.030" (.762) Max.	.010" + .010" - .005" (.254 + .254 -.127)
C08 BL	.080" ± .008" (2.03 ± .203)	.050" ± .008" (1.27 ± .203)	.030" (.762) Max.	.035" = .004" (.889 ± .102)

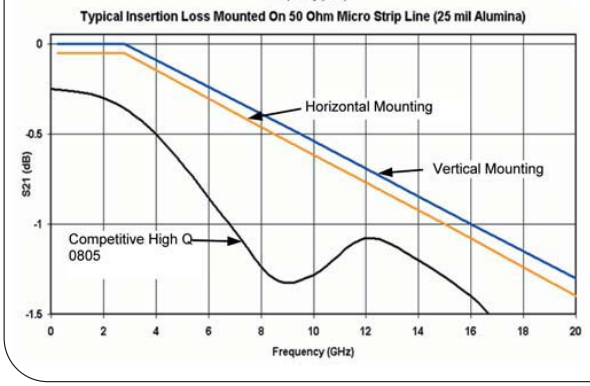
Part Characteristics

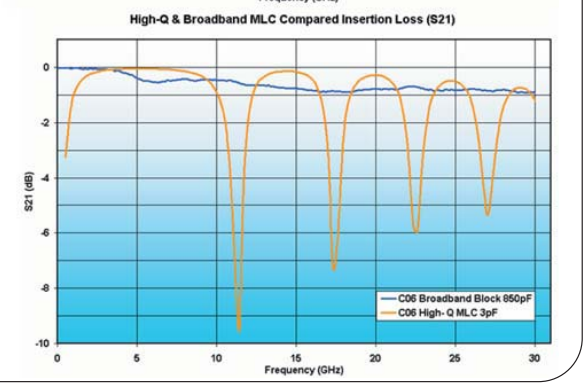
Part Number	Capacitance Guarded Minimum Value	Voltage Rating	Temperature Coefficient -55°C to 125°C	Maximum Dissipation Factor	Insulation Resistance (MΩ Minimum)	Age Rate	Frequency Range	Metallization
C04BLBB2X5_ UX / ZX / SX 0402 case size	120pF @ 1KHz,.2Vrms	50 V dc	± 15%	3.0% @ 1 KHz, .2 Vrms	10^4	≤1.5% Decade hours	5MHz - 30GHz	"U"= Ni barrier w /solder plate
C06BLBB2X5_ UX / ZX / SX 0603 case size	850pF @ 1KHz,.2Vrms						2MHz – 30GHz	"S"= Ni barrier w /gold flash. RoHS Compliant
C08BLBB1X5_ UX / ZX / SX 0805 case size	2400pF @ 1KHz,.2Vrms						1MHz – 20GHz	"Z"= Ni/Sn RoHS Compliant

Performance Characteristics









Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

Opti-Cap®

Functional Applications:

Ultra Broadband, Low Loss
0402, 0602 Mounting Footprints
Very Low Series Inductance
X7R Temperature and Voltage Stability

Benefits:

Resonance Free DC Blocking to >40GHz
Surface Mountable by Solder or Epoxy Bonding
Available in Tape & Reel or Waffle Pack Format
Improved Low Frequency Temperature Stability

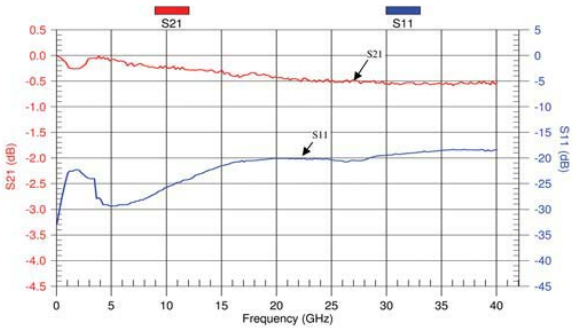
Electrical Characteristics

PART NUMBER (Includes T&R)	Capacitance / MLC Case Size	Voltage Rating	Temperature Coefficient	IR (@+20°C, Rated Voltage)	Max DF 1kHz	Aging Rate (% per Decade Hour Max.)	Term	Fp (GHz)	Maximum Process Temperature / Recommended Attachment method
P62BN820MA2636	100 nF 0603	25 Vdc	X7R ΔC max: ±15% (-55ºC to 125ºC)	10^2 MΩ	3.0%	1.0%	Au (Flash)	1.3	250°C/ Conductive Epoxy or Solder
P42BN820MA3152	220 nF 0402	10 Vdc	X5R ΔC max: ±15% (-55ºC to 85ºC)	10^2 MΩ	4.0%	1.0%	Au (Flash)	1.8	Conductive Epoxy

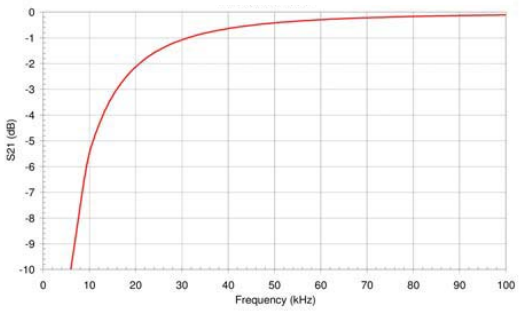
Note: P62BN820MA2636 is new part number for P02BN820MA2636

Performance

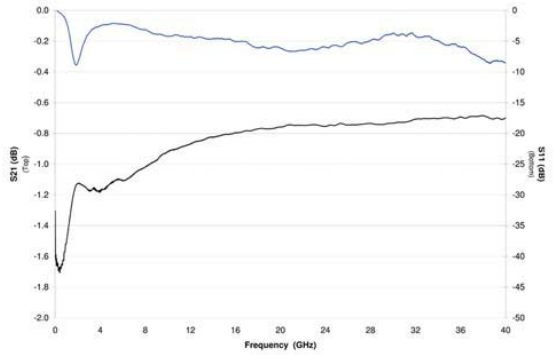
Typical Opti-Cap® Performance
P42BN820MA3152 (50 Ohm system)



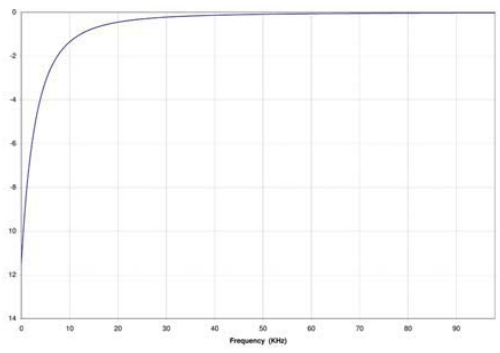
Typical Low Frequency Performance
P42BN820MA3152



Typical Opti-Cap® Performance
P62BN820MA2636 (50 Ohm system)



Typical Low Frequency Performance
P62BN820MA2636



Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

Milli-Cap®

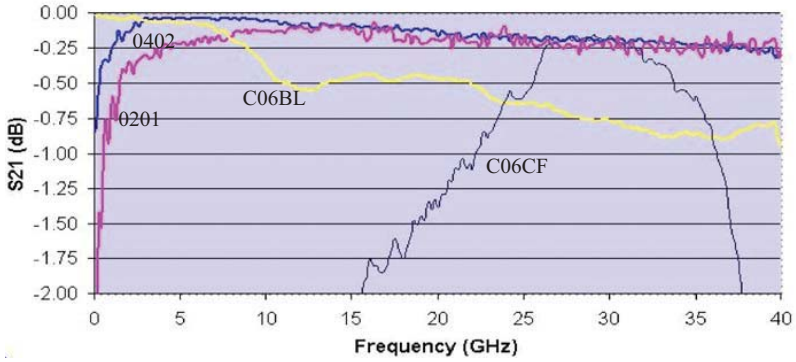
Functional Applications

0201, 0402, 0502, 0602 Footprints
Very Low Series Inductance
Ultra High Series Resonance
Low Loss, High Q

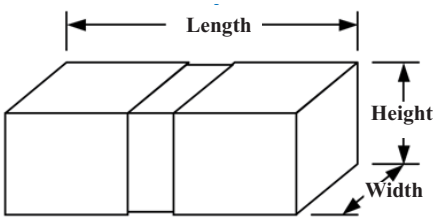
Benefits

Matches typical 50 Ohm Line Widths
Preserves Board Space
Behaves Like An Ideal Capacitor
More Usable Bandwidth

Insertion Loss Comparison of DLI Broadband Blocks vs Milli-Cap®



- 0402 MilliCap® wide-band, very low loss, no resonances
- 0201 MilliCap® wide-band, very low loss, no resonances
- C06BL 850pF capacitor
- C06CF 0.2pF Hi Q material



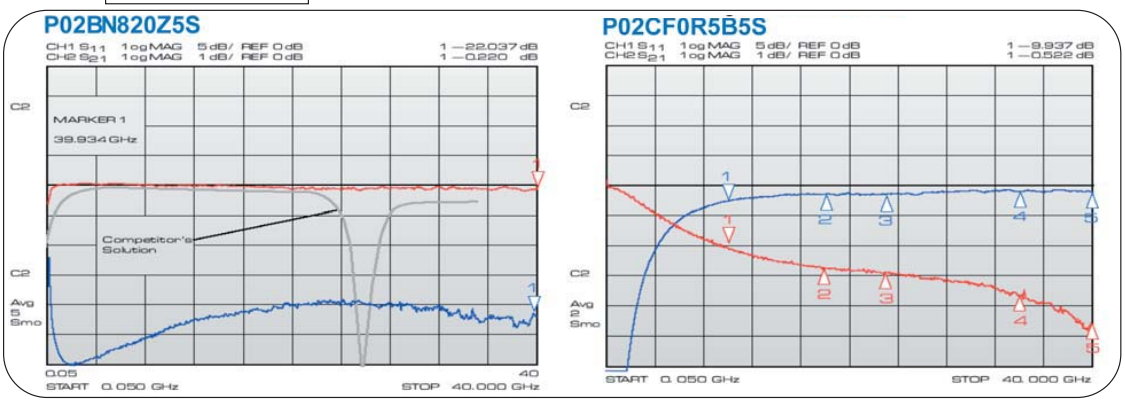
- Terminations : Gold
- Assembly temperatures not to exceed 260°C.
- Ideal for Test Equipment, Photonics, SONET, Digital radios, and Matching Filter applications

Dimension Key
P21=0201
P42=0402
P02=0502
P62=0602

Part Characteristics

Part Number	Cap.	Voltage Rating	Temperature Coefficient -55°C to 125°C	Maximum Dissipation Factor	Insulation Resistance (MΩ Minimum)	Aging Rate	Frequency Range
P__BN820Z5ST	82 pF	50 V dc	± 10%	3.0%@ 1MHz, 25°C	10^3 MΩ @ 25°C at rated voltage	<=1.5%/ decade hours	20MHz–40GHz
P__NR3R0K5ST	3.0 pF		N1500 ±500PPM / °C	0.25%@ 1MHz, 25°C	10^6 MΩ @ 25°C at rated voltage	N / A*	4–20GHz
P__CG1R5C5ST	1.5 pF		0 ± 30PPM	0.7%@ 1KHz, 25°C			8–32GHz
P__CG1R0C5ST	1.0 pF						18–40GHz
P__CD0R7B5ST	0.7 pF		N20 ±15PPM / °C	0.15%@ 1MHz, 25°C			20–46GHz
P__CF0R5B5ST	0.5 pF		0 ±15PPM / °C	0.6%@ MHz, 25°C			28–40GHz
P__CF0R3B5ST	0.3 pF						35–50GHz

Consult Factory for custom values
Class 1 materials do not age



Dielectric Laboratories

DIELECTRIC LABORATORIES
A DOVER COMPANY

DLI is committed to supporting your needs worldwide. Please contact us at:

Factory & Application Engineering

2777 Route 20 East
Cazenovia, NY, USA 13035-9433
Tel: 315-655-8710
Fax: 315-655-0445
Email: sales@dilabs.com

East Coast Sales Office

Hartford, Connecticut, USA
Tel: 860-741-0846
Fax: 860-741-8543
Email: bnyulassy@dilabs.com
If no answer, consult Factory for immediate response.

West Coast Sales Office

Valencia, California, USA
Tel: 661-295-5928
Fax: 661-295-5928
Email: bcrowley@novacap.com
If no answer, consult Factory for immediate response.
Other USA sales offices in Pennsylvania and New Mexico.

European Business Office

Howard Ingleson
Norwich, UK
Tel: (+44) 1603-723325
Fax: (+44) 1603-723301
Email: europesales@dilabs.com
Other European sales offices in Germany and France.

China Sales Office & Distribution

Dielectric Laboratories, Asia Trading (Shanghai) Co., Ltd.
Finance Square, Suite 1307, 333 Jiujiang Road
Shanghai 200001, China
Tel: (+86) 21-6360-7308
Fax: (+86) 21-6360-4596
Email: chinasales@dilabs.com
Other China sales offices in Beijing, Suzhou, Shenzhen, Wuhan and Chengdu.

DLI also offers support through an extensive network of regional representatives and distributors. Please consult our sales offices or web site for your local representative.

Disruptive Technologies for Spectrum Management

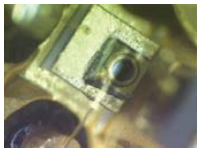
XTREME Q™

Cavity Resonators

XTREME Q™

Miniature Filters

Gain Equalizers



Laser Heat Sinks

Please refer to DLI Catalog, “Resonators, Filter and Custom Ceramic Components” for full details

Single Layer Capacitors

Di-Cap®

Highest performance SLC for RF, MW and MMW applications from 100 MHz to 100 GHz .
Most cap for size.
0.02 - 10,000 pF

Border Cap®

SLC w/1- or 2-sided recessed metallization to minimize the potential for shorting during die attach.
Ideal for epoxy attach.
0.02 - 3000 pF

Gap Cap

Series configured precision SLC for elimination of wire-bonds and microstrip applications.
Minimum performance variation.

Bar Cap®

Multiple decoupling/ bypass or blocking SLC configured in a single array.
Ideal for decoupling MMICs.

Binary Cap

Multi-value - binary tunable SLC for design tuning or MIC hybrids.

T-Cap®

SLC used in series connected open circuited transmission line and is designed for repeatable resonance behavior.

Build-to-Print Thin Film Processing

DLI offers a build-to-print service designed to facilitate thin film product design, manufacturing, and testing. DLI offers a comprehensive set of materials and process capabilities to serve as your one-stop thin film foundry. DLI’s experienced engineering staff is ready to answer your questions.

Precision Variable Capacitors

Voltronics Corporation is one of the world’s largest and most respected precision variable capacitor manufacturers. Consistent product quality, excellent customer service and product customization flexibility set Voltronics apart from its competitors. Whether it’s a reliable high voltage or a high purity non-magnetic or a lower cost high performance application, Voltronics has the right variable capacitor for you. Voltronics has been a Dover company since 2004.

Teflon

Low cost, miniature
0.3 thru 12pF
Available in non-mag
Surface mount

High Voltage
Up to 2KV
0.2 thru 55pF
Extended Voltage
Up to 15KV
0.1 thru 85pF
Available in non-mag

Glass & Sapphire

Sealed sapphire
0.6 thru 8pF
Available in non-mag
Surface mount

Sealed Glass
1.0 thru 250pF
Surface mount
Vertical, panel & Horizontal Mount

Air

Solder sealed
0.6 thru 14pF
Surface mount

Epoxy sealed
0.6 thru 14pF
Surface mount

Ceramic

Low cost 1/2-turn
1.25 thru 130pF
Surface or through-hole mount

Higher voltage single turn
Surface or through-hole mount

Non-caps

Custom inductors, diodes and resistors
Non-Magnetic only

Connectors & Cable Assemblies PC Plug, Straight & 90° Crimp Jack
Non-magnetic only