

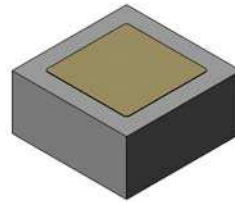
# Chip Capacitors

## 90 Series Datasheet



### Features

- High Working Voltage: 50 V
- Wide Range of Capacitance: 2 to 600 pF
- Excellent Stability
- RoHS Compliant



### Applications

- DC block, RF bypass

### DESCRIPTION

The Aeroflex / Metelics 90 series of chip capacitors features silicon nitride/silicon dioxide dielectric layers for high reliability and stable capacitance over time. These metal-insulator-semiconductor (MIS) capacitors have high insulation resistance and low dissipation factor for excellent high frequency performance and reliability. Capacitors are available with capacitance from 2 pF up to 600 pF. The working voltage of the 90 series is 50 V.

The top contact and backside terminals are gold.

Capacitors from this family of rugged devices are capable of reliable operation in all military, commercial and industrial applications. They are RoHS compliant.

### Environmental Capabilities

The 90 series chip capacitors are capable of meeting the environmental requirements of MIL-STD-750 and MIL-STD-883.

### ESD Rating

Chip capacitors are susceptible to damage from ESD events. Proper ESD prevention procedures should be followed. The ESD rating for this family of devices is Class 0 (HBM).

### Part Number

The part number for the 90 family of chip capacitors consists of 6 characters. The left most two characters identify the product family. Characters in positions 3, 4 and 5 indicate the nominal capacitance value of the capacitor, in pF. The rightmost character indicates the capacitance tolerance.

For example, part number 9010RK describes a chip capacitor with the following characteristics:

- "90" indicates working voltage is 50 V
- "10R" indicates the nominal capacitance value is 10.0 pF (the character "R" represents the radix point)
- "K" indicates the capacitance tolerance is  $\pm 10\%$  of the nominal value



## Capacitance Values

Working Voltage = 50 V

Model Number	Capacitance (pF)
902R0 through 9010R	2 to 10
9011R through 9029R	11 to 29
9030R through 9049R	30 to 49
9050R through 9099R	50 to 99
90100 through 90199	100 to 199
90200 through 90399	200 to 399
90400 through 90600	400 to 600

## Capacitance Tolerance

Capacitance Tolerance Indicator	Capacitance Tolerance
A	± 0.05 pF
B	± 0.1 pF
C	± 0.25 pF
D	± 0.5 pF
F	± 1%
G	± 2%
J	± 5%
K (standard tolerance value)	± 10%
M	± 20%

## Absolute Maximum Ratings

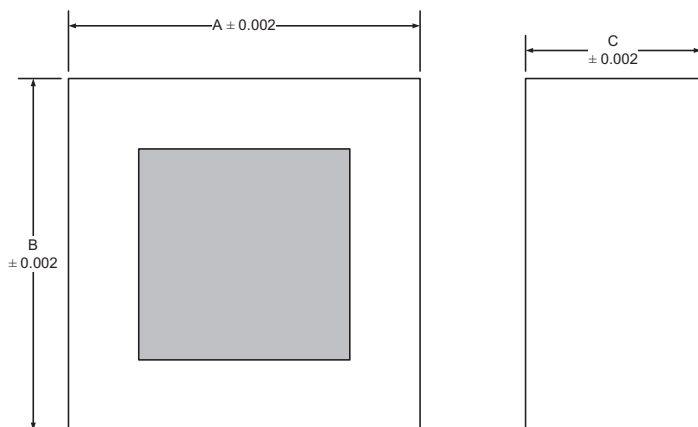
T<sub>A</sub> = 25 °C (Unless otherwise noted)

Parameter	Conditions	Absolute Maximum Value
Reverse DC Voltage		50 V
Operating Temperature		-55 °C to 150 °C
Storage Temperature		-65 °C to 200 °C

## Assembly Instructions

Die attach of the 90xxxx chip capacitors may be accomplished with eutectic solder, such as Au 80 / Sn 20, or conductive epoxy. Au wire or ribbon may be bonded to the top contact using thermocompression bonding or thermalsonic bonding. The wire or ribbon should be attached at or near the center of the top contact.

## Die Outline



ALL DIMENSIONS IN INCHES

## Die Dimensions

Model Number	DIM A	DIM B	DIM C
902R0 through 9010R	0.010	0.010	0.005
9011R through 9029R	0.015	0.015	0.005
9030R through 9049R	0.020	0.020	0.006
9050R through 9099R	0.030	0.030	0.006
90100 through 90199	0.040	0.040	0.008
90200 through 90399	0.050	0.050	0.008
90400 through 90600	0.070	0.070	0.008

All dimensions in inches.

Part Number Ordering Information

Part Number	Description	Packaging
(Model Number)(tolerance indicator)-W	Chip Capacitor	Waffle Pack (Quantity = 400)

Contact the factory for other packaging options.

Example: the part number for a 2.5 pF,  $\pm$  5% capacitor in a waffle pack is 902R5K-W

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