



Applications

- DC blocks and RF bypass capacitors in chip-and-wire hybrid circuits

Features

- Readily available from stock
- High reliability silicon oxide–nitride dielectric
- Low loss—typically 0.04 dB in a 50 Ω system
- Operation through 26 GHz
- Wide temperature operation



MIS Silicon Chip Capacitors

Skyworks SC series of metal-insulator-semiconductor (MIS) chip capacitors are ideally suited for use as DC blocks in chip-and-wire hybrid circuits. These devices are available with capacitance values from 0.8 to 1000 pF and are useful from VHF to millimeter wave bands. Skyworks family of MIS chip capacitors utilizes Skyworks' well established silicon technology and tightly controlled wafer processing to produce capacitors with excellent insertion loss and consistent capacitance.

The MIS chip capacitor is typically utilized as a DC block in series with a pair of RF transmission lines, such as microstrip or coplanar waveguide, or in shunt as an RF bypass capacitor. In both cases, the very low RF insertion loss and very high self-resonant frequencies of these capacitors make them nearly ideal components.

Applications

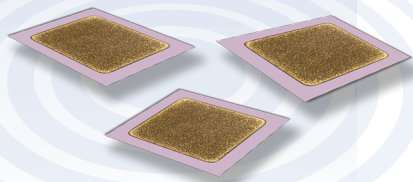
Chip capacitors are typically utilized as DC blocks or as RF bypass components in hybrid circuits. In the diagram of a single pole, double throw switch (see page 2), capacitors C1 and C4 are DC blocks that prevent the DC voltages that are present across the PIN diodes D1 and D2 from affecting the operation of the external circuit, as well as preventing any DC voltage or current that is developed in the external circuit from interfering with the operation of the switch.

Capacitors C2 and C3 are RF bypass switches which provide AC ground at the bias inputs to the switch. They prevent RF energy from propagating past these capacitors to the external bias circuits.

PIN diodes D1 and D2 may be chip PIN diodes or they could be beam lead PIN diodes. Please refer to www.skyworksinc.com for information on Skyworks' PIN diode offering.



Skyworks Green™ products are RoHS (Restriction of Hazardous Substances)-compliant, conform to the EIA/EICTA/JEITA Joint Industry Guide (JIG) Level A guidelines, are halogen free according to IEC-61249-2-21, and contain <1,000 ppm antimony trioxide in polymeric materials.



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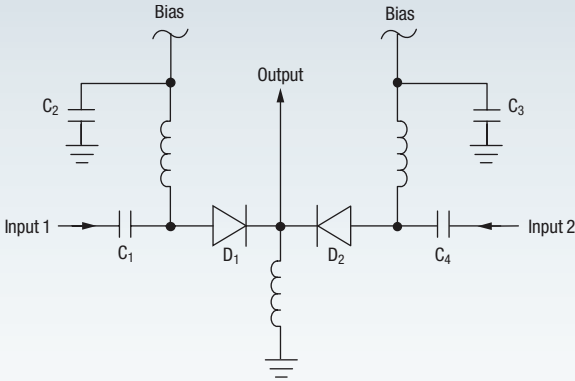
www.skyworksinc.com



Electrical Specifications at 25 °C

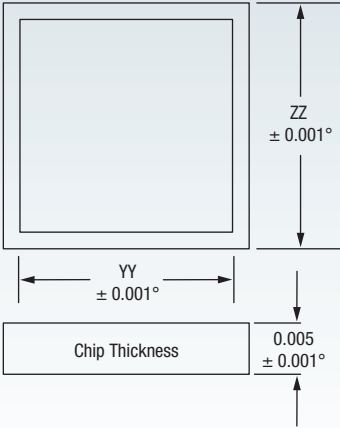
Part Number	Capacitance ($\pm 20\%$) pF	Chip Dimensions (± 1 mil)
SC00080912	0.8	9 mil pad/12 mil chip
SC00120912	1.2	9 mil pad/12 mil chip
SC00180912	1.8	9 mil pad/12 mil chip
SC00260912	2.6	9 mil pad/12 mil chip
SC00380912	3.8	9 mil pad/12 mil chip
SC00560912	5.6	9 mil pad/12 mil chip
SC00680912	6.8	9 mil pad/12 mil chip
SC00820710	8.2	7 mil pad/10 mil chip
SC00821518	8.2	15 mil pad/18 mil chip
SC01000710	10	7 mil pad/10 mil chip
SC01000912	10	9 mil pad/12 mil chip
SC01001518	10	15 mil pad/18 mil chip
SC01501518	15	15 mil pad/18 mil chip
SC02201518	22	15 mil pad/18 mil chip
SC03301518	33	15 mil pad/18 mil chip
SC04701518	47	15 mil pad/18 mil chip
SC06801518	68	15 mil pad/18 mil chip
SC10002430	100	24 mil pad/30 mil chip
SC33303440	333	34 mil pad/40 mil chip
SC50004450	500	44 mil pad/50 mil chip
SC99906068	1000	60 mil pad/68 mil chip

Outline Drawing



C2, C3 — Chip MIS capacitor
 C1, C4 — Chip or beam-lead MIS capacitor
 D1, D2 DSG9500 beam-lead PIN diode

Typical SPDT Switch



Application Notes

For additional information, please refer to the following Application Notes.

Diode Chips, Beam-Lead Diodes, Capacitors: Bonding Methods and Packaging

Waffle Pack Chip Carrier Handling/Opening Procedure



Through our Green Initiative,[™] we are committed to manufacturing products that comply with global government directives and industry requirements.

Skyworks is continuously innovating RF, analog and mixed-signal ICs. For the latest product introductions and information about Skyworks, visit our Web site at www.skyworksinc.com

For additional information on our broad overall product portfolio, please contact your local sales office or email us at sales@skyworksinc.com.

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