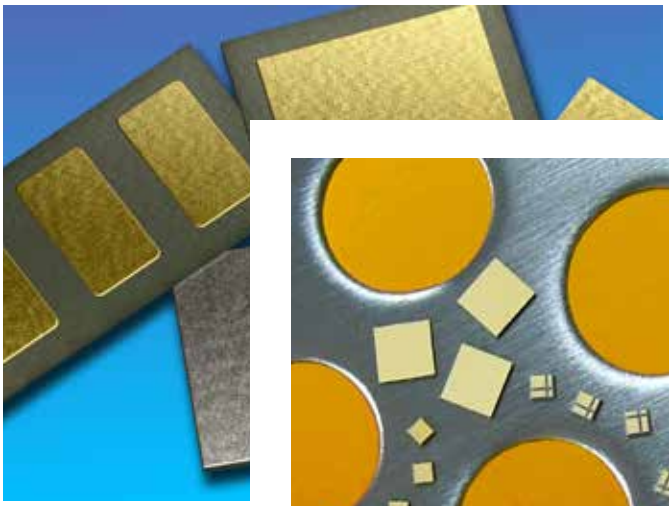
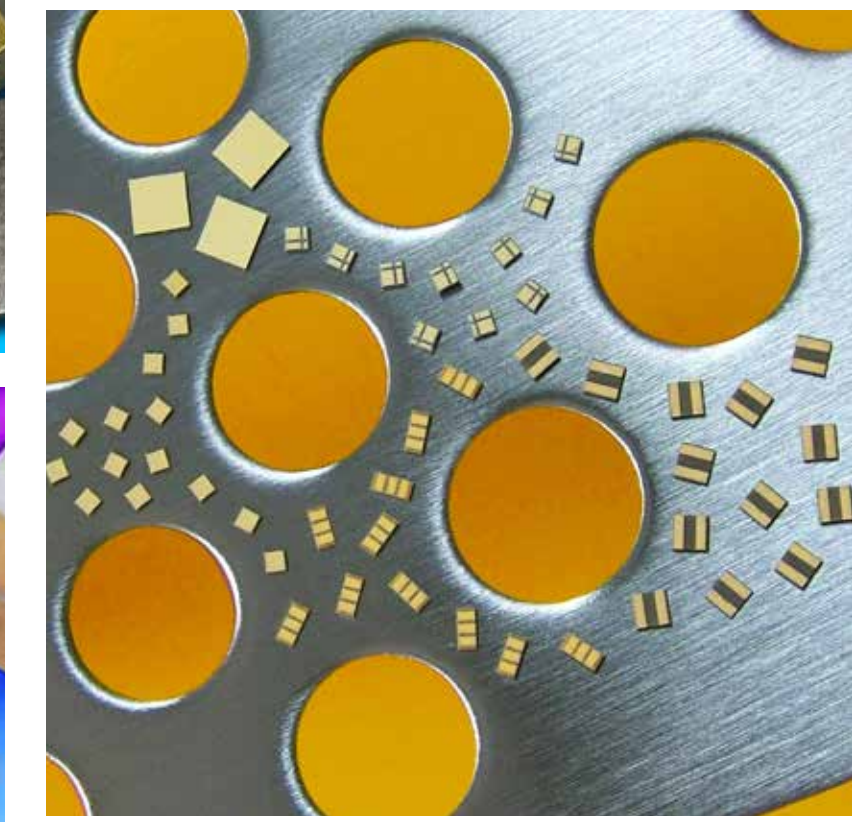
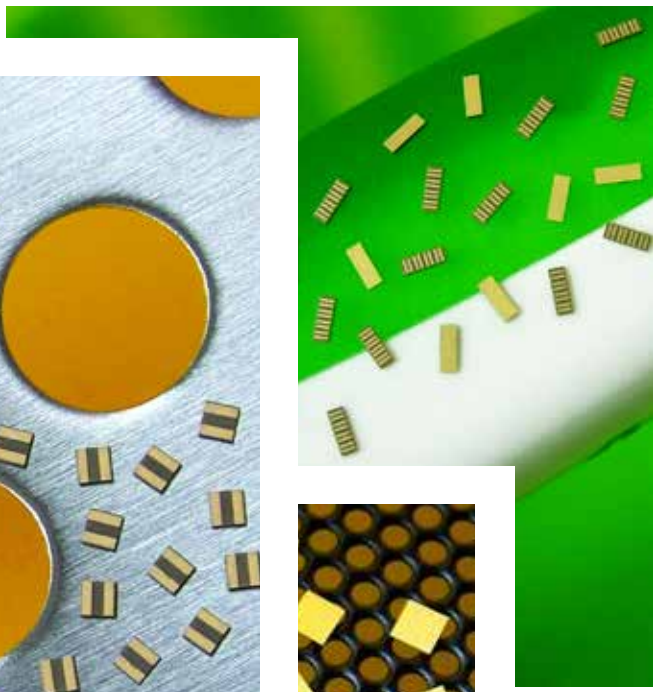
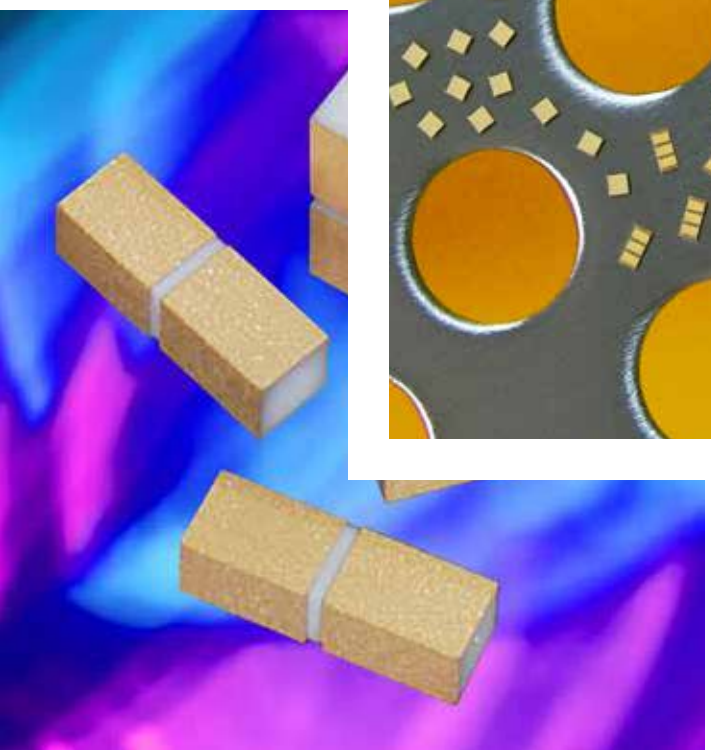
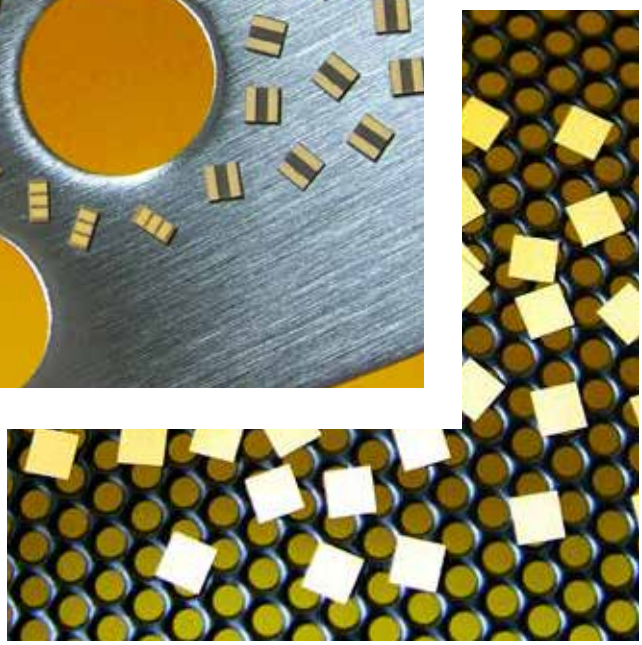
SLC Capacitors











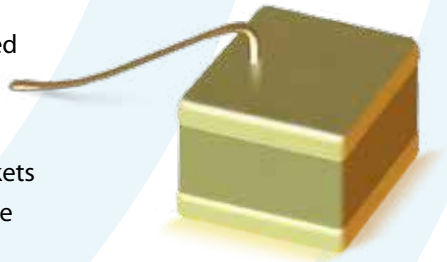
PRECISION DEVICES

knowles

COMPEX • DLI • JOHANSON MFG
NOVACAP • SYFER • VOLTRONICS

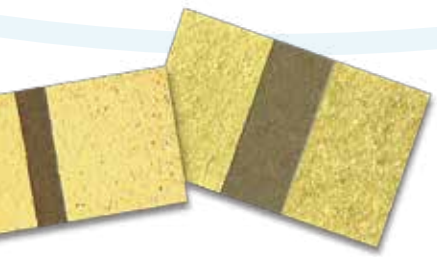
Introduction to Knowles Precision Devices

Knowles Precision Devices is a premier global source for Capacitors, RF Filters, EMI Filters, Resonators, non-magnetic components and advanced dielectric materials.



An umbrella for the brands of Compex, DLI, Johanson MFG, Novacap, Syfer and Voltronics, Knowles Precision Devices serves a variety of markets including: military, aerospace/avionics, medical equipment, implantable devices, EMI and connector filtering, oil exploration, instrumentation, industrial electronics, automotive, telecoms and data networks.

	COMPEX	DIELECTRIC LABORATORIES	Johanson	NOVACAP	SYFER	Voltronics
Capacitors: AEC-Q200					●	
Capacitors: Broadband Blocks		●				
Capacitors: Cap Assemblies				●		
Capacitors: Detonation Pulse				●		
Capacitors: High Power		●			●	●
Capacitors: High Q		●			●	●
Capacitors: High Reliability		●		●	●	
Capacitors: High Temperature				●	●	
Capacitors: High Voltage				●	●	
Capacitors: MLC - Leaded		●		●	●	
Capacitors: MLC - SMD				●	●	
Capacitors: Non-Magnetic		●		●	●	●
Capacitors: Non-Magnetic Trimmers			●			●
Capacitors: Planars and Discoidals					●	
Capacitors: Safety Certified				●	●	
Capacitors: Single Layer	●	●				
Capacitors: Trimmers			●			●
Dielectric Substrates		●				
EMI Filters					●	
Non-Magnetic Hardware						●
Non-Magnetic Inductors			●			
RF: Couplers		●				
RF: Filters		●				
RF: Gain Equalizers		●				
RF: Power Dividers		●				
RF: Resonators		●				
Thin Film: Bias Filter Networks		●				
Thin Film: Build To Print	●	●				
Thin Film: Resistors	●					
Thin Film: Self Bias Networks		●				



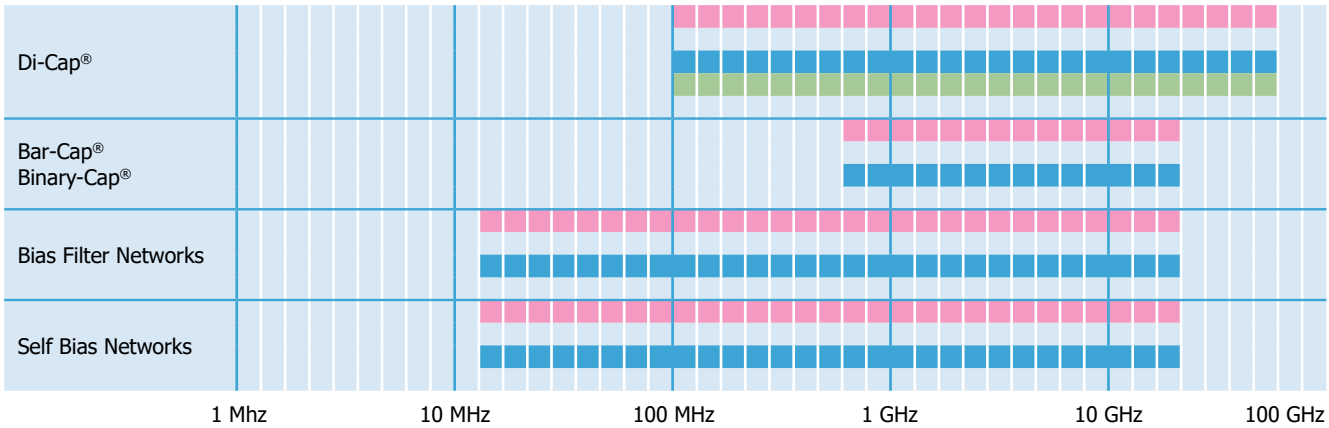
PRECISION DEVICES knowles

Simplified Frequency & Product Application Chart

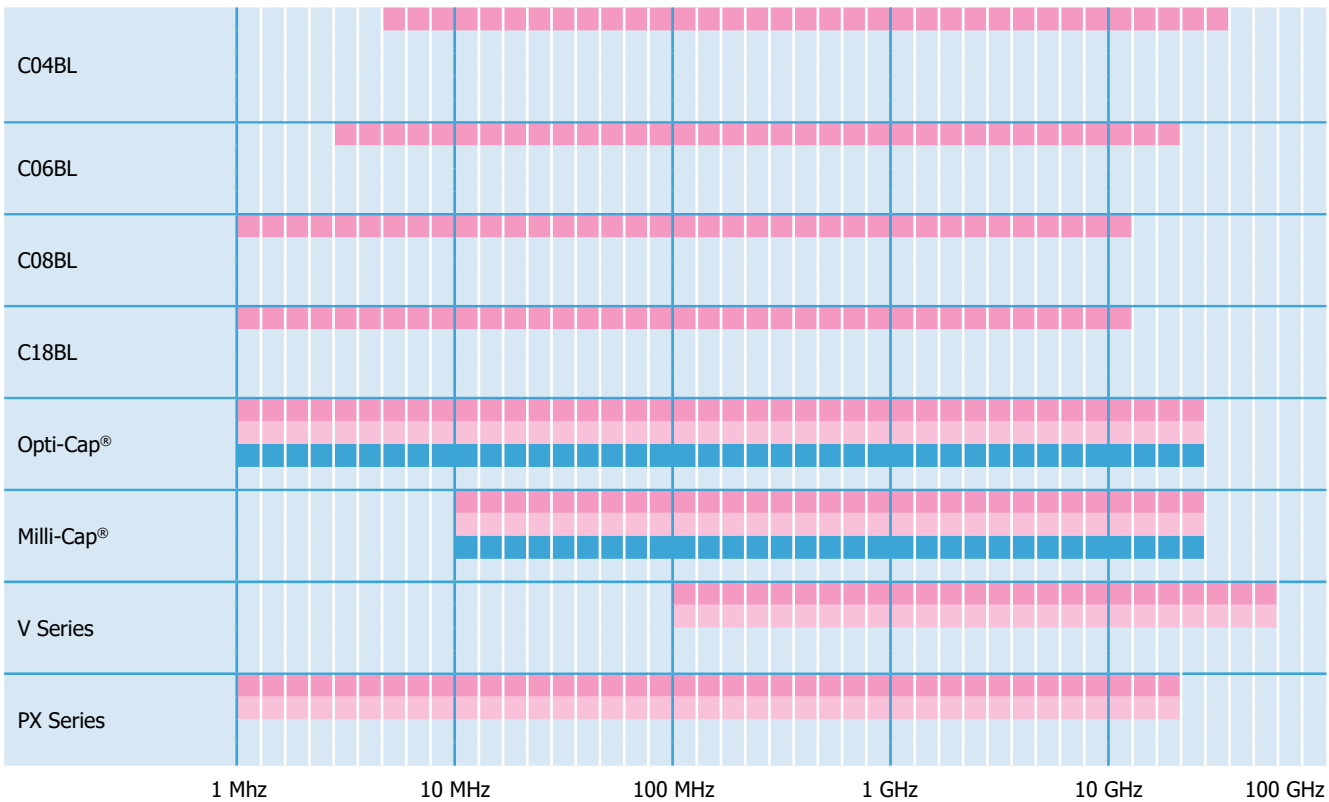
DLI DIELECTRIC LABORATORIES™
a Knowles Precision Devices brand

DC Blocking
Low Noise Amplifiers
Power Amplifiers, High Power Amplifiers
Oscillators
Filters

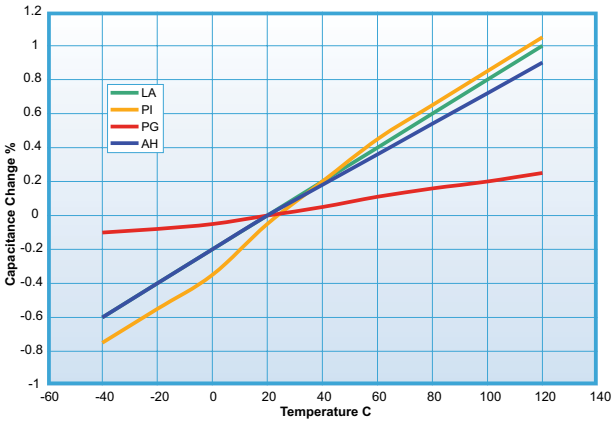
SLC and Thin Film

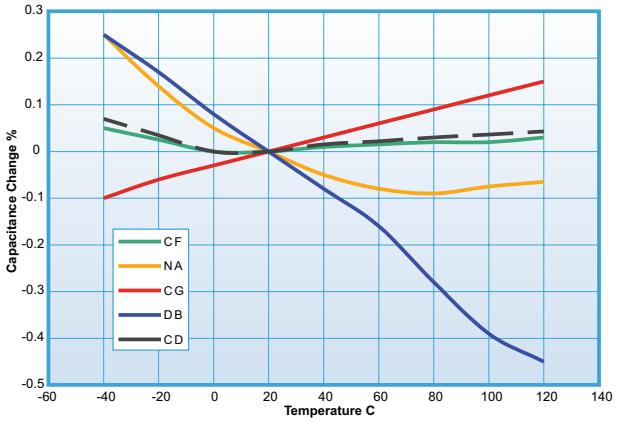


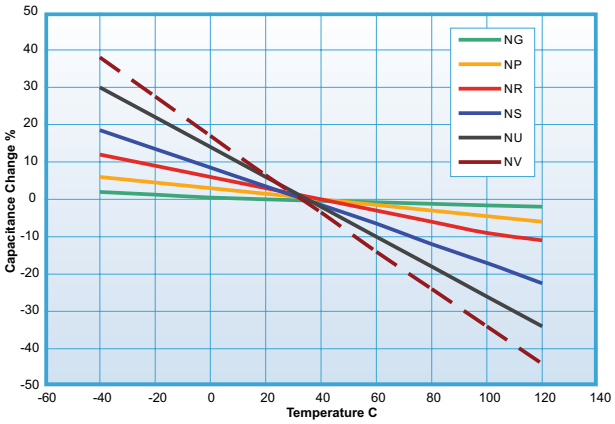
Broadband and DC Blocks

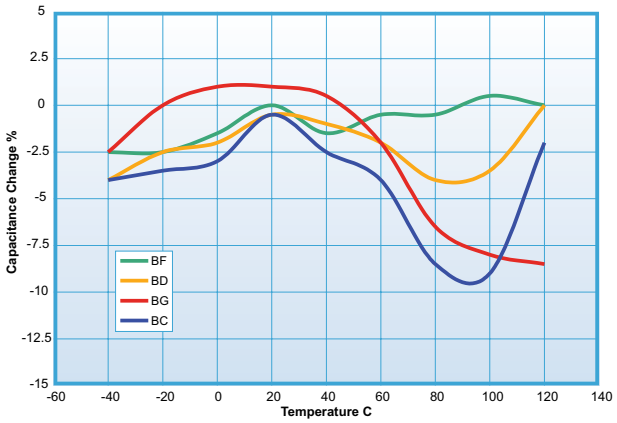


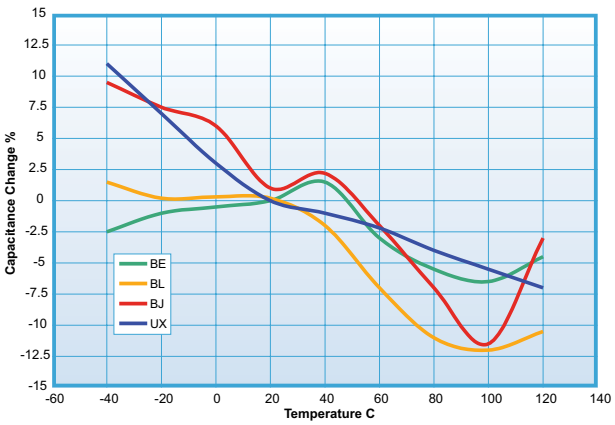
Dielectric Temperature Characteristics

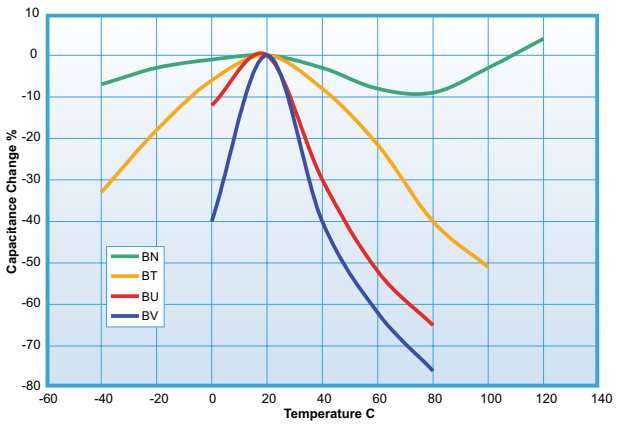




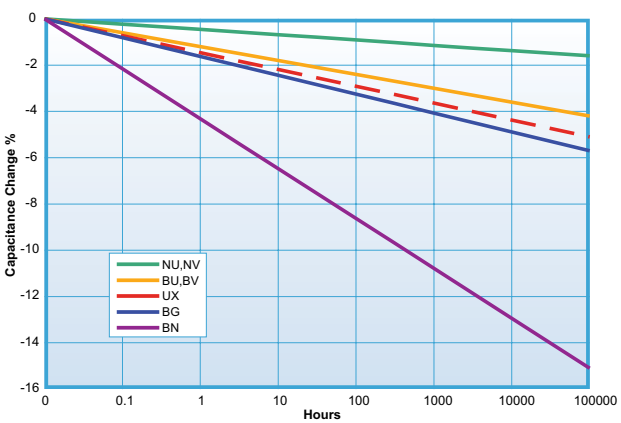


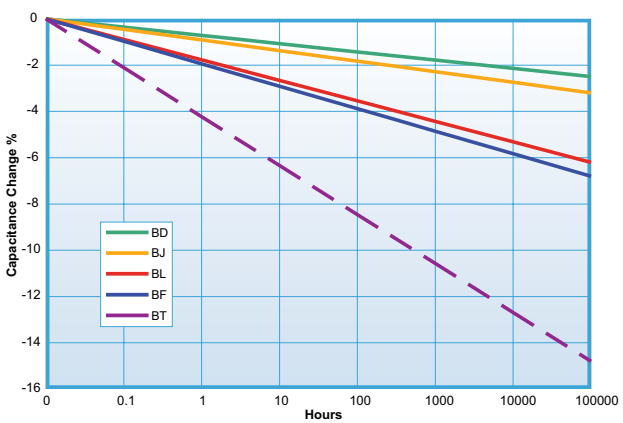






Dielectric Aging Characteristics





SLC - Packaging

SLC Waffle Packaging

DLI offers a wide variety of standard design waffle packs in various materials depending on the application. Typical material offerings are antistatic and gel pack, which can contain up to 400 pieces depending on component dimension. Custom waffle packs are available; please consult the factory for details.

SLC Tape and Reel

DLI offers tape and reel packaging solutions for a variety of our single layer capacitor case sizes. Utilizing the latest technology and equipment to provide our customers the highest quality products, our standard SMD tape and reel packaging meets or exceeds EIA standards. Custom tape and reel packaging available; consult the factory for options.

SLC on Tape Ring

DLI offers single layer capacitors re-populated on blue membrane tape and photon ring assembly to maximize efficiency and minimize product cost. Used in high volume applications, the re-populated capacitors provide for more efficient component placement and fewer "pick and place" machine change outs. The re-populated capacitors meet GMV capacitance value, are 100% visually acceptable and can be re-populated in custom shapes and sizes on a 6 inch photon tape ring.

SLC "Black Dotted" on Tape Ring

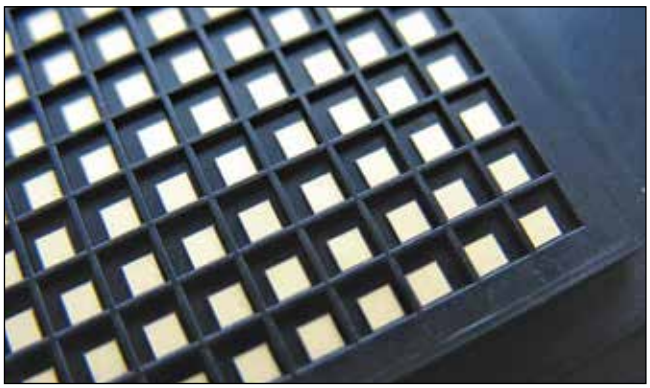
DLI offers "black dotted" capacitors on membrane tape and photon ring assembly. For high volume applications utilizing visual recognition, a less expensive alternative is the use of "black dotted" capacitors provided on saw dice membrane tape. The non- "black dotted" capacitors meet GMV capacitance value and a minimum of 75% visually acceptable product is guaranteed.

Storage

Single layer capacitors with applicable terminations will be solderable for a minimum of 1 year from date of shipment if properly stored in their original packaging. For extended periods, storage in a dry nitrogen environment is recommended. Product supplied on membrane tape and photon ring should be stored in the original container and in an environmentally controlled area where temperature and humidity are maintained. It is recommended not to store the product in direct light as this can negatively impact the adhesion properties of the tape.

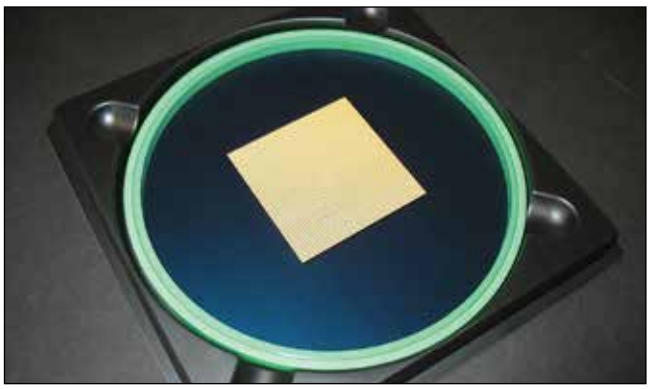
Handling

Single layer ceramic capacitors should be handled carefully during component transfer or placement, preventing damage to the gold and ceramic surfaces. The capacitors should be handled with precision stainless steel tweezers or a vacuum wand. Contacting the capacitor with bare hands should be avoided as resulting contaminants will affect the performance of the component.

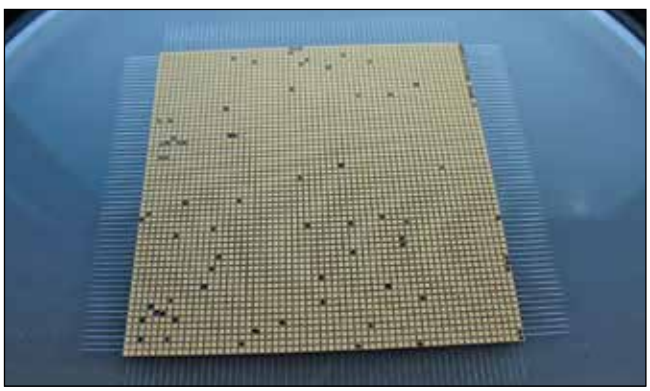


SLC Waffle Packaging

SLC Tape and Reel

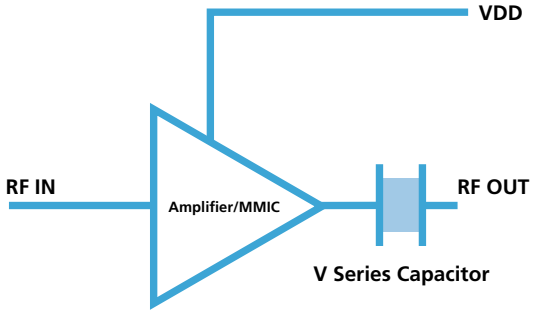


SLC on Tape Ring

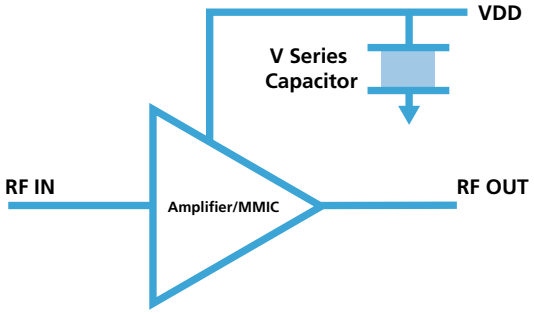


Performance Characteristics - V Series Capacitors

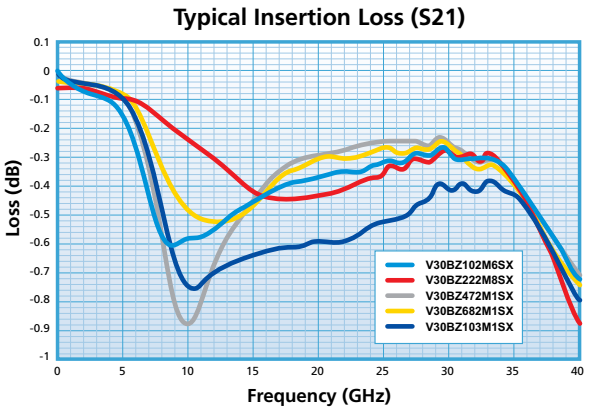
DC Blocking



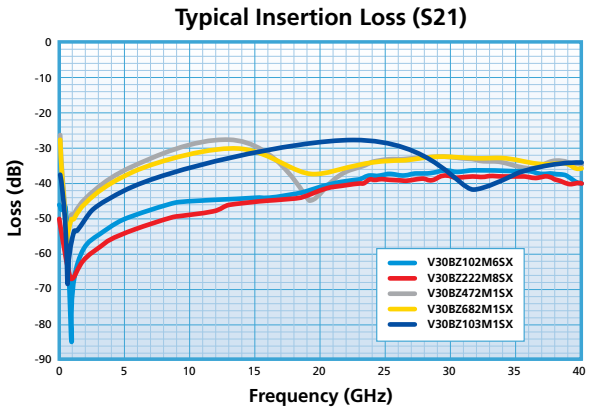
RF Bypassing



Series data



Shunt data



Attachment Method - V Series Capacitors

Recommended Attachment Method (Conductive Epoxy)
Alternative Attachment Method (Gold Eutectic)

Bonding can be done with either needle or automatic dispensers.

Epoxy curing defer to the epoxy manufacturer's preferred schedule but typically in the 125°C to 150°C range.

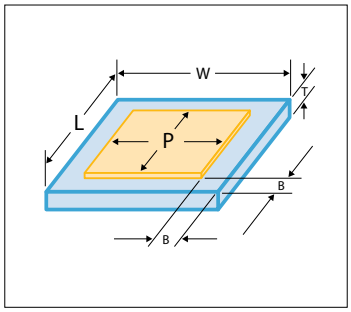
Benefits of epoxy is easier repairs, cure need not be started immediately so multiple substrates may be processed at one time and epoxy is effective in higher frequencies.

SLC - Border Cap®

DIELECTRIC LABORATORIES
a Knowles Precision Devices brand

Dimensions

Style	Length / Width	Pad Size	Border	Thickness
D10	0.010" ±0.001" (0.254mm ±0.025)	0.008" (0.203mm)	0.001" (0.025mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D12	0.012" ±0.001" (0.305mm ±0.025)	0.010" (0.254mm)	0.001" (0.025mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D15	0.015" ±0.001" (0.381mm ±0.025)	0.011" (0.279mm)	0.002" (0.051mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D20	0.020" ±0.001" (0.508mm ±0.025)	0.016" (0.406mm)	0.002" (0.051mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D25	0.025" ±0.001" (0.635mm ±0.025)	0.021" (0.533mm)	0.002" (0.051mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D30	0.030" ±0.001" (0.762mm ±0.025)	0.026" (0.660mm)	0.002" (0.051mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D35	0.035" ±0.001" (0.889mm ±0.025)	0.031" (0.787mm)	0.002" (0.051mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D40	0.040" ±0.001" (1.016mm ±0.025)	0.036" (0.914mm)	0.002" (0.051mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)
D50	0.012" ±0.001" (1.27mm ±0.025)	0.046" (1.168mm)	0.002" (0.051mm)	0.006" ±0.0025" (0.152mm ± 0.064mm)



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

Capacitance values - Single-sided

Style	D10			D12			D15			D20			D25			D30			D35			D40			D50		
	CAPACITANCE (pF)																										
MATERIAL	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.
PI	0.03	0.05	P,K	0.05	0.07	P,K	0.06	0.09	P,K	0.15	0.15	A,K	0.2	0.3	A,K	0.3	0.45	A,K	0.35	0.6	A,B,K	0.5	0.7	A,B,K	0.8	1.1	B,K
PG	0.04	0.06	P,K	0.06	0.09	P,K	0.08	0.1	P,K	0.15	0.2	A,K	0.25	0.4	A,K	0.35	0.55	A,K	0.5	0.8	A,B,K	0.65	0.95	B,K	1	1.5	B,K
AH	0.06	0.1	P,K	0.09	0.1	P,K	0.15	0.2	A,K	0.25	0.35	A,K	0.4	0.6	A,K	0.55	0.9	B,K	0.75	1.2	B,K	1	1.4	B,K	1.5	2.2	K
CF	0.07	0.1	P,K	0.1	0.15	P,K	0.15	0.2	A,K	0.25	0.45	A,K	0.45	0.7	B,K	0.65	1	B,K	0.8	1.3	B,K	1.1	1.6	K	1.7	2.4	K
NA	0.07	0.1	P,K	0.15	0.15	A,K	0.15	0.2	A,K	0.25	0.45	A,K	0.45	0.7	B,K	0.65	1	B,K	0.85	1.5	B,K	1.2	1.7	K	1.8	2.7	K
CD	0.15	0.15	A,K	0.2	0.25	A,K	0.25	0.35	A,K	0.45	0.7	B,K	0.7	1.1	B,K	0.95	1.6	C,K	1.4	2.2	C,K	1.8	2.7	K	2.7	4.3	K
CG	0.25	0.35	A,K	0.3	0.5	A,K	0.45	0.7	B,K	0.8	1.3	C,K	1.3	2	C,K	1.8	3	D,K	2.7	4.3	D,K	3.3	5.1	K	5.1	8.2	K
DB	0.25	0.35	A,K	0.35	0.5	A,K	0.45	0.7	B,K	0.8	1.3	C,K	1.3	2.2	C,K	1.9	3	D,K	2.7	4.3	D,K	3.6	5.1	K	5.6	8.2	K
NP	0.25	0.4	A,K	0.4	0.6	B,K	0.55	0.85	B,K	0.95	1.6	C,K	1.5	2.4	C,K	2.2	3.6	D,K	3	5.1	D,K	4.3	6.2	K	6.2	10	K
NR	0.5	0.8	B,K	0.7	1.1	B,K	1	1.6	C,K	1.8	3	D,K	3	4.7	D,K	4.3	6.8	K	6.2	10	K	7.5	11	K	12	18	K
NS	0.9	1.5	C,K	1.3	2.2	C,K	1.9	3	D,K	3.6	5.6	D,K	5.6	9.1	K	8.2	13	K	11	18	K	15	22	K	22	33	K
NU	1.8	3	D,K	2.7	4.3	D,K	3.9	5.6	K	6.8	11	K	11	18	K	16	27	K	22	36	K	30	43	K	47	68	K
NV	2.7	4.3	D,K	3.9	6.2	K	5.6	8.2	K	10	16	K	16	27	K	24	39	K	33	56	K	43	62	K	68	100	K
BD	2.2	3.3	K	3	5.1	K	4.3	6.8	K	8.2	13	K	13	20	K	18	30	K	27	43	K	33	51	K	51	82	K
BC	3.9	6.2	K	5.6	9.1	K	8.2	13	K	15	24	K	24	39	K	36	56	K	47	75	K	62	91	K	100	150	K
BE	3.6	6.2	K	5.6	9.1	K	8.2	12	K	15	22	K	24	36	K	33	56	K	47	75	K	62	91	K	91	130	K
BL	6.2	10	K,M	9.1	13	K,M	13	20	K,M	24	36	K,M	36	56	K,M	56	91	K,M	75	120	K,M	100	130	K,M	150	220	K,M
BJ	10	16	K	15	24	K	20	33	K	39	62	K	62	100	K	91	150	K	120	200	K	160	240	K	270	390	K
BN	13	22	K,M	20	33	K,M	30	43	K,M	51	82	K,M	82	130	K,M	120	200	K,M	160	270	K,M	220	330	K,M	330	510	K,M
BU	27	43	M	36	62	M	56	82	M	100	160	M	150	240	M	220	360	M	300	510	M	430	620	M	620	1000	M
BV	39	68	M	62	100	M	82	130	M	150	240	M	240	390	M	360	560	M	510	820	M	680	1000	M	1000	1500	M

UX Material Capacitance Table (all values M tolerance ±20%)

VOLTAGE	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
25V	82	100	120	140	160	200	300	370	490	590	710	860	1000	1200	1300	1600	2000	2400
50V					100	140	200	240	300	370	450	540	600	750	800	950	1300	1500

Capacitance values - Double-sided

Style	D10			D12			D15			D20			D25			D30			D35			D40			D50		
	CAPACITANCE (pF)																										
MATERIAL	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.	MIN.	MAX.	TOL.
PI	0.03	0.04	P,K	0.04	0.06	P,K	0.06	0.08	P,K	0.1	0.15	A,K	0.2	0.25	A,K	0.25	0.4	A,K	0.35	0.55	A,B,K	0.45	0.65	A,B,K	0.7	1.1	B,K
PG	0.04	0.06	P,K	0.06	0.08	P,K	0.07	0.1	P,K	0.15	0.2	A,K	0.25	0.35	A,K	0.35	0.5	A,K	0.45	0.7	A,B,K	0.6	0.9	B,K	0.95	1.4	B,K
AH	0.06	0.09	P,K	0.09	0.1	P,K	0.15	0.15	A,K	0.2	0.3	A,K	0.35	0.5	A,K	0.5	0.8	A,B,K	0.7	1.1	B,K	0.9	1.3	B,K	1.4	2.2	K
CF	0.07	0.1	P,K	0.1	0.15	A,K	0.15	0.15	A,K	0.25	0.35	A,K	0.4	0.65	B,K	0.6	0.95	B,K	0.8	1.3	B,K	1.1	1.6	K	1.7	2.4	K
NA	0.07	0.1	P,K	0.09	0.15	A,K	0.15	0.15	A,K	0.25	0.35	A,K	0.4	0.6	B,K	0.55	0.9	B,K	0.75	1.2	B,K	1	1.5	K	1.6	2.4	K
CD	0.15	0.15	A,K	0.15	0.25	A,K	0.2	0.3	A,K	0.4	0.6	B,K	0.6	1	B,K	0.9	1.5	C,K	1.3	2	C,K	1.7	2.4	K	2.7	3.9	K
CG	0.2	0.3	A,K	0.3	0.45	A,K	0.4	0.55	A,K	0.7	1.1	B,K	1.2	1.9	C,K	1.7	2.7	C,K	2.4	3.9	D,K	3.3	4.7	K	5.1	7.5	K
DB	0.25	0.35	A,K	0.35	0.5	A,K	0.5	0.7	B,K	0.9	1.3	C,K	1.4	2.1	C,K	2	3.1	D,K	2.8	4.3	D,K	3.6	5.6	K	5.6	9.1	K
NP	0.25	0.4	A,K	0.4	0.6	B,K	0.55	0.8	B.K	1	1.5	C,K	1.7	2.5	C,K	2.4	3.7	D,K	3.3	5.1	D,K	4.3	6.8	K	6.8	10	K
NR	0.45	0.7	B,K	0.65	1.1	B,K	0.85	1.3	C,K	1.6	2.4	C,K	2.7	4.3	D,K	3.9	6.2	D,K	5.6	9.1	K	7.5	11	K	12	16	K
NS	0.85	1.3	C,K	1.3	2	C,K	1.6	2.4	D,K	3	4.7	D,K	5.1	8.2	K	7.5	12	K	10	16	K	15	20	K	22	33	K
NU	1.7	2.7	D,K	2.7	3.9	D,K	3.3	4.7	K	6.2	9.1	K	10	16	K	15	24	K	20	33	K	27	39	K	43	62	K
NV	2.7	3.9	D,K	3.9	6.2	K	5.1	6.8	K	9.1	13	K	15	24	K	22	36	K	30	51	K	43	62	K	68	100	K
BD	2	3	K	3	4.7	K	3.9	5.6	K	7.5	11	K	12	18	K	18	27	K	24	39	K	33	47	K	51	75	K
BC	3.6	5.6	K	5.6	8.2	K	6.8	10	K	13	20	K	22	33	K	33	51	K	43	68	K	62	82	K	91	130	K
BE	3.6	5.6	K	5.1	8.2	K	6.8	10	K	13	20	K	22	33	K	30	51	K	43	68	K	56	82	K	91	130	K
BL	5.6	9.1	K,M	8.2	13	K,M	11	16	K,M	20	30	K,M	33	51	K,M	51	82	K,M	68	110	K,M	91	130	K,M	150	220	K,M
BJ	9.1	15	K	15	22	K	18	27	K	33	51	K	56	82	K	82	130	K	110	180	K	150	220	K	240	360	K
BN	13	20	K,M	20	30	K,M	24	36	K,M	47	68	K,M	75	120	K,M	110	180	K,M	150	240	K,M	200	300	K,M	330	470	K,M
BU	24	39	M	36	56	M	47	68	M	91	130	M	150	220	M	220	330	M	300	470	M	390	560	M	620	910	M
BV	39	62	M	56	91	M	75	110	M	150	220	M	220	360	M	330	510	M	470	750	M	620	910	M	1000	1500	M

UX Material Capacitance Table (all values M tolerance ±20%)

VOLTAGE	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
25V	75	91	110	130	140	170	270	320	440	540	650	800	900	1100	1200	1500	2000	2400
50V					91	110	170	210	280	340	410	500	560	700	750	900	1200	1500

Description

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

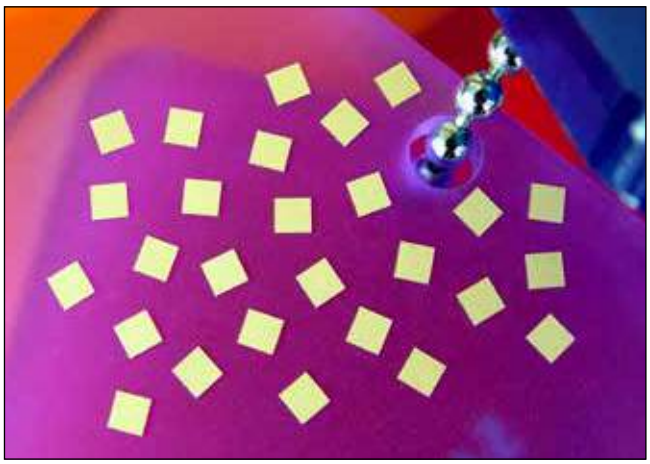
- Available from 0.03pF to 10,000pF
- Operating frequency up to 100GHz
- Wire Bondable:
- Customized solutions are available, please contact sales office

Functional Applications

- DC Blocking
- RF Bypassing
- Filtering
- Tuning and 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
P	± 0.01pF
A	± 0.05pF
B	± 0.1pF
C	± 0.25pF
D	± 0.50pF
K	± 10%
L	± 15%
M	± 20%
X	GMV (Guarantee Minimum Value)
Z	+80%, -20%

Border Caps need to have a tolerance that is effectively 10%.

Voltage

Code	Voltage
2	25 Volts
5	50 Volts
1	100 Volts

Ordering information - SLC - Di-Cap®

D	10	CF	0R1	B	5	P	X	
Product	Case Size	Material	Capacitance (pF)	Tolerance	Voltage	Termination	Test Level	Packaging
D = Di-Cap®	**10** **12** **15** **20** **25** **30** **35** **50** **70** **90**	See material tables on Page 3.	**R02** = 0.02 pF **0R5** = 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.	**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%	**2** = 25V **5** = 50V **1** = 100V	**P** = Ni / Au **T** = Ni / AuSn **M** = Au **L** = Single Beam Lead **A** = Axial Beam Lead **S** = Standing Axial Beam Lead **D** = Special **Z** = Tin Copper Ribbon	**Y** **X** **A** **B** **D** **E** See test level definitions on page 5.	**T** = Tape and Reel Leave blank for generic waffle pack. See packaging definitions on Page 7.

SLC - Bar Cap®

Description

Multiple Decoupling/Blocking Capacitors in a Single Array.

- Operating frequency up to 30GHz
- Wire Bondable:
- Customized solutions are available, please contact sales office

Functional Applications

- DC Blocking
- RF Bypassing
- Decoupling
- GaAs ICs

Benefits

- Single insertion reduces complexity and cost
- Gold metallization for wire bonding
- Reduce bond wires for improved performance

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
Z	+80%, -20%

Voltage

Code	Voltage
2	25 Volts
5	50 Volts
1	100 Volts

Ordering information - SLC - Bar Cap®

E	40	BU	151	Z	1	P	X	4	
Product	Case Size	Material	Capacitance (pF)	Tolerance	Voltage	Termination	Test Level	Capacitor Quantity (mils)	Packaging
E = Bar Cap®	**20** **25** **30** **40**	See material tables on Page 3.	**800** = 80 pF **101** = 101 pF **121** = 120 pF **151** = 150 pF Consult an inside sales rep. for custom solutions.	**Z** = +80% -20%	**2** = 25V **5** = 50V	**P** = Ni / Au **M** = Au	**Y** **X** See test level definitions on page 5.	**3** **4** **6** **Etc.**	**T** = Tape and Reel Leave blank for generic waffle pack. See packaging definitions on Page 7.

*Custom Solutions are available; however additional tooling costs may apply. Please contact the sales office for more information.

SLC - Gap Cap®

Series Configured Capacitor for Microwave Applications.

Recessed metallization has been designed to minimize the potential of shorting during attachment (epoxy or solder).

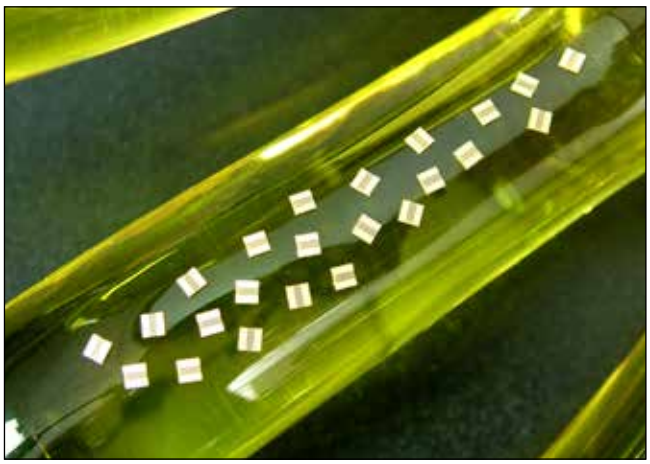
- Available from 0.2pF to 800pF
- Operating frequency up to 30GHz
- Customized solutions

Functional Applications

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

Benefits

- Eliminates wire-bonding
- Coplanar waveguide
- Low insertion loss



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
K	± 10%
L	± 15%
M	± 20%
X	GMV (Guarantee Minimum Value)
Z	+80%, -20%

Voltage

Code	Voltage
2	25 Volts
5	50 Volts

Ordering information - SLC - Gap Cap®

G	10	BU	100	K	5	P	X	10	
Product	Case Size	Material	Capacitance (pF)	Tolerance	Voltage	Termination	Test Level	Gap Width (mils)	Packaging
G = Gap-Cap®	**10** **15** **20** **25** **30** **35** **50**	See material tables on Page 3.	**R01** = 0.01 pF **0R5** = 0.5 pF **1R0** = 1.0 pF **5R1** = 5.1 pF **100** = 10 pF **511** = 510 pF Refer to Capacitance range tables for available values. Consult an inside sales rep. for custom solutions.	**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%	**2** = 25V **5** = 50V	**P** = Ni / Au **M** = Au	**Y** **X** **A** **B** **D** **E** See test level definitions on page 5.	**5** **8** **10** **15**	**T** = Tape and Reel Leave blank for generic waffle pack. See packaging definitions on Page 7.

Capacitance values - 25 Volt Gap Cap®

Style	G10			G15			G20			G25			G30			G35			G50		
	CAPACITANCE (pF)																				
MATERIAL	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.
PI	0.02	0.03	A	0.03	0.07	A	0.04	0.10	A	0.05	0.15	A	0.06	0.15	A	0.07	0.20	A			
PG	0.02	0.05	A	0.04	0.10	A	0.05	0.15	A	0.07	0.20	A	0.08	0.25	A	0.09	0.25	A			
AH	0.04	0.08	A	0.06	0.15	A	0.08	0.25	A	0.10	0.30	A	0.15	0.35	A	0.15	0.45	A			
CF	0.04	0.09	A	0.08	0.15	A	0.10	0.30	A	0.15	0.35	A	0.15	0.45	A	0.20	0.50	A			
NA	0.04	0.08	A	0.07	0.15	A	0.09	0.25	A	0.15	0.35	A	0.15	0.40	A	0.15	0.50	A			
CD	0.06	0.10	A	0.15	0.25	A	0.15	0.45	A	0.20	0.60	B	0.25	0.70	B	0.30	0.80	B			
CG	0.15	0.25	A	0.25	0.50	A	0.30	0.90	B	0.35	1.1	B	0.45	1.3	C	0.50	1.6	C			
DB	0.15	0.25	A	0.25	0.55	B	0.30	0.90	B	0.35	1.1	B	0.45	1.4	C	0.50	1.6	C			
NP	0.15	0.30	A	0.30	0.65	B	0.35	1.1	C	0.40	1.3	C	0.55	1.6	C	0.60	1.9	C			
NR	0.25	0.60	A, B	0.50	1.2	B	0.65	2.0	C	0.75	2.4	C	0.95	3.0	D	1.1	3.6	D			
NS	0.50	1.2	B	0.90	2.2	C, K	1.2	3.9	D, K	1.4	4.7	D, K	1.8	5.6	D, K	2.2	6.8	K			
NU	0.95	2.4	C, K	1.8	4.3	C, K	2.4	7.5	D, K	3.0	9.1	D, K	3.6	11	K	4.3	13	K			
NV	1.4	3.6	C, K	2.7	6.8	D, K	3.6	11	D, K	4.3	13	K	5.6	16	K	6.2	20	K			
BD	1.1	2.7	K	2.2	5.1	K	2.7	9.1	K	3.3	11	K	4.3	13	K	5.1	16	K			
BC	2.0	5.1	K	3.9	10	K	5.1	16	K	6.2	20	K	8.2	24	K	9.1	27	K			
BE	2.0	4.7	K	3.9	9.1	K	5.1	16	K	6.2	20	K	7.5	24	K	9.1	27	K			
BL	3.3	7.5	K	6.2	15	K	8.2	24	K	10	30	K	12	39	K	15	43	K			
BJ	5.1	13	K	10	24	K	13	43	K	16	51	K	20	62	K	24	75	K			
BN	7.5	18	K	15	33	K	18	56	K	22	68	K	27	82	K	33	100	K			
BU	15	33	K, M	27	62	K, M	33	110	K, M	43	130	K, M	51	160	K, M	62	180	K, M			
BV	22	51	M	43	100	M	51	160	M	68	200	M	82	240	M	100	300	M			
UX	40	60	M	90	120	M	150	200	M	190	250	M	265	300	M	310	350	M	500	800	M

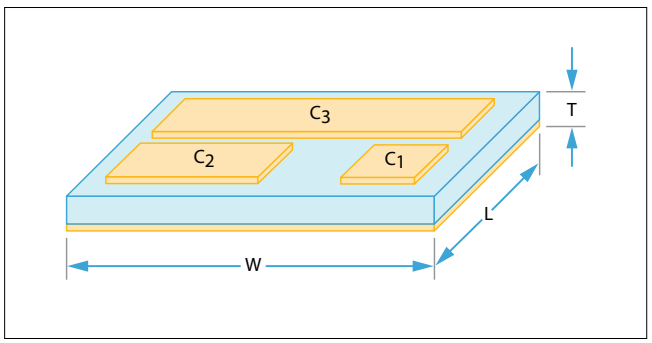
Capacitance values - 50 Volt Gap Cap®

Style	G10			G15			G20			G25			G30			G35			G50		
	CAPACITANCE (pF)																				
MATERIAL	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.	MIN	MAX	TOL.
PI	0.02	0.02	A	0.03	0.05	A	0.03	0.08	A	0.04	0.15	A	0.05	0.15	A	0.06	0.20	A	0.07	0.35	A
PG	0.02	0.03	A	0.03	0.06	A	0.04	0.10	A	0.05	0.20	A	0.07	0.25	A	0.07	0.25	A	0.09	0.50	A
AH	0.03	0.05	A	0.05	0.10	A	0.06	0.15	A	0.08	0.30	A	0.10	0.35	A	0.15	0.45	A	0.15	0.75	A, B
CF	0.03	0.06	A	0.06	0.10	A	0.07	0.20	A	0.09	0.35	A	0.15	0.45	A	0.15	0.50	A	0.20	0.90	A, B
NA	0.03	0.05	A	0.05	0.10	A	0.07	0.15	A	0.08	0.35	A	0.15	0.40	A	0.15	0.45	A	0.20	0.85	A, B
CD	0.04	0.09	A	0.08	0.15	A	0.15	0.30	A	0.15	0.55	A	0.20	0.70	A, B	0.20	0.80	A, B	0.30	1.4	A, B
CG	0.08	0.15	A	0.15	0.35	A	0.20	0.60	A	0.30	1.1	A, B	0.35	1.3	A, B	0.40	1.5	A, B	0.50	2.7	A, B
DB	0.08	0.15	A	0.20	0.35	A	0.25	0.60	A	0.30	1.1	B	0.35	1.3	B, C	0.40	1.6	B, C	0.50	2.7	B, C
NP	0.09	0.20	A	0.20	0.40	A	0.25	0.70	B	0.35	1.3	B, C	0.40	1.6	B, C	0.50	1.9	B, C	0.60	3.3	B, C
NR	0.20	0.40	A	0.35	0.80	B	0.45	1.3	B, C	0.60	2.4	C	0.75	3.0	D	0.90	3.6	D	1.2	6.2	D, K
NS	0.35	0.8	C, K	0.65	1.5	C, K	0.85	2.4	C, K	1.1	4.7	C, K	1.4	5.6	D, K	1.6	6.2	D, K	2.2	11	D, K
NU	0.65	1.6	C, K	1.3	3.0	C, K	1.7	5.1	D, K	2.2	9.1	D, K	3.0	11	K	3.3	13	K	4.3	22	K
NV	0.95	2.4	C, K	2.0	4.7	C, K	2.7	7.5	D, K	3.3	13	D, K	4.3	16	K	5.1	20	K	6.2	33	K
BD	0.75	1.8	K	1.5	3.6	K	2.0	5.6	K	2.7	11	K	3.3	13	K	3.9	15	K	5.1	27	K
BC	1.4	3.3	K	3.0	6.8	K	3.9	11	K	4.7	20	K	6.2	24	K	7.5	27	K	9.1	51	K
BE	1.4	3.3	K	2.7	6.2	K	3.6	10	K	4.7	20	K	6.2	24	K	6.8	27	K	9.1	4.7	K
BL	2.2	5.1	K	4.3	10	K	6.2	16	K	7.5	30	K	10	36	K	11	43	K	15	75	K
BJ	3.6	8.2	K	7.5	16	K	10	27	K	12	51	K	16	62	K	18	68	K	24	120	K
BN	5.1	12	K	10	22	K	13	39	K	18	68	K	22	82	K	24	100	K	33	160	K
BU	9.1	22	M	20	43	M	24	68	M	33	130	M	43	160	M	47	180	M	62	330	M
BV	15	36	M	30	68	M	39	110	M	51	200	M	68	240	M	75	300	M	100	510	M
UX			60	70	M	90	120	M	140	160	M	180	190	M	200	250	M	380	550	M	M

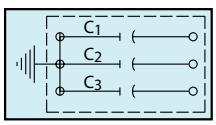
Specifications - Bi-Cap®

Part Number	No. of Caps	Values (pF)	Voltage (WVDC)	Length	Width	Thickness	Border
F15CGR08M5PX3	3	0.08, 0.15, 0.3	50	0.015" ± 0.001" (0.381mm ± 0.025mm)	0.015" ± 0.001" (0.381mm ± 0.025mm)	0.004" ± 0.001" (0.102mm ± 0.025mm)	0.002" (0.051mm)
F15NR0R1M1PX3	3	0.1, 0.2, 0.4	100	0.015" ± 0.001" (0.381mm ± 0.025mm)	0.015" ± 0.001" (0.381mm ± 0.025mm)	0.006" ± 0.001" (0.152mm ± 0.025mm)	
F20CG0R1M1PX3	3	0.1, 0.2, 0.4	100	0.020" ± 0.001" (0.508mm ± 0.025mm)	0.020" ± 0.001" (0.508mm ± 0.025mm)	0.006" ± 0.001" (0.152mm ± 0.025mm)	
F20NR0R2M1PX3	3	0.2, 0.4, 0.8	100	0.020" ± 0.001" (0.508mm ± 0.025mm)	0.020" ± 0.001" (0.508mm ± 0.025mm)	0.006" ± 0.001" (0.152mm ± 0.025mm)	
F25CFR08M5PX3	3	0.08, 0.15, 0.3	50	0.025" ± 0.001" (0.635mm ± 0.025mm)	0.025" ± 0.001" (0.635mm ± 0.025mm)	0.004" ± 0.001" (0.102mm ± 0.025mm)	
F25CG0R2M1PX3	3	0.2, 0.4, 0.8	100	0.025" ± 0.001" (0.635mm ± 0.025mm)	0.025" ± 0.001" (0.635mm ± 0.025mm)	0.006" ± 0.001" (0.152mm ± 0.025mm)	
F25NR0R4M1PX3	3	0.4, 0.8, 1.6	100	0.025" ± 0.001" (0.635mm ± 0.025mm)	0.025" ± 0.001" (0.635mm ± 0.025mm)	0.006" ± 0.001" (0.152mm ± 0.025mm)	
F35CF0R1M1PX3	3	0.1, 0.2, 0.4	100	0.035" ± 0.001" (0.889mm ± 0.025mm)	0.035" ± 0.001" (0.889mm ± 0.025mm)	0.006" ± 0.001" (0.152mm ± 0.025mm)	
F35CG0R4M1PX3	3	0.4, 0.8, 1.6	100	0.035" ± 0.001" (0.889mm ± 0.025mm)	0.035" ± 0.001" (0.889mm ± 0.025mm)	0.006" ± 0.001" (0.152mm ± 0.025mm)	
F40NR0R5M1PX4	4	0.5, 1, 2, 4	100	0.040" ± 0.001" (1.016mm ± 0.025mm)	0.040" ± 0.001" (1.016mm ± 0.025mm)	0.0075" ± 0.001" (0.191mm ± 0.025mm)	

Dimensions - Bi-Cap®

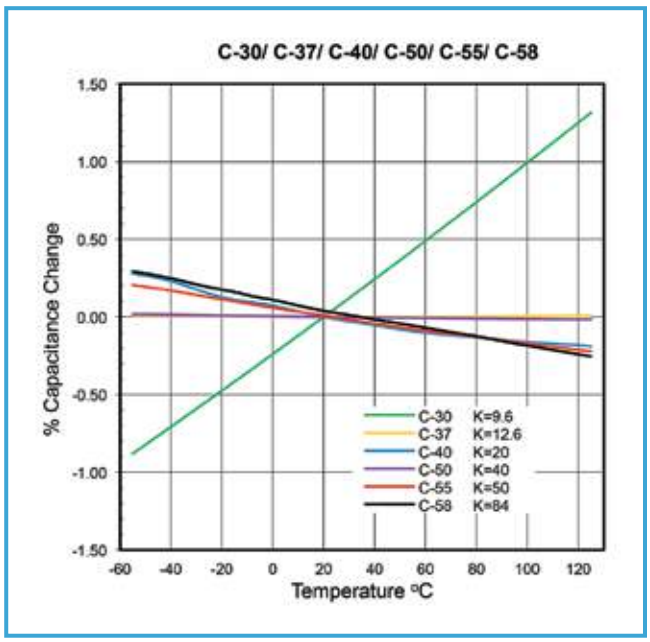


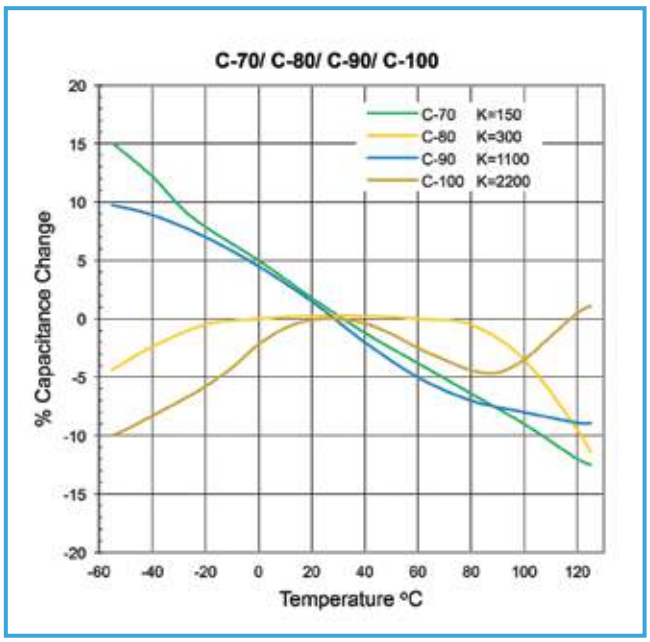
Circuit Diagram - Bi-Cap®

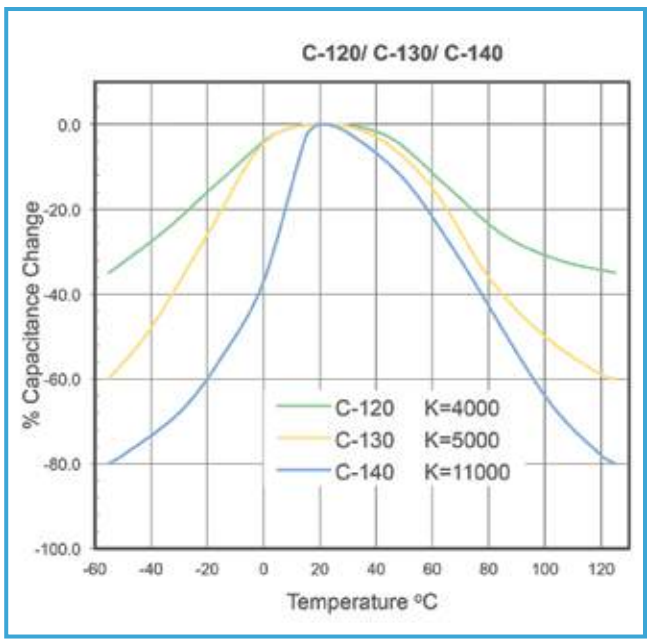


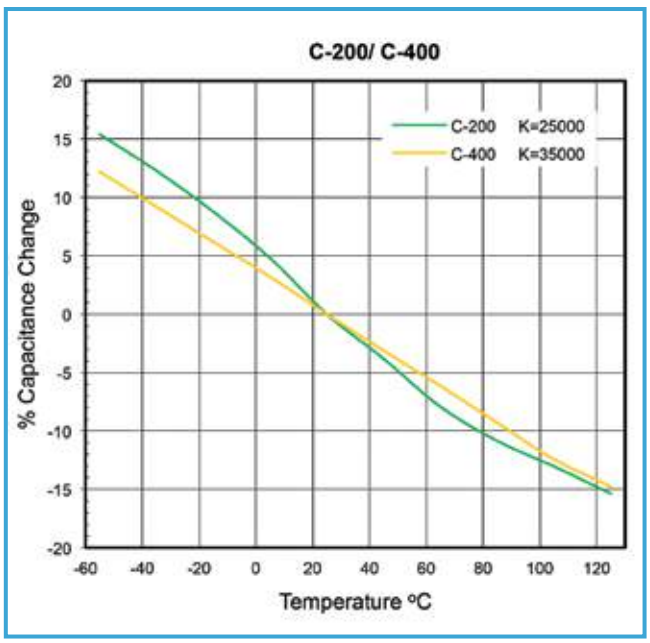
$C_1 = 1$
$C_2 = 2 \times C_1$
$C_3 = 4 \times C_1$
(4 pad - $C_4 = 8 \times C_1$)
Pads may be used singularly or in combination to tune circuit.

Typical Temperature Characteristics









CSA Selection Chart

Note: Selection Chart is for guidance only. All Compex parts are built to specific customer requirements.

Cap. (pF)	Capacitor Size in mils (mm)																	
	10 x 10 (.254 x .254)		12 x 12 (.305 x .305)		15 x 15 (.381 x .381)		20 x 20 (.508 x .508)		25 x 25 (.635 x .635)		30 x 30 (.762 x .762)		35 x 35 (.889 x .889)		40 x 40 (1.016 x 1.016)		50 x 50 (1.27 x 1.27)	
	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.
0.04	C-30	5	C-30	6	C-30	10									Class I Dielectrics			
0.06	C-30	4	C-30	5	C-30	8	C-20	5	C-20	10								
0.08	C-50	10	C-30	4	C-30	6	C-30	10	C-20	7	C-20	9						
0.1	C-50	8	C-50	11	C-30	5	C-30	9	C-20	5	C-20	7	C-20	10				
0.2	C-50	5	C-50	7	C-50	10	C-30	4	C-30	7	C-30	10	C-20	5	C-20	7	C-20	10
0.3	C-58	6	C-50	4	C-50	6	C-50	11	C-30	4	C-30	7	C-30	9	C-20	5	C-20	7
0.4	C-58	5	C-58	7	C-50	5	C-50	9	C-50	15	C-30	5	C-30	7	C-30	9	C-20	5
0.5	C-58	4	C-58	5	C-50	4	C-50	7	C-50	11	C-30	5	C-30	5	C-30	7	C-20	4
0.6	C-70	6	C-58	5	C-58	7	C-50	6	C-50	10	C-50	15	C-30	4	C-30	6	C-30	9
0.8	C-80	8	C-70	6	C-58	5	C-50	5	C-50	7	C-50	10	C-50	15	C-30	4	C-30	7
1	C-80	7	C-70	5	C-58	4	C-58	7	C-50	6	C-50	8	C-50	10	C-30	4	C-30	5
1.2	C-80	6	C-70	4	C-58	4	C-58	6	C-50	5	C-50	7	C-50	9	C-30	3	C-30	5
1.5	C-80	5	C-80	7	C-70	5	C-58	5	C-50	4	C-50	6	C-50	7	C-50	10	C-30	4
1.8	C-80	4	C-80	5	C-70	4	C-58	4	C-58	6	C-50	5	C-50	6	C-50	8	C-50	11
2	C-80	4	C-80	5	C-70	4	C-70	7	C-58	6	C-50	4	C-50	5	C-50	7	C-50	11
2.2	C-90	4	C-80	5	C-70	4	C-70	6	C-58	5	C-58	7	C-50	5	C-50	7	C-50	10
2.7	C-90	8	C-80	4	C-80	6	C-70	5	C-58	4	C-58	6	C-50	4	C-50	5	C-50	8
3.3	C-90	7	C-90	10	C-80	5	C-70	4	C-70	6	C-58	5	C-58	7	C-50	4	C-50	7
3.9	C-90	6	C-90	9	C-80	4	C-80	7	C-70	5	C-58	4	C-58	6	C-58	8	C-50	6
4.7	C-90	5	C-90	7	C-90	11	C-80	6	C-70	4	C-70	6	C-58	5	C-58	6	C-50	5
5.6	C-90	4	C-90	6	C-90	10	C-80	5	C-80	7	C-70	5	C-58	4	C-58	5	C-50	4
6.8	C-90	4	C-90	5	C-90	8	C-80	4	C-80	6	C-70	5	C-70	6	C-58	4	C-58	7
8.2	C-100	6	C-90	4	C-90	7	C-80	4	C-80	5	C-70	4	C-70	5	C-70	7	C-70	10
10	C-100	5	C-90	4	C-90	5	C-90	9	C-80	4	C-80	6	C-70	4	C-70	5	C-70	8
12	C-100	4	C-100	6	C-90	5	C-90	8	C-90	11	C-80	5	C-80	7	C-70	4	C-70	7
15	C-120	6	C-100	5	C-90	4	C-90	6	C-90	10	C-80	4	C-80	6	C-80	7	C-70	6
18	C-120	5	C-100	4	C-100	6	C-90	5	C-90	8	C-90	11	C-80	4	C-80	6	C-70	5
20	C-120	5	C-100	4	C-100	6	C-90	5	C-90	8	C-90	11	C-80	4	C-80	5	C-70	4
22	C-120	4	C-120	6	C-100	5	C-90	4	C-90	7	C-90	9	C-80	4	C-80	5	C-70	4
27	C-120	4	C-120	5	C-100	4	C-90	4	C-90	6	C-90	8	C-80	3	C-80	4	C-80	6
33	C-130	4	C-120	4	C-120	6	C-100	6	C-90	5	C-90	6	C-90	11	C-80	4	C-80	5
39	C-140	6	C-120	4	C-120	5	C-100	5	C-90	4	C-90	5	C-90	7	C-90	10	C-80	4
47	C-140	5	C-140	7	C-120	5	C-100	4	C-100	6	C-90	5	C-90	6	C-90	8	C-80	4
56	C-140	4	C-140	6	C-130	5	C-120	7	C-100	5	C-90	4	C-90	5	C-90	7	C-90	10
68	C-140	4	C-140	5	C-130	4	C-120	6	C-100	5	C-100	6	C-90	4	C-90	6	C-90	9
82	C-200	7	C-140	4	C-140	7	C-130	6	C-100	4	C-100	5	C-100	7	C-100	10	C-90	7
100	C-200	6	C-200	8	C-140	6	C-130	5	C-120	6	C-100	5	C-100	6	C-100	8	C-90	6
120	C-200	5	C-200	7	C-140	5	C-140	8	C-130	6	C-100	4	C-100	5	C-100	7	C-90	5
150	C-200	4	C-200	5	C-140	4	C-140	7	C-130	5	C-130	7	C-100	4	C-100	5	C-90	4
180	C-400	4	C-200	5	C-200	7	C-140	6	C-130	4	C-130	6	C-130	8	C-120	8	C-100	7
200	C-400	4	C-200	4	C-200	6	C-140	5	C-140	8	C-130	5	C-130	7	C-120	7	C-100	6
220	C-400	4	C-400	5	C-200	6	C-140	4	C-140	7	C-130	5	C-130	6	C-120	6	C-100	6
270			C-400	4	C-200	5	C-200	8	C-140	6	C-130	4	C-130	5	C-120	5	C-100	5
330					C-200	4	C-200	7	C-140	5	C-140	7	C-130	4	C-120	4	C-120	7
390					C-400	4	C-200	6	C-140	4	C-140	6	C-140	7	C-140	10	C-120	6
470					C-400	4	C-200	5	C-200	7	C-140	5	C-140	6	C-140	8	C-120	5
560							C-200	4	C-200	6	C-140	4	C-140	5	C-140	7	C-120	4
680							C-400	5	C-200	5	C-200	8	C-140	5	C-140	6	C-130	4
820							C-400	4	C-400	6	C-200	6	C-140	4	C-140	5	C-140	7
1000									C-400	5	C-200	5	C-200	7	C-140	4	C-140	6
1200									C-400	4	C-200	4	C-200	6	C-200	7	C-140	5
1500	Class II Dielectrics										C-400	5	C-200	5	C-200	6	C-140	4
1800											C-400	4	C-400	6	C-200	5	C-200	8
2200													C-400	5	C-200	4	C-200	6
2700													C-400	4	C-400	5	C-200	5
3300																	C-400	6

CSM Selection Chart

Note: Selection Chart is for guidance only. All Compex parts are built to specific customer requirements.

Cap. (pF)	Capacitor Size in mils (mm)																	
	10 x 10 (.254 x .254)		12 x 12 (.305 x .305)		15 x 15 (.381 x .381)		20 x 20 (.508 x .508)		25 x 25 (.635 x .635)		30 x 30 (.762 x .762)		35 x 35 (.889 x .889)		40 x 40 (1.016 x 1.016)		50 x 50 (1.27 x 1.27)	
	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.
0.04	C-30	4	C-30	4	C-30	5	C-20	5							Class I Dielectrics			
0.06	C-50	10	C-30	4	C-30	6	C-20	5	C-20	8	C-20	10						
0.08	C-50	7	C-50	10	C-30	5	C-30	10	C-20	6	C-20	8	C-20	11				
0.1	C-50	6	C-50	9	C-30	4	C-30	7	C-20	5	C-20	7	C-20	10				
0.2	C-58	4	C-50	4	C-50	5	C-30	4	C-30	5	C-30	7	C-20	4	C-20	5	C-20	10
0.3	C-70	6	C-58	5	C-50	4	C-50	8	C-30	4	C-30	5	C-30	7	C-20	4	C-20	6
0.4	C-70	4	C-58	4	C-58	6	C-50	6	C-50	10	C-30	4	C-30	5	C-30	7	C-20	5
0.5	C-80	5	C-70	4	C-58	5	C-50	4	C-50	7	C-50	10	C-30	4	C-30	6	C-30	10
0.6	C-80	5	C-70	5	C-58	4	C-50	4	C-50	6	C-50	10	C-30	4	C-30	5	C-30	7
0.8	C-80	5	C-80	5	C-70	5	C-58	6	C-50	5	C-50	7	C-50	10	C-30	4	C-30	6
1	C-80	4	C-80	5	C-70	4	C-58	5	C-50	4	C-50	6	C-50	8	C-50	10	C-30	5
1.2	C-90	6	C-80	5	C-80	7	C-58	4	C-58	7	C-50	5	C-50	7	C-50	10	C-30	4
1.5	C-90	7	C-80	4	C-80	6	C-70	6	C-58	6	C-58	8	C-50	6	C-50	7	C-50	15
1.8	C-90	6	C-80	4	C-80	5	C-70	5	C-58	5	C-58	7	C-50	5	C-50	7	C-50	10
2	C-90	6	C-90	8	C-80	4	C-70	5	C-58	5	C-58	6	C-50	4	C-50	6	C-50	10
2.2	C-90	5	C-90	7	C-80	4	C-80	7	C-70	7	C-58	6	C-50	4	C-50	5	C-50	10
2.7	C-90	5	C-90	6	C-80	4	C-80	6	C-70	6	C-58	6	C-58	8	C-50	5	C-50	8
3.3	C-100	6	C-90	6	C-90	8	C-80	5	C-70	5	C-58	4	C-58	6	C-58	7	C-50	6
3.9	C-100	5	C-90	5	C-90	7	C-80	4	C-70	4	C-70	6	C-58	5	C-58	6	C-50	5
4.7	C-100	5	C-90	5	C-90	7	C-80	4	C-80	6	C-70	5	C-58	4	C-58	5	C-58	8
5.6	C-100	5	C-100	6	C-90	5	C-80	4	C-80	5	C-70	4	C-70	6	C-58	5	C-58	7
6.8	C-120	5	C-100	6	C-90	5	C-90	8	C-80	5	C-80	7	C-70	5	C-70	7	C-58	6
8.2	C-120	4	C-100	5	C-90	4	C-90	7	C-80	4	C-80	6	C-70	4	C-70	5	C-58	5
10	C-120	5	C-100	4	C-100	6	C-90	6	C-80	4	C-80	5	C-80	6	C-70	5	C-58	4
12	C-120	5	C-120	6	C-100	5	C-90	5	C-90	8	C-80	4	C-80	6	C-70	4	C-70	6
15	C-120	4	C-120	5	C-100	5	C-90	5	C-90	7	C-80	4	C-80	5	C-80	6	C-70	5
18	C-130	4	C-130	6	C-120	7	C-100	7	C-90	5	C-90	9	C-80	4	C-80	5	C-70	4
20	C-140	5	C-130	5	C-120	6	C-100	6	C-90	5	C-90	8	C-80	4	C-80	5	C-70	4
22	C-140	7	C-130	4	C-120	5	C-100	6	C-90	5	C-90	7	C-90	10	C-80	4	C-80	6
27	C-140	6	C-130	4	C-130	5	C-100	5	C-90	4	C-90	6	C-90	8	C-80	4	C-80	5
33	C-140	5	C-140	6	C-130	4	C-100	4	C-100	6	C-90	5	C-90	7	C-90	9	C-80	5
39	C-140	4	C-140	5	C-130	4	C-120	6	C-100	6	C-90	4	C-90	6	C-90	8	C-80	4
47	C-200	8	C-140	5	C-140	6	C-120	5	C-100	5	C-100	7	C-90	5	C-90	7	C-90	11
56	C-200	6	C-140	4	C-140	5	C-130	5	C-100	4	C-100	6	C-90	4	C-90	6	C-90	9
68	C-200	5	C-200	8	C-140	5	C-130	4	C-120	6	C-100	5	C-90	4	C-90	5	C-90	7
82	C-400	6	C-200	6	C-140	4	C-130	4	C-120	5	C-100	4	C-100	6	C-90	4	C-90	6
100	C-400	5	C-200	6	C-140	4	C-140	6	C-130	5	C-120	6	C-100	5	C-100	7	C-90	5
120			C-200	5	C-200	6	C-140	5	C-130	4	C-130	6	C-100	4	C-100	5	C-90	4
150			C-200	6	C-200	6	C-140	4	C-140	7	C-130	5	C-130	7	C-100	4	C-100	7
180			C-400	5	C-200	5	C-140	4	C-140	6	C-130	4	C-130	6	C-100	4	C-100	6
200					C-400	5	C-140	4	C-140	6	C-130	4	C-130	5	C-120	6	C-100	5
220					C-400	5	C-200	8	C-140	5	C-130	4	C-130	5	C-120	5	C-100	5
270					C-400	5	C-200	6	C-140	4	C-140	7	C-130	4	C-130	6	C-100	4
330							C-200	5	C-140	4	C-140	5	C-140	7	C-130	5	C-120	6
390							C-200	5	C-200	6	C-140	5	C-140	6	C-130	4	C-120	5
470							C-200	4	C-200	6	C-140	4	C-140	5	C-140	7	C-130	5
560							C-400	5	C-400	6	C-140	4	C-140	5	C-140	6	C-130	4
680									C-400	6	C-200	6	C-140	4	C-140	5	C-140	8
820									C-400	5	C-200	5	C-200	8	C-140	4	C-140	7
1000											C-400	6	C-200	6	C-200	8	C-140	6
1200											C-400	5	C-200	5	C-200	7	C-140	5
1500	Class II Dielectrics												C-400	6	C-200	5	C-140	4
1800													C-400	5	C-400	6	C-200	7
2200															C-400	5	C-200	6
2700															C-400	5	C-200	5
3300																	C-400	5

CSB Selection Chart

Note: Selection Chart is for guidance only. All Compex parts are built to specific customer requirements.

Cap. (pF)	Capacitor Size in mils (mm)							
	20 x 10 (.508 x .254)		40 x 20 (1,016 x .508)		60 x 30 (1,524 x .762)		80 x 40 (2,032 x 1,016)	
	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.
	Class I Dielectrics							
0.06	C-50	6	C-30	6	C-20	6	C-20	8
0.08	C-50	4	C-30	4	C-20	4	C-20	7
0.1	C-58	7	C-50	15	C-30	8	C-20	5
0.2	C-70	6	C-50	7	C-30	4	C-30	7
0.3	C-80	8	C-50	5	C-50	10	C-30	4
0.4	C-80	6	C-58	7	C-50	8	C-50	15
0.5	C-80	5	C-58	6	C-50	7	C-50	10
0.6	C-80	4	C-58	5	C-50	6	C-50	9
0.8	C-90	11	C-70	6	C-50	4	C-50	7
1	C-90	9	C-70	5	C-58	7	C-50	6
1.2	C-90	7	C-70	4	C-58	6	C-50	5
1.5	C-90	6	C-80	7	C-58	5	C-58	8
1.8	C-90	5	C-80	6	C-58	4	C-58	6
2	C-90	4	C-80	5	C-58	4	C-58	6
2.2	C-90	4	C-80	5	C-70	6	C-58	5
2.7	C-100	7	C-80	4	C-70	5	C-58	4
3.3	C-100	6	C-90	11	C-70	4	C-70	6
3.9	C-100	5	C-90	9	C-80	7	C-70	5
4.7	C-100	4	C-90	8	C-80	5	C-70	4
5.6	C-120	6	C-90	6	C-80	5	C-80	7
6.8	C-120	5	C-90	5	C-80	4	C-80	6
8.2	C-130	5	C-90	4	C-90	11	C-80	5
10	C-130	4	C-100	7	C-90	9	C-80	4
12	C-140	8	C-100	6	C-90	7	C-90	11
15	C-140	6	C-100	5	C-90	6	C-90	9
18	C-140	5	C-100	4	C-90	5	C-90	8
20	C-140	5	C-120	7	C-90	4	C-90	7
22	C-140	4	C-120	6	C-90	4	C-90	6
27	C-200	8	C-120	5	C-100	7	C-90	5
33	C-200	6	C-130	5	C-100	6	C-100	9
39	C-200	5	C-130	4	C-100	5	C-100	8
47	C-400	6	C-140	8	C-100	4	C-100	6
56	C-400	5	C-140	7	C-120	6	C-100	5
68	C-400	4	C-140	5	C-120	5	C-120	8
82			C-140	4	C-130	5	C-130	8
100			C-200	8	C-130	4	C-130	7
120			C-200	7	C-140	8	C-130	6
150			C-200	5	C-140	6	C-130	5
180			C-200	5	C-140	5	C-140	8
200			C-400	6	C-140	5	C-140	7
220			C-400	5	C-200	9	C-140	7
270			C-400	4	C-200	8	C-140	6
330					C-200	6	C-140	5
390					C-200	5	C-200	9
470					C-400	6	C-200	7
560					C-400	5	C-200	6
680					C-400	4	C-200	5
820							C-400	6
1000							C-400	5
1200	Class II Dielectrics						C-400	4

CR/CM Selection Chart

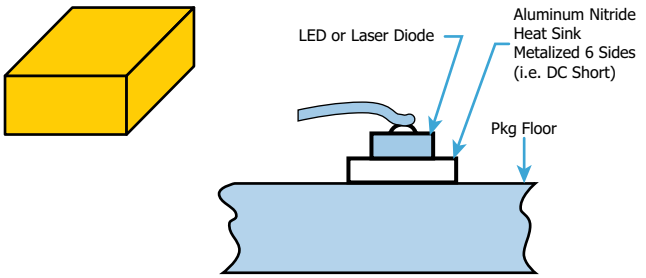
Note: Selection Chart is for guidance only. The square area and capacitance parameters are for a single pad.
All Compex parts are built to specific customer requirements.

Cap. (pF)	Capacitor Size in mils (mm)																	
	10 x 10 (.254 x .254)		12 x 12 (.305 x .305)		15 x 15 (.381 x .381)		20 x 20 (.508 x .508)		25 x 25 (.635 x .635)		30 x 30 (.762 x .762)		35 x 35 (.889 x .889)		40 x 40 (1.016 x 1.016)		50 x 50 (1.27 x 1.27)	
	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.	Diel.	Thick.
0.04	C-30	5	C-30	6	C-30	10									Class I Dielectrics			
0.06	C-30	4	C-30	5	C-30	8	C-20	5	C-20	10								
0.08	C-50	10	C-30	4	C-30	6	C-30	10	C-20	7	C-20	9						
0.1	C-50	8	C-50	11	C-30	5	C-30	9	C-20	5	C-20	7	C-20	10				
0.2	C-50	5	C-50	7	C-50	10	C-30	4	C-30	7	C-30	10	C-20	5	C-20	7	C-20	10
0.3	C-58	6	C-50	4	C-50	6	C-50	11	C-30	4	C-30	7	C-30	9	C-20	5	C-20	7
0.4	C-58	5	C-58	7	C-50	5	C-50	9	C-50	15	C-30	5	C-30	7	C-30	9	C-20	5
0.5	C-58	4	C-58	5	C-50	4	C-50	7	C-50	11	C-30	5	C-30	5	C-30	7	C-20	4
0.6	C-70	6	C-58	5	C-58	7	C-50	6	C-50	10	C-50	15	C-30	4	C-30	6	C-30	9
0.8	C-80	8	C-70	6	C-58	5	C-50	5	C-50	7	C-50	10	C-50	15	C-30	4	C-30	7
1	C-80	7	C-70	5	C-58	4	C-58	7	C-50	6	C-50	8	C-50	10	C-30	4	C-30	5
1.2	C-80	6	C-70	4	C-58	4	C-58	6	C-50	5	C-50	7	C-50	9	C-30	3	C-30	5
1.5	C-80	5	C-80	7	C-70	5	C-58	5	C-50	4	C-50	6	C-50	7	C-50	10	C-30	4
1.8	C-80	4	C-80	5	C-70	4	C-58	4	C-58	6	C-50	5	C-50	6	C-50	8	C-50	11
2	C-80	4	C-80	5	C-70	4	C-70	7	C-58	6	C-50	4	C-50	5	C-50	7	C-50	11
2.2	C-90	4	C-80	5	C-70	4	C-70	6	C-58	5	C-58	7	C-50	5	C-50	7	C-50	10
2.7	C-90	8	C-80	4	C-80	6	C-70	5	C-58	4	C-58	6	C-50	4	C-50	5	C-50	8
3.3	C-90	7	C-90	10	C-80	5	C-70	4	C-70	6	C-58	5	C-58	7	C-50	4	C-50	7
3.9	C-90	6	C-90	9	C-80	4	C-80	7	C-70	5	C-58	4	C-58	6	C-58	8	C-50	6
4.7	C-90	5	C-90	7	C-90	11	C-80	6	C-70	4	C-70	6	C-58	5	C-58	6	C-50	5
5.6	C-90	4	C-90	6	C-90	10	C-80	5	C-80	7	C-70	5	C-58	4	C-58	5	C-50	4
6.8	C-90	4	C-90	5	C-90	8	C-80	4	C-80	6	C-70	5	C-70	6	C-58	4	C-58	7
8.2	C-100	6	C-90	4	C-90	7	C-80	4	C-80	5	C-70	4	C-70	5	C-70	7	C-70	10
10	C-100	5	C-90	4	C-90	5	C-90	9	C-80	4	C-80	6	C-70	4	C-70	5	C-70	8
12	C-100	4	C-100	6	C-90	5	C-90	8	C-90	11	C-80	5	C-80	7	C-70	4	C-70	7
15	C-120	6	C-100	5	C-90	4	C-90	6	C-90	10	C-80	4	C-80	6	C-80	7	C-70	6
18	C-120	5	C-100	4	C-100	6	C-90	5	C-90	8	C-90	11	C-80	4	C-80	6	C-70	5
20	C-120	5	C-100	4	C-100	6	C-90	5	C-90	8	C-90	11	C-80	4	C-80	5	C-70	4
22	C-120	4	C-120	6	C-100	5	C-90	4	C-90	7	C-90	9	C-80	4	C-80	5	C-70	4
27	C-120	4	C-120	5	C-100	4	C-90	4	C-90	6	C-90	8	C-80	3	C-80	4	C-80	6
33	C-130	4	C-120	4	C-120	6	C-100	6	C-90	5	C-90	6	C-90	11	C-80	4	C-80	5
39	C-140	6	C-120	4	C-120	5	C-100	5	C-90	4	C-90	5	C-90	7	C-90	10	C-80	4
47	C-140	5	C-140	7	C-120	5	C-100	4	C-100	6	C-90	5	C-90	6	C-90	8	C-80	4
56	C-140	4	C-140	6	C-130	5	C-120	7	C-100	5	C-90	4	C-90	5	C-90	7	C-90	10
68	C-140	4	C-140	5	C-130	4	C-120	6	C-100	5	C-100	6	C-90	4	C-90	6	C-90	9
82	C-200	7	C-140	4	C-140	7	C-130	6	C-100	4	C-100	5	C-100	7	C-100	10	C-90	7
100	C-200	6	C-200	8	C-140	6	C-130	5	C-120	6	C-100	5	C-100	6	C-100	8	C-90	6
120	C-200	5	C-200	7	C-140	5	C-140	8	C-130	6	C-100	4	C-100	5	C-100	7	C-90	5
150	C-200	4	C-200	5	C-140	4	C-140	7	C-130	5	C-130	7	C-100	4	C-100	5	C-90	4
180	C-400	4	C-200	5	C-200	7	C-140	6	C-130	4	C-130	6	C-130	8	C-120	8	C-100	7
200	C-400	4	C-200	4	C-200	6	C-140	5	C-140	8	C-130	5	C-130	7	C-120	7	C-100	6
220	C-400	4	C-400	5	C-200	6	C-140	4	C-140	7	C-130	5	C-130	6	C-120	6	C-100	6
270			C-400	4	C-200	5	C-200	8	C-140	6	C-130	4	C-130	5	C-120	5	C-100	5
330					C-200	4	C-200	7	C-140	5	C-140	7	C-130	4	C-120	4	C-120	7
390					C-400	4	C-200	6	C-140	4	C-140	6	C-140	7	C-140	10	C-120	6
470					C-400	4	C-200	5	C-200	7	C-140	5	C-140	6	C-140	8	C-120	5
560							C-200	4	C-200	6	C-140	4	C-140	5	C-140	7	C-120	4
680							C-400	5	C-200	5	C-200	8	C-140	5	C-140	6	C-130	4
820							C-400	4	C-400	6	C-200	6	C-140	4	C-140	5	C-140	7
1000									C-400	5	C-200	5	C-200	7	C-140	4	C-140	6
1200									C-400	4	C-200	4	C-200	6	C-200	7	C-140	5
1500											C-400	5	C-200	5	C-200	6	C-140	4
1800	Class II Dielectrics										C-400	4	C-400	6	C-200	5	C-200	8
2200													C-400	5	C-200	4	C-200	6
2700													C-400	4	C-400	5	C-200	5
3300																	C-400	6

SLC - Heatsinks, Standoffs & Submounts

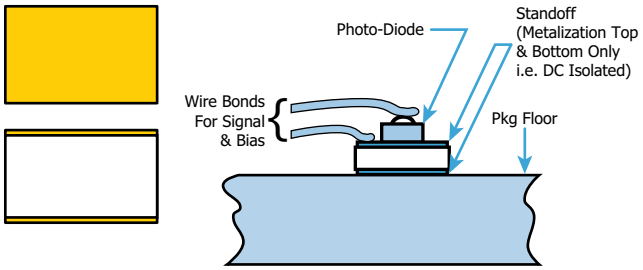
Heatsinks

- Heatsinks are fully metallized on all sides and are used to dissipate and absorb heat
- Heatsinks allow for high thermal conductivity and are electrically conductive (DC short)
- Typically used with LED's or laser diodes



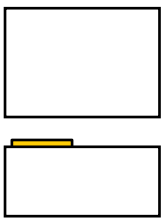
Standoffs

- A Standoff is much like a Heatsink however it is typically metallized on only the top and bottom surfaces
- Each device is custom tailored to the customer's specifications and is typically used with LED's or Photo Diodes (works as a photo detector, light is allowed in through fibers)



Submounts

- Submounts are ceramic LED package bases which minimize thermal resistance between LED junctions and adjacent components
- By reducing junction temperatures, an LED will produce increased efficiency, brightness, color and reliability
- Each device is custom tailored to the customer's specifications



Material Specifications

Material Code	Relative ξr* @ 5 GHz	TCC†Loss ppm/°C	Coefficient of Tangent* % Max	Thermal Thermal Expansion ppm/°K	Conductivity W/m-°K
AG	8.85 ± 0.35 (@ 1MHz)	Aluminum Nitride	0.10	4.6	140-180
PI	9.9 ± 0.15 (@ 1MHz)	Alumina 99.6%	0.01	6.5 - 7.5	27

*Unless otherwise specified K dielectric measurement at approximately 5 GHz. †For the temperature range -55 to 125°C. **Material only provided metalized.

Surface Finish

Code	Roughness R_a	Material Process
X	>50 µ in.	As-Fired
Y	20 µ in.	Machined
Z	<5 µ in.	Polished
S	Special	Drawing required

Metallization

Code	Description
M	300 Angstroms TiW, 100 µ in. min. Au
P	75 µ in. min. Nickel, 100 µ in. min. Au
E	Metallized and etched per Customer drawing
T	300 Angstroms min. TiW, 50 µ in. min. NiV, 300 µ in. min. Au-Sn
D	SPECIAL, DLI Design per Customer Requirements

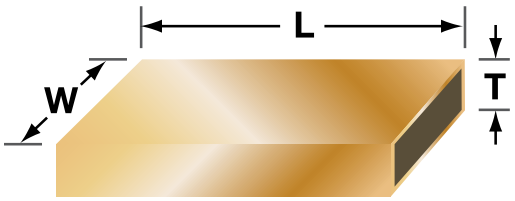
MST Series - Mounting Shorts

Alumina mounting shorts (or Aluminum Nitride for improved thermal properties), with metallization on the top, bottom and two of four sides, allow placement of a wirebond anywhere in the circuit, replacing the need for gold terminations on the substrate. They also can be used to raise the ground plane, reducing lead length for reduced inductance for high-speed/frequency applications, or to dissipate heat from under an IC or laser chip.

Description

- Instant bonding pads
- Fully conductive
- Height matching
- Replaces moly-tabs
- Any size available, as small as .003" X .003"

MST Chip Dimensions



Dimensional Tolerance: Standard is .001" for length, width and thickness. Tighter tolerances down to .0003" are available for thickness .0005" and greater.

For <.0005" consult factory for available tolerances.

Wirebond

Raised Plane

Our ceramic mounting shorts are excellent replacements for kovar and moly-tabs. These ceramic shorts have a much sharper edge and are flat stable bases for mounting semiconductors.

Ordering information - MST Series - Mounting Shorts

MST	30	25	x 20	x 6	G	S	5
Cap Style	Material	Length (mils)	Width (unmetallized side) (mils)	Thickness (mils)	Metallization	Cut to Size	Thickness Tolerance
				3 to +100 mils	**G** = Gold **Custom**		(only utilized if <.001"; figure represents tenths of a mil)

Example Shown: Compex Series MST, dielectric type C-30, .025" x .020" x .006", gold, cut to size, .0005" thickness tolerance

Kits available for design development

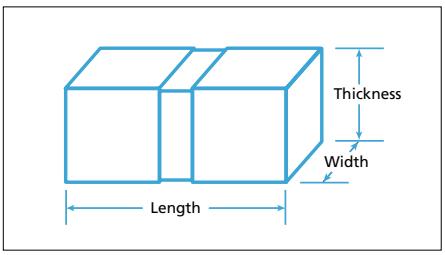
Milli-Cap® - Ideal SMT Capacitor

Electrical characteristics - Milli-Cap®

Part Number	Value (pF)	Voltage Rating	TCC	Dissipation Factor (Max)	Insulation Resistance (Min)	Frequency Range
P21BN300M5S	30	50	± 15%	3.5%	10^5 MΩ	20MHz – 40GHz
P42BN820M5S	82	50	± 15%	3.5%	10^5 MΩ	20MHz – 40GHz
P42NR2R0K5S	2	50	N1500 ± 500ppm/°C	0.25%	10^6 MΩ	4GHz – 20GHz
P42CG1R5C5S	1.5	50	0 ± 30ppm/°C	0.7%	10^6 MΩ	8GHz – 32GHz
P62BN820M5S	82	50	± 15%	3.5%	10^5 MΩ	20MHz – 40GHz
P62NV100M5S	10	50	N4700 ± 1000ppm/°C	1.2%	10^6 MΩ	4GHz – 20GHz
P62CG1R0C5S	1	50	0 ± 30ppm/°C	0.7%	10^6 MΩ	18GHz – 40GHz
P62CD0R7B5S	0.7	50	N20 ± 15ppm/°C	0.15%	10^6 MΩ	20GHz – 40GHz
P62CF0R5B5S	0.5	50	0 ± 15 ppm/°C	0.6%	10^6 MΩ	28GHz – 40GHz

Dimensional specifications - Milli-Cap®

Case size	Milli-Cap®		
	Length	Width	Thickness
P21 (0201)	0.020″ ± 0.004″	0.012″ ± 0.002″	0.010″ ± 0.002″
P42 (0402)	0.038″ ± 0.004″	0.020″ ± 0.002″	0.020″ ± 0.002″
P62 (0602)	0.058″ ± 0.004″	0.020″ ± 0.002″	0.020″ ± 0.002″



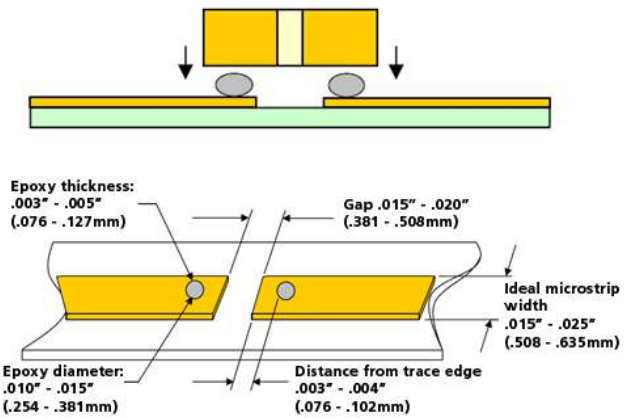
Attachment methods - Milli-Cap®

Recommended attachment to soft or hard substrate using Conductive Epoxy

1. Place a single drop of conductive epoxy onto each micro strip as illustrated; the edge of the epoxy shall be at least .003”- .004” back from the edge of the trace to prevent filling the gap with epoxy.
2. Centering the termination gap of the capacitor within the gap in the micro strip, press with careful, even pressure onto the micro strip ensuring the terminations make good contact with the epoxy drops.
3. Cure according to the epoxy manufacturer’s preferred schedule, typically 125°C to 150°C max.
4. After curing, inspect joint for epoxy shorts across the termination and micro strip gaps that would cause a short across the cap.

Isopropanol and Methanol are both safe to use to pre clean Milli-Caps®.

Isopropanol, and Methanol are not to be used after mounting with conductive epoxy as they act as a solvent!



Recommended attachment to soft or hard substrate using Solder

1. Place a single drop of solder paste onto each micro strip as illustrated; the edge of the solder shall be at least .001”- .002” back from the edge of the trace to prevent filling the gap with solder.
2. Centering the termination gap of the capacitor within the gap in the micro strip, press with careful, even pressure onto the micro strip ensuring the terminations make good contact with the drops of solder paste.
3. Reflow according to the solder manufacturer’s preferred profile, ensuring the reflow temperature does not exceed 250°C.
4. After the reflow step is completed, inspect joint for voids or excess flux and non-reflowed solder balls that can degrade performance or cause shorts across the gaps. Proper cleaning after the reflow process is crucial to avoiding performance degradation and discovering poor solder joints.

Isopropanol and Methanol are both safe to use with soldered Milli-Caps®.

Dimensional specifications - Opti-Cap®

Case size	Milli-Cap®			MLC		
	Length	Width	Thickness	Length	Width	Thickness
P21 (0201)	0.020″ ± 0.004″	0.012″ ± 0.002″	0.010″ ± 0.002″	0.022 ± 0.002″	0.010 ± 0.001″	0.010 ± 0.002″
P42 (0402)	0.038″ ± 0.004″	0.020″ ± 0.002″	0.020″ ± 0.002″	0.040 ± 0.002″	0.020 ± 0.002″	0.020 ± 0.002″
P62 (0602)	0.058″ ± 0.004″	0.020″ ± 0.002″	0.020″ ± 0.002″	0.067 ± 0.004″	0.031 ± 0.004″	0.031 ± 0.005″

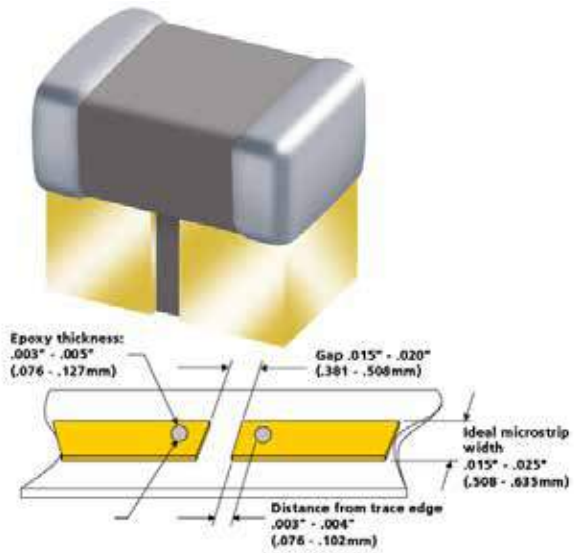
Attachment methods - Opti-Cap®

Recommended attachment to soft or hard substrate using Conductive Epoxy

1. Place a single drop of conductive epoxy onto each micro strip as illustrated; the edge of the epoxy shall be at least .003”-.004” back from the edge of the trace to prevent filling the gap with epoxy.
2. Centering the termination gap of the capacitor within the gap in the micro strip, press with careful, even pressure onto the micro strip ensuring the terminations make good contact with the epoxy drops.
3. Cure according to the epoxy manufacturer’s preferred schedule, typically 125°C to 150°C max.
4. After curing, inspect joint for epoxy shorts across the termination and micro strip gaps that would cause a short across the cap.

Isopropanol and Methanol are both safe to use to pre clean Opti-Caps®.

Isopropanol, and Methanol are not to be used after mounting with conductive epoxy as they act as a solvent!



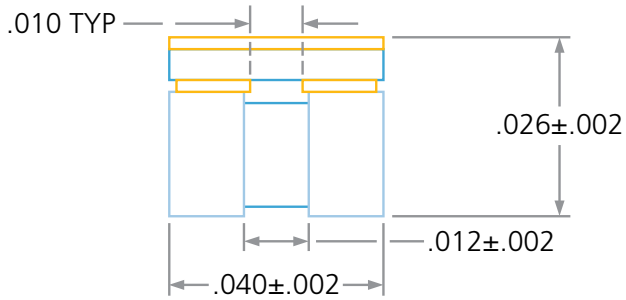
Recommended attachment to soft or hard substrate using Solder

1. Place a single drop of solder paste onto each micro strip as illustrated; the edge of the solder shall be at least .001”-.002” back from the edge of the trace to prevent filling the gap with solder.
2. Centering the termination gap of the capacitor within the gap in the micro strip, press with careful, even pressure onto the micro strip ensuring the terminations make good contact with the drops of solder paste.
3. Reflow according to the solder manufacturer’s preferred profile, ensuring the reflow temperature does not exceed 250°C.
4. After the reflow step is completed, inspect joint for voids or excess flux and non-reflowed solder balls that can degrade performance or cause shorts across the gaps.

   Proper cleaning after the reflow process is crucial to avoiding performance degradation and discovering poor solder joints.

Isopropanol and Methanol are both safe to use with soldered Opti-Caps®.

Dimensions - PX Series Broadband Blocking Device



Attachment Method - PX Series - Broadband Blocking Device

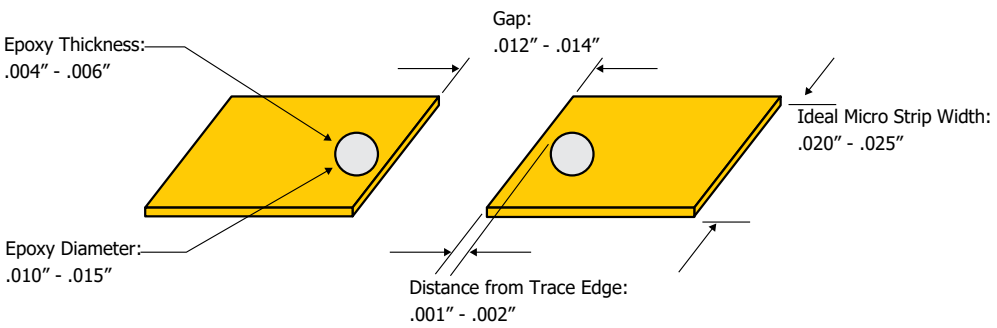
Recommended attachment to soft or hard substrate using Solder:
Recommended Micro Strip Layout:

1. Place a single drop of solder paste onto each micro-strip as illustrated; the edge of the solder shall be at least .001"-.002" back from the edge of the trace to prevent filling the gap with solder.
2. Centering the termination gap of the capacitor within the gap in the micro strip, press with careful, even pressure onto the micro strip ensuring the terminations make good contact with the drops of solder paste.
3. Reflow according to the solder manufacturer's preferred profile, ensuring the reflow temperature does not exceed 260°C.
4. After the reflow step is completed, inspect joint for voids or excess flux and non-reflowed solder balls that can degrade performance or cause shorts across the gaps. Proper cleaning after the reflow process is crucial to avoiding performance degradation and discovering poor solder joints.

Isopropanol and Methanol are both safe to use with soldered units.

Mounting:

The part is designed for surface mounting using conventional reflow soldering techniques. In accordance with normal recommendations for ceramic MLCC's, hand soldering should be avoided as soldering irons could cause thermal damage or disconnections within the device. If rework or manual placing is necessary, then the use of a hot air pencil is recommended. Preheating the board can assist with manual soldering. Pb free compatible.



SLC - Gain Equalizers

Series Description

DLI's Gain Equalizers are designed as a small, low cost solution to your gain slope challenges. These equalizer designs employ a monolithic construction with precision thin-film conductor and resistor films with proprietary high dielectric constant ceramics for superior RF performance and repeatability. Components are well suited for use with pick and place equipment.

Available in tape and reel packaging for high volume applications.

Applications

- Broadband Microwave Modules; EW, ECM, ECCM
- Equalizer is utilized as a compensation circuit to correct for a loss slope created by other elements within a circuit such as in amplifier stages

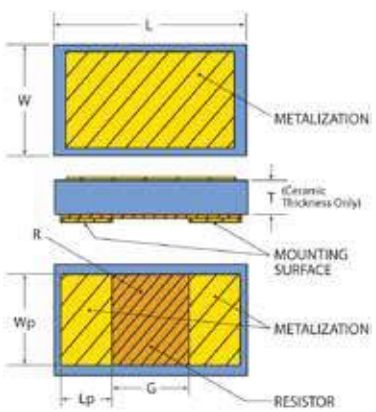
Benefits

- Low Excess Insertion Loss
- Footprint interchangeable part series, gain slopes from 1 to 3.5 dB
- Superior, repeatable microwave performance
- Ease of assembly; terminations are compatible with solder SMT and conductive epoxy assembly
- Package optimized for typical 50 Ω transmission line width
- No ground connection required

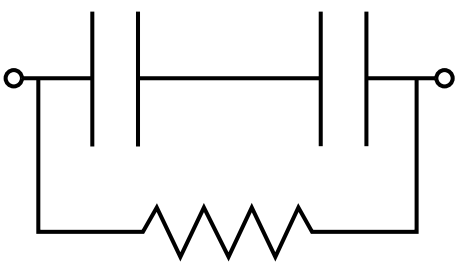
Part Number		L	W	T	Lp	Wp	G	Nominal Slope
Epoxy	Solderable							
AEQ2050	AEQ05510	30 ± 2	18 ± 2	5 ± 1	9 ± 1	14 ± 1	8 ± 1	2.25 dB
AEQ2199	AEQ05246	28 ± 2	16 ± 2	7 ± 1	7 ± 1	14 ± 1	12 ± 1	3.5 dB
AEQ2234	AEQ06042	32 ± 2	16 ± 2	5 ± 1	8 ± 1	12 ± 1	12 ± 1	3.25 dB
AEQ3042	AEQ3042	40 ± 2	20 ± 2	6 ± 1	17.5 ± 1	17.5 ± 1	3 ± 1	0.6 dB
AEQ3055	AEQ3055	40 ± 2	20 ± 2	6 ± 1	15.4 ± 1	18.4 ± 1	7.2 ± 1	1.5 dB
AEQ05467	AEQ05467	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	1.0 dB
AEQ05468	AEQ05468	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	1.5 dB
AEQ05469	AEQ05469	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	2.0 dB
AEQ05470	AEQ05470	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	2.5 dB
AEQ05471	AEQ05471	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	3.0 dB
AEQ05472	AEQ05472	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	3.5 dB

All dimensions in mils. Mechanical outline drawings for equalizers listed above are available. Please contact DLI Applications Engineering for details.

Physical Dimensions



Equivalent Schematic Representation



Miniature RF Blocking Network

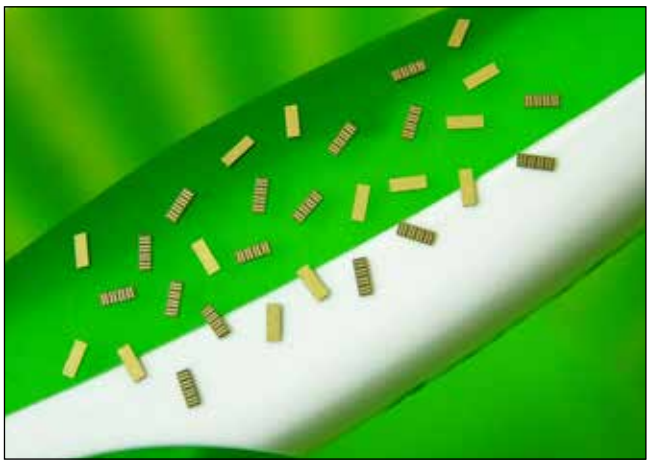
Description

For RF Noise Suppression in high speed mixed signal semiconductor devices

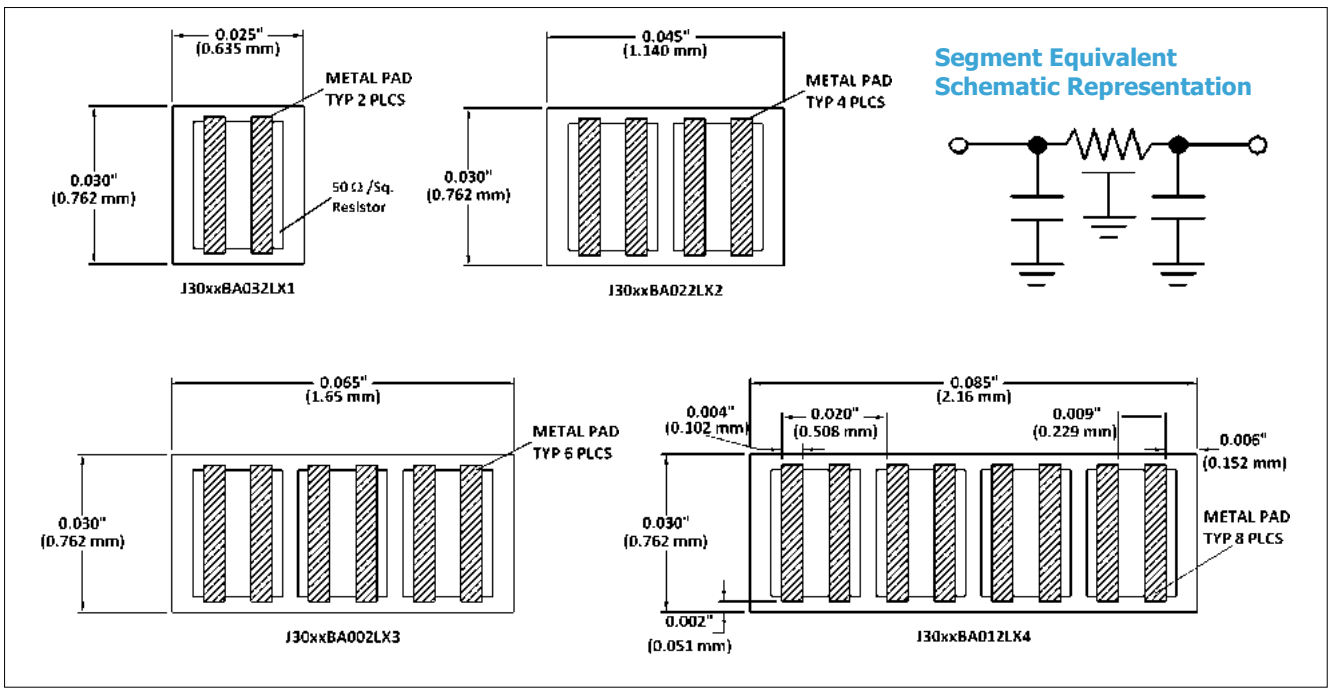
- Eliminates Noise at I/O Pins
- Replaces Large Decoupling Capacitor
- with Superior Performance
- Clean DC Lines Beyond 18 GHz

Functional Applications

- High Speed Digital • Mixed Signal IC's
- Suppression of Noise on DC Supply Lines
- MCM and Hybrid Modules
- X7R Temperature and Voltage Stability



Layout and Dimensions



Material and Electrical Characteristics

Material Code	Capacitance (typical)	Resistance (pad to pad)	DF	TCC	Rated Voltage
BL	30 pF	10Ω Nom.	3.0% Max.	X7R	25 Vdc
BJ	45 pF	10Ω Nom.	3.0% Max.	X7R	25 Vdc

Ordering information - Miniature RF Blocking Network

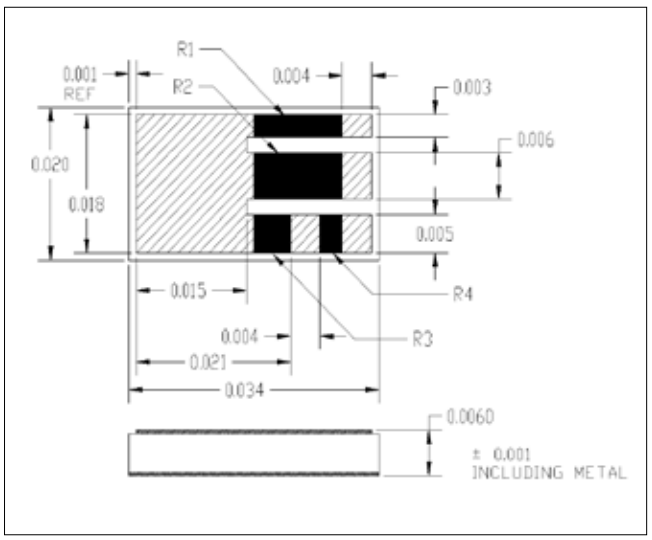
J	30	BL	BA01	2	L	X	4
Product	Width (mils)	Material	Internal Drawing Reference	Voltage	Metallization	Test Level	Number of RC Segments
J = Blocking Network		**BL** **BJ**		**2** = 25 Vdc	100µ" Gold Finish	Commercial	

Self Bias Network

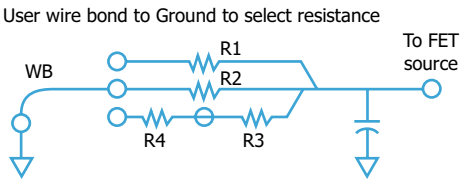
Description

- Wireless communication modules
- MIC broadband high gain RF/Microwave module
- Bias line voltage divider and integrated decoupling capacitor
- Simplifies assembly with 1 component
- Improves gain flatness and stability in GaAs FET
- Miniature size: .020 x .034 (.5mm x .86mm)

Physical Characteristics



Equivalent Schematic Representation



Resistor Values:
R1 - 200Ω
R2 - 100Ω
R3 - 50Ω
R4 - 20Ω

Nominal Capacitance:
50pF

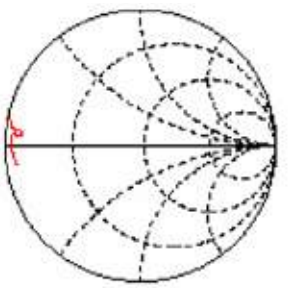
Typical application requires 2 networks

Recommended Mounting: The Self Bias Network should be mounted with fully metalized side down directly on the RF ground plane for best performance.

Ordering information - Self Bias Network

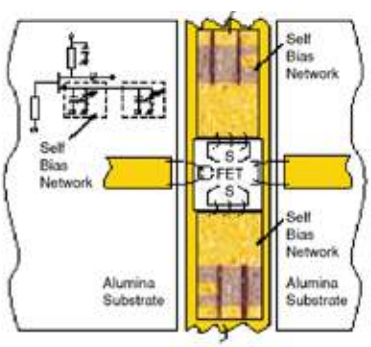
B	28	BL	SBN01
Product	Width (mils)	Material	Network Type
B = Bias Network	**28**	**BL** ±25% TC	

Physical Characteristics

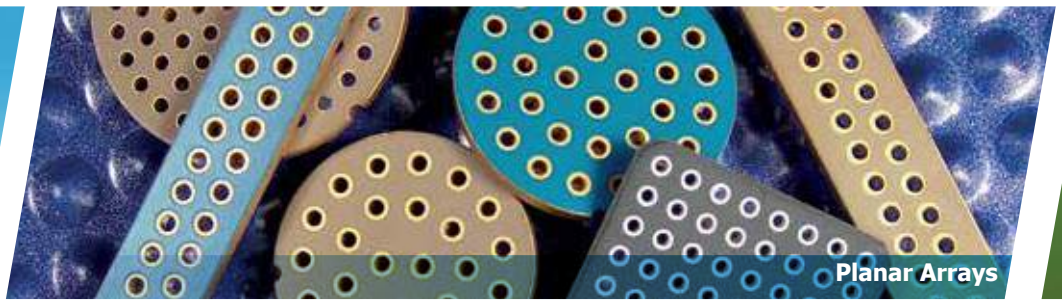


Typical S11
Frequency Range: 1.0 to 20 GHz
Reflection Coefficient: 50Ω Normalized

Typical Application



Note: Custom Networks can be designed per customer specification. Please consult factory for additional information or special requirements.



Other products available

www.knowlescapacitors.com

PRECISION DEVICES

knowles

COMPEX • DLI • JOHANSON MFG
NOVACAP • SYFER • VOLTRONICS

Asian Sales Office

O: +86 512 62588258
F: +86 512 62589258
KPD-Asia-sales@knowles.com

European Sales Office

O: +44 1603 723300
F: +44 1603 723301
KPD-Europe-sales@knowles.com

North American Sales Office

O: +1 661 295 5920
F: +1 661 295 5928
O: +1 315 655 8710
F: +1 315 655 0445
KPD-NA-sales@knowles.com

10655/SLC/18

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Speciality Ceramic Capacitors ***category:***

Click to view products by Knowles ***manufacturer:***

Other Similar products are found below :

715CPP403CP571ZK02 416462360 275.546-505800 715C15KTD19 715C20KTD14 715C30KTT94 118FBB1R0B100TT CSM-50-40X40X4-G-3R3-D B58035U9504M052 416461020 416461150 416463050 416463100 KJF-4.82/480 KTF-1.5/400 416461030 416461050 416461080 416463260 416464310 416466150 275.100-10180 275.278-513700/221K02 275.258-411000/221K02 715C10DKS20 116ZM103M050TT 116RF100M100TT 116RK101M100TT 116UL102M100TT 116TK221M100TT 111TG101M100TT 275.256-508300/221K02 275.258-410000/221K02 275.525-402800 316523360 316523370 415047015 415047018 415047225 416300564 416303764 416305664 416461360 416531100 416533250 416533300 416533350 416534250 416463083 275.288-614300/221K75