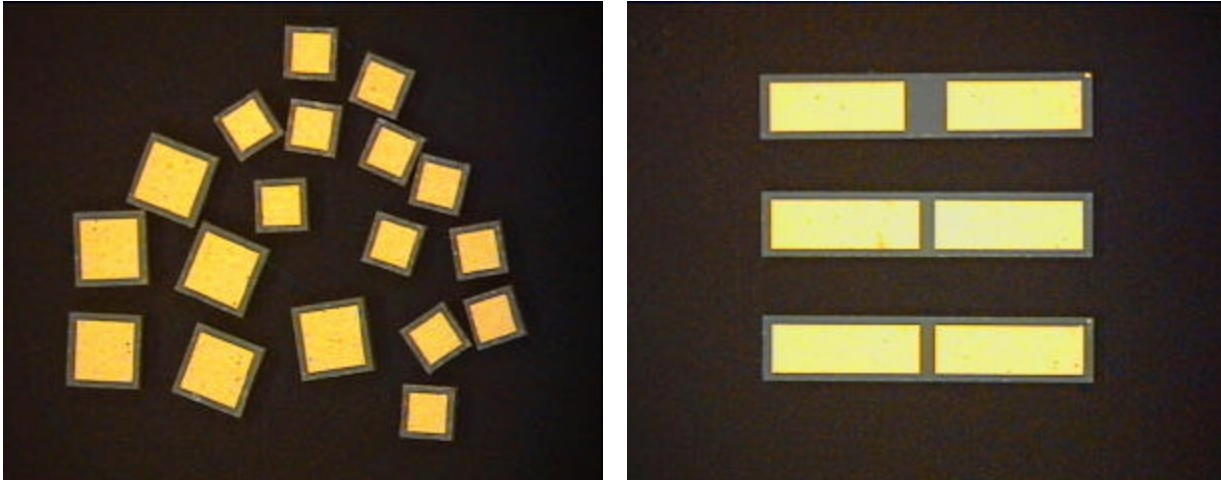


Single Layer Ceramic (SLC) Capacitors



Nanowave Overview

Nanowave Technologies Inc. utilizes its vertically integrated thin film technologies to build Passive Microwave Components. Our Single Layer Ceramic (SLC) Capacitors, using proprietary thin film metalization, are highly reliable. These SLCs are designed for reliable automated wire and ribbon bonding, and are suitable for epoxy, AuSn or PbSn die attach. Configuration can be either single element or multiple capacitors on a single chip in array form. In addition to catalog devices, Nanowave builds components to customer requirements.

Key Features

- DC to 50 GHz
- Temperature Stable (+/- 15%)
- Design for automatic pick and place
- High bond pull strength for ribbon and wire bonds (Exceeds Mil-Std-883)
- Low profile (0.004 in.) for high frequency DC blocks.
- Eutectic or epoxy attachable
- Border (or non-border) configuration
- 15 pF to 560 pF

Applications

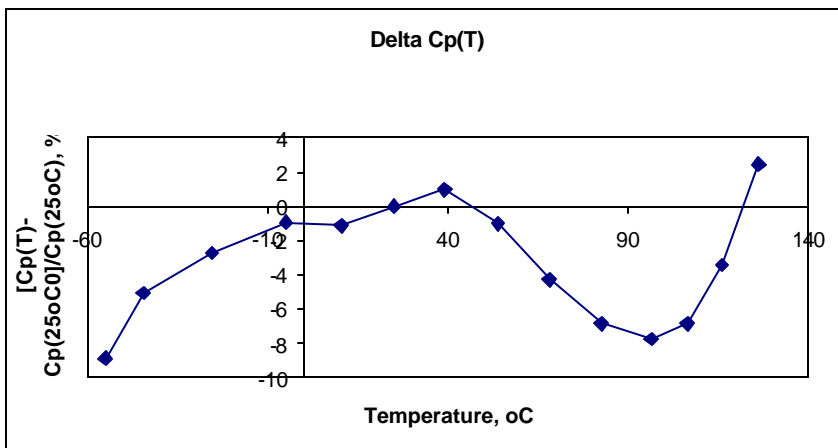
- MMIC packaging
- High Capacitance for By Pass
- Hybrid Microelectronics
- High Frequency DC blocks

Parameter	Units	Values
Capacitance	pF	15 to 560
Capacitance Tolerance	%	+/-10
Operating Temperature. Range	°C	-55 to +125
Temperature Coefficient	%	+/-15; +/-25
Rated Voltage	V	50
Construction		Single Layer Ceramic
Metalization		TiW/Ni/Au; TiW/Au
Dimension Tolerance		+/-0.002”L +/-0.003”W
Qualification		MIL-STD-883 MIL-C-49464

Qualification Tests

Test	Military Specification	Paragraph or Method	Result
Bond Strength	Mil-Std-883	2011	1 mil gold wire, >9 gm
Die Shear Strength	Mil-Std-883	2019	Exceeded
Thermal Shock	Mil-Std-202	107	Passed
Voltage Conditioning	Mil-C-49464	4.7.2	Passed
Dielectric Withstanding Voltage	Mil-Std-202	301	2.5X rated voltage
Insulation Resistance	Mil-Std-202	302	>10 ¹¹ ohm
Low Voltage Humidity	Mil-C-49464	4.7.17	Passed
Life and Reliability	Mil-Std-883	1016	Passed

Temperature Coefficient of Capacitance



Standard Capacitor Dimensional Information

Capacitance (pF)	Size Code (LxW, mil)	Thickness (mil)
7.5	1515	6
12	1515	6
15	1515	6
18	1515	6
20	1515	6
22	1515	6
27	1515	6
33	1515	6
39	1515	6
47	2020	6
51	2020	6
56	2020	6
68	2020	6
75	2020	5
82	2020	5
100	2020	4
100	2525	6
120	2525	4
120	2525	5
150	2525	4
150	3030	6
180	3030	4
200	3030	4
220	3030	4
220	4040	6
270	3535	4
330	4040	4
390	4040	4
470	5050	4
560	5050	4
Array Capacitor		
2x150	110x20	6
2x150	80x20	5
3x120	110x20	5
4x120	120x20	4

How to Order

Example: 100pF SLC (SB1A100K04G50V20x20)

Type	No. of Elements	Dielectric Type	Value per Element	Tolerance	Thickness	Surface Metalization	Voltage	Length & Width
SB	1	A	100	K	04	G	50V	20X20

<p>Type: SB=Single layer Border SN=Single layer No Border</p> <p>No. of elements: 1=single 2=1x2 3=1x3 4=1x4</p> <p>Dielectric type A : Temperature coefficient +/-15% (-55°C to +125°C) B : Temperature coefficient +/-25% (-55°C to +125°C)</p> <p>Value per Element: Capacitance per element in pF (3 number code).</p>	<p>Tolerance: Per EIA Standard G=+/-2% J=+/-5% K=+/-10% M=+/-20%</p> <p>Thickness: Dielectric thickness in Mils. (2 number code)</p> <p>Surface metalization : Top and Bottom metalization G=Ni/Au</p> <p>Rated Voltage: 16V, 50V</p> <p>Length & Width: External length dimension in Mils. (1st 2-3 numbers in code) External width dimension in Mils. (2nd 2-3 numbers in code)</p>
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CAPACITOR CONSTRUCTION

