

昆山同凯电子有限公司

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RadVista



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PREFACE

This Product Catalog contains information about some of our standard products. It is intended to assist in the selection of products to ensure availability, ease of use and optimal performance.

These products represent more than two decades of innovation in design and manufacturing. Detailed specifications for our standard parts will be available by contacting us directly. We provide product samples, test boards and applications support.

We also produce custom products and modifications to standard products, so please contact us regarding your specifications if you cannot find a standard product that meets your needs. Most of our standard products can be up-screened to applications or we can design custom parts to your specific requirements.





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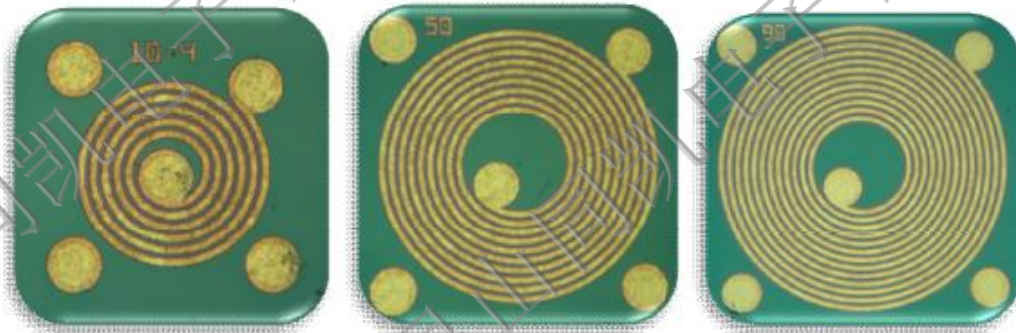
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I. COMPANY INTRODUCTION

RadVista Corporation is a high-tech enterprise specializing in R&D, production and sale of analog and digital circuit core chips of radio frequency, microwave and millimeter-wave communications. We are dedicated to provide products with high integration, high stability and strong power and diverse product selection for system manufacturers, and other aspects of the industry chain. Our goal is to consistently meet and exceed our customers' expectation. The company has strong R&D capability and advanced software and hardware facilities. We pay close attention to the latest technology development on microwave & radio frequency fields and the applications of the digital circuits around the world. At the same time we continuously improve the technologies of our products, extensively work together with our worldwide business partners to ensure that our products and services can meet our customers' ever higher expectations. Since it was founded, RadVista has always been focusing on the original innovation to provide a full range of technology solutions for wireless communication system manufacturers and other system integrators with our decades long of technology know-how and experiences in wireless broadband, signal processing, IC design and application specific digital circuits. These solutions contain a new generation of application specific baseband chips, digital application chips, RF chips and microwave monolithic integrated circuit chips. Our products are widely used in mobile communications, wireless LAN, satellite communications, positioning and other fields. RadVista has been making great progress in creating the world's leading technologies and products combined with the globally leveraged best resources.

Our digital integrated circuits, radio frequency integrated circuits and MMICs are all manufactured by the world's most advanced semiconductor process based on GaAs and Si materials. As an original design manufacturer, a.k.a. ODM, RadVista Corporation has independently developed all of its IC products with its own intellectual property rights and by working with world-class wafer foundries.

(I) SPIRAL INDUCTORS



Description

RA6000A series of spiral inductors are formed by photolithography and plating techniques on fused quartz substrates. They eliminate the need for hand forming and “staking” of coil in hybrid circuits. They provide uniformity, durability and repeatability in circuit fabrication.

The coils are SiN coated to protect from ambient contaminants, and to eliminate the need for conformal coating. Quartz substrates are rugged to reduce dielectric losses. Chips may be bonded using either conductive or non conductive epoxies, and wire bonded with gold wire or ribbon by thermo-compression bonding.

Contemporary fabrication processes combined with RadVista’s extensive experience in microwave components and hybrid circuit engineering has generated a product that will be both operationally predictable and reliable. This series of devices meets RoHS requirements per EU Directive 2002/95/EC. The standard terminal finish is gold unless otherwise specified. Consult RadVista Corporation if you have special requirements.

Applications

The spiral inductors are ideally suited for bias injection into oscillators, amplifiers and microwave switches (bias tees). They can also be used to bias tuning varactors, PIN diodes, transistors and monolithic circuits. Generally they can be used for RF and microwave circuit input and output matching. These spiral elements provide extreme freedom from in band resonance to very smooth wide frequency response.

Key Features

- No Need for "Staking" Coil
- Passivated Protective Coating Over Coil
- Dimensional Uniformity

- Planar Solid Structure Coil
- Physical and Dimensional Stability
- Through Temp Cycle and Vibration
- Models as a Lossy Transmission Line
- Designed for Microwave Applications From 2 to 18 GHz
- Reduced Assembly Costs
- RoHS Compliant

Packaging

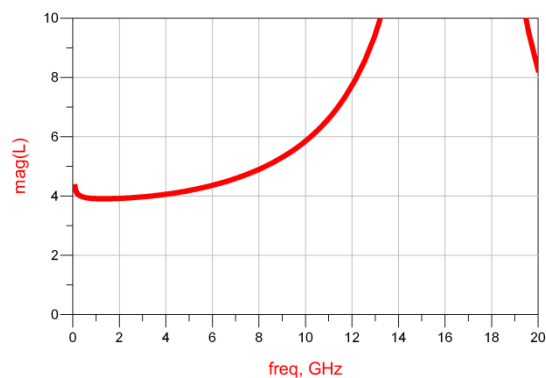
- Chip

Electrical Characteristic

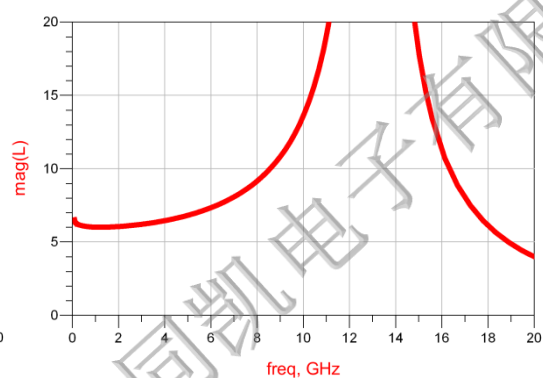
Model Number	Turns	Inductance (nH) (typ.)	Rs@DC (Ohm)	Rs@GHz (Ohm)	Q@GHz	Resonant Frequency (GHz)	Chip Size (mm×mm)
RA6005A	3.5	5	1.0	3.7@4.0	26.5@4.0	16.5	0.75×0.75
RA6007P5A	4.5	7.5	1.3	6.0@4.0	27.0@4.0	12.8	0.80×0.80
RA6010A	5.5	10	1.6	8.0@4.0	26.0@4.0	11.3	0.80×0.80
RA6015A	6.5	15	2.1	5.6@4.0	26.5@4.0	8.5	0.80×0.80
RA6020A	7.5	20	2.6	7.5@2.0	28.5@2.0	7.0	0.80×0.80
RA6050A	9.5	50	5.1	10.6@1.0	28.5@1.5	2.8	0.95×0.95
RA6090A	12.5	90	8.0	26.3@1.0	26.5@1.0	1.8	1.10×1.10
RA6200A	17.5	200	14.0	30.0@1.0	23.0@1.0	1.0	1.37×1.37

Inductor Value vs. Frequency

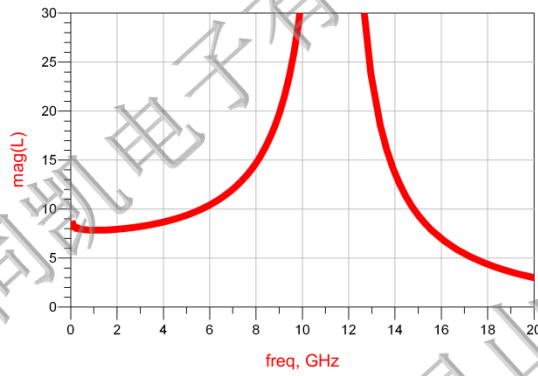
(1) RA6005A



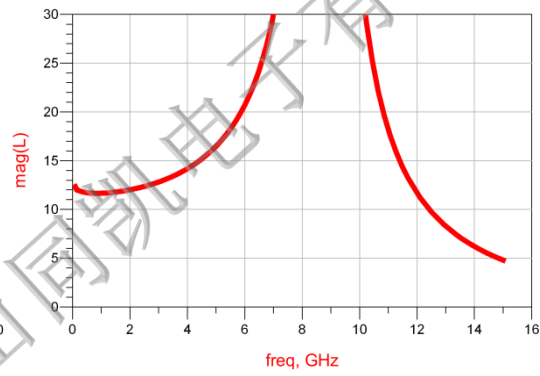
(2) RA6007P5A



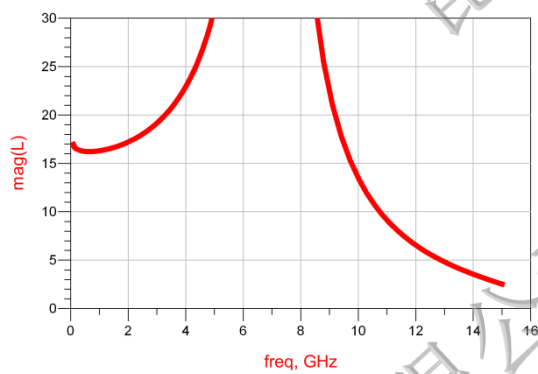
(3)RA6010A



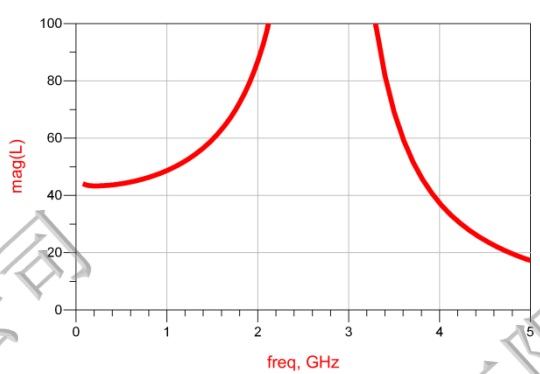
(4)RA6015A



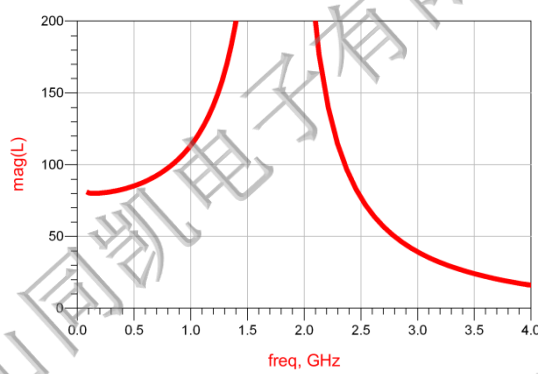
(5)RA6020A



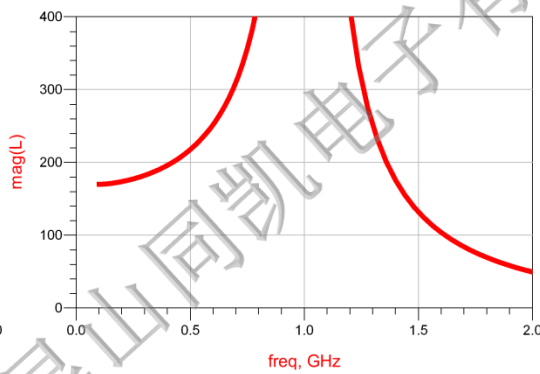
(6)RA6050A



(7)RA6090A



(8)RA6200A

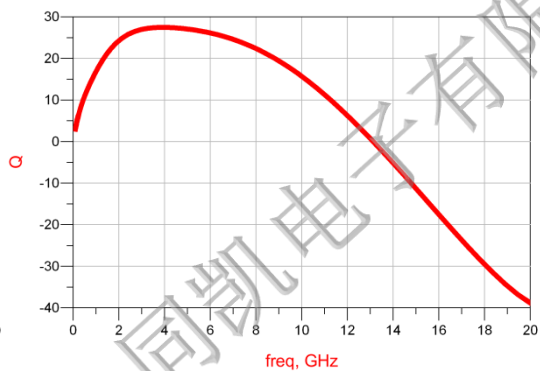


Q Value vs. Frequency

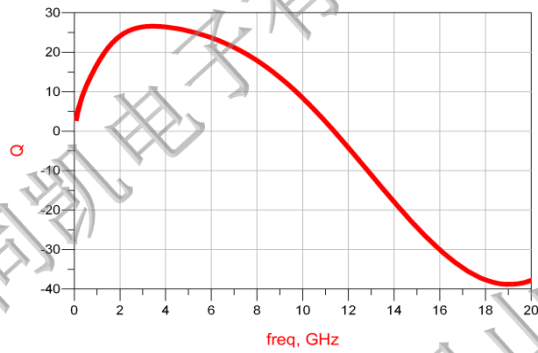
(1)RA6005A



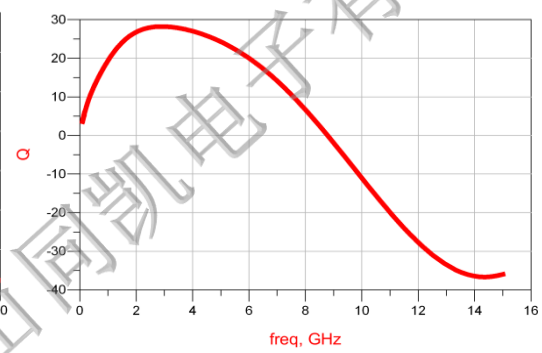
(2) RA6007P5A



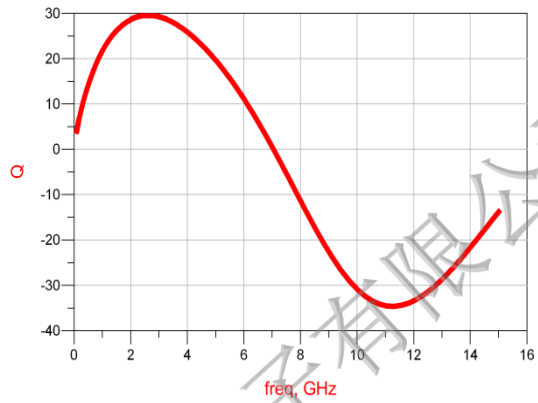
(3)RA6010A



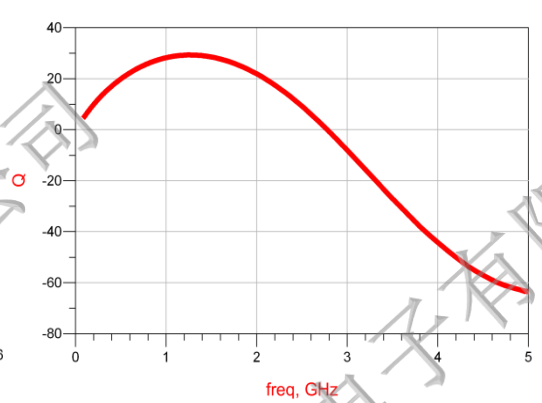
(4)RA6015A



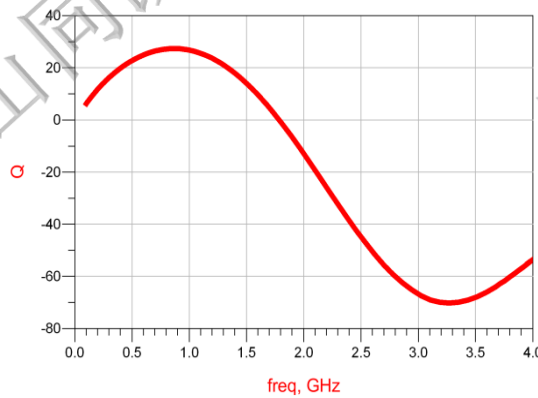
(5)RA6020A



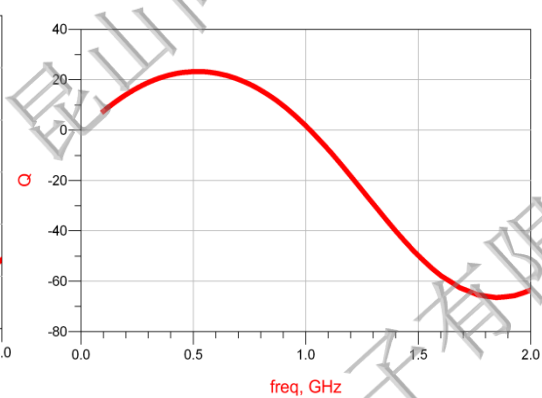
(6)RA6050A



(7)RA6090A



(8)RA6200A

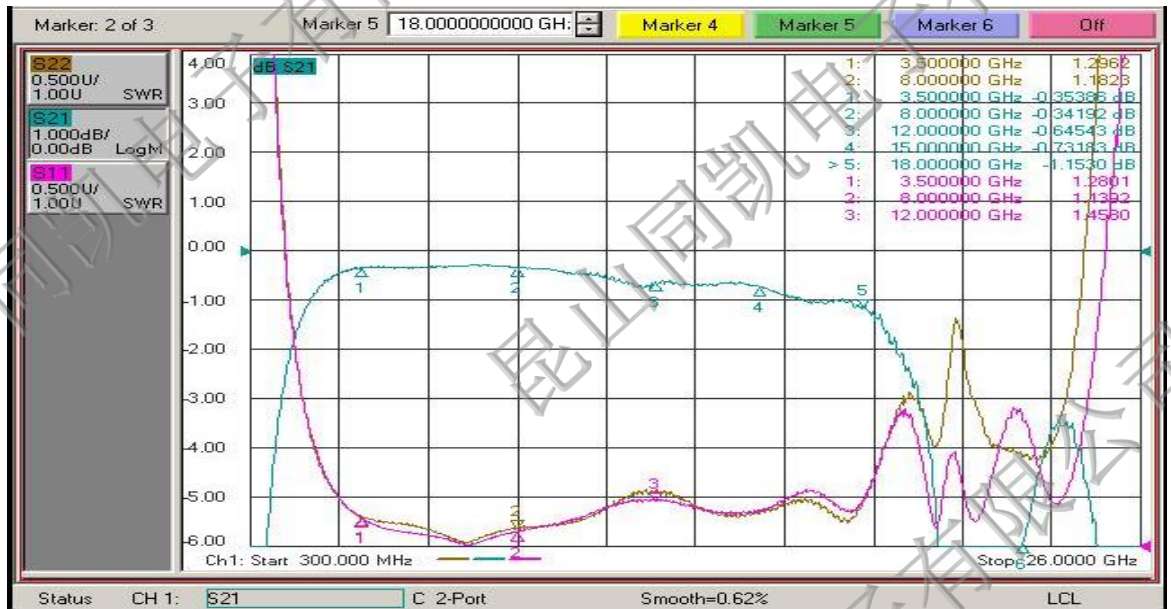


Selected models test curve

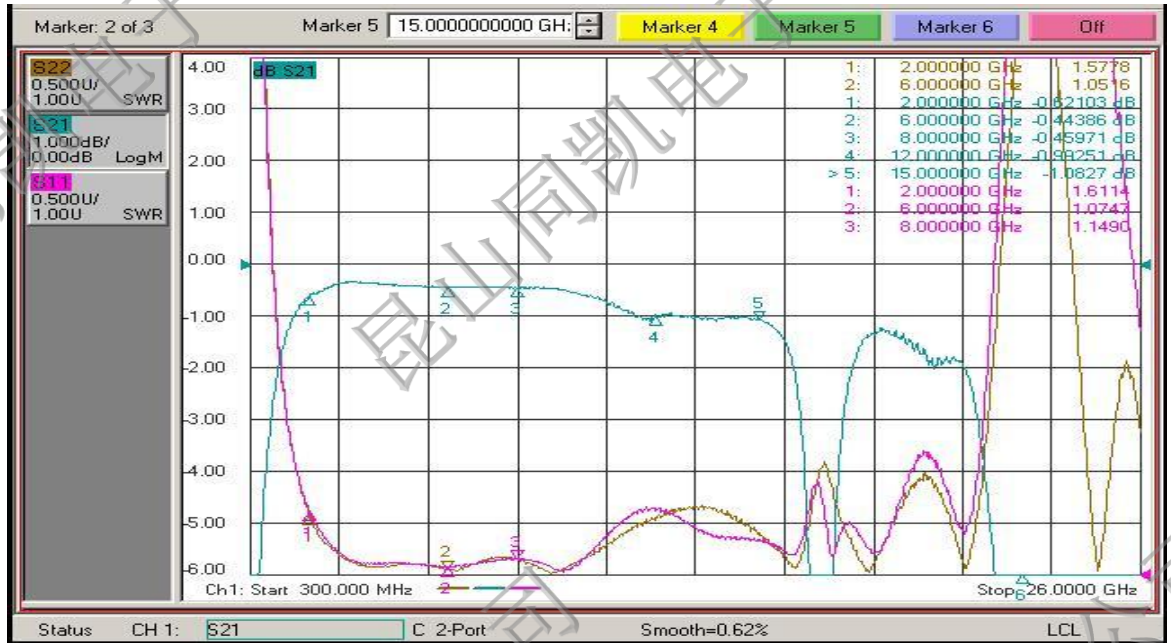
(1) RA6010A



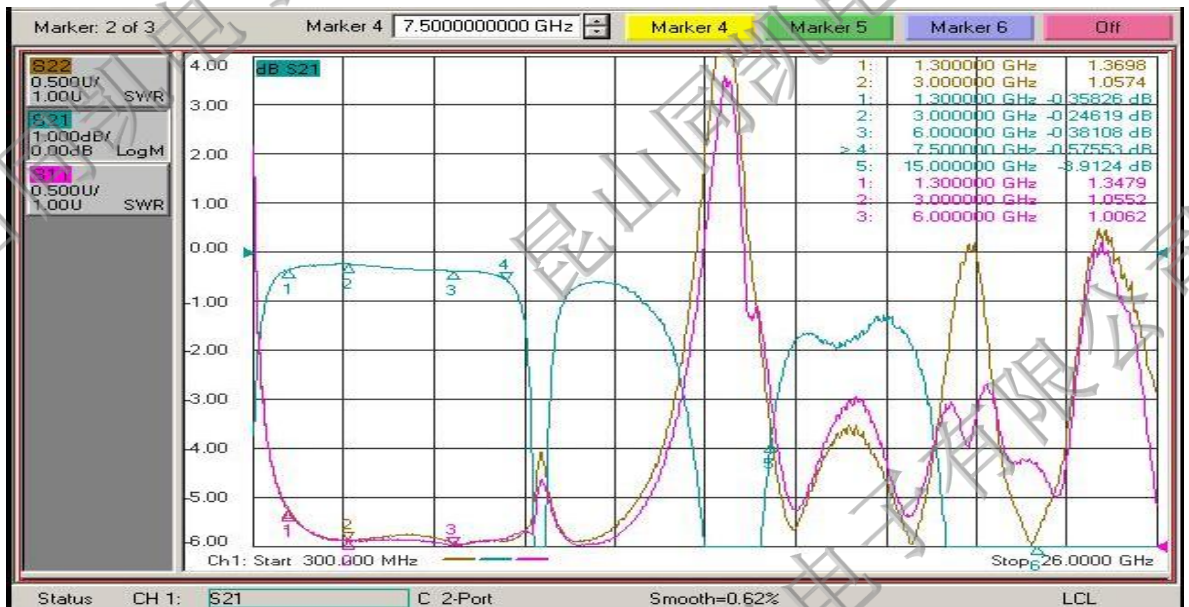
(2) RA6015A



(3) RA6020A



(4) RA6050A



RA 6000A Series Inductor application Note

Description

RA6000A series are a small profile chip inductors.

Applications

RA6000A series can be used for RF choke or RF and Microwave circuit match component.

Mounting

RA6000A series do not have back-metallization, epoxy should be used for die attach. Die can be attached to substrate.

Wire Bonding

There are 5 bonding pads 1, 2, 3, 4, 5. Pad 1, 2 are the major two pads which are directly connected to inductor metal. Pad 3, 4, 5 are relay pads in case there is a long bonding wire between the inductor pad 2 and circuits. Ball or wedge bond with 1.0 diameter pure gold wire. Thermo-sonic wire bonding with a nominal stage temperature of 150 Celsius Degree and a ball bonding force of 40 to 50 gram or wedge bonding force of 18 to 22 gram is recommended. Use minimum level of ultrasonic energy to achieve reliable wire bond.

Figure1 and Figure2 show typical bonding applications.

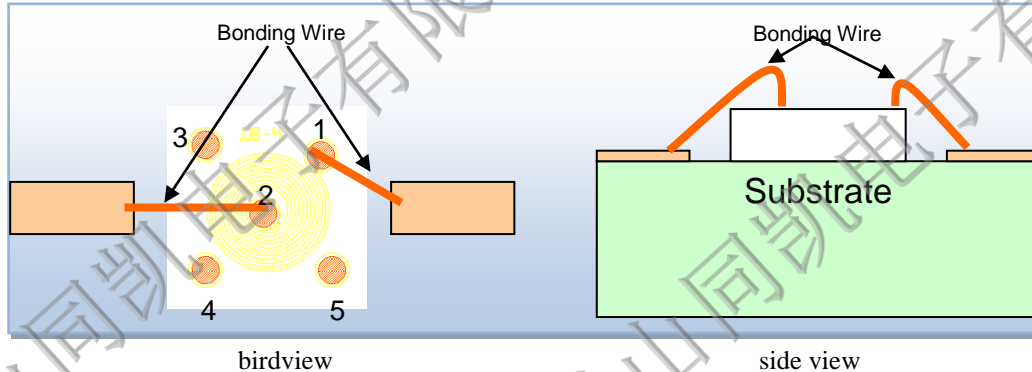


Fig1. Chip Bonding Configuration 1

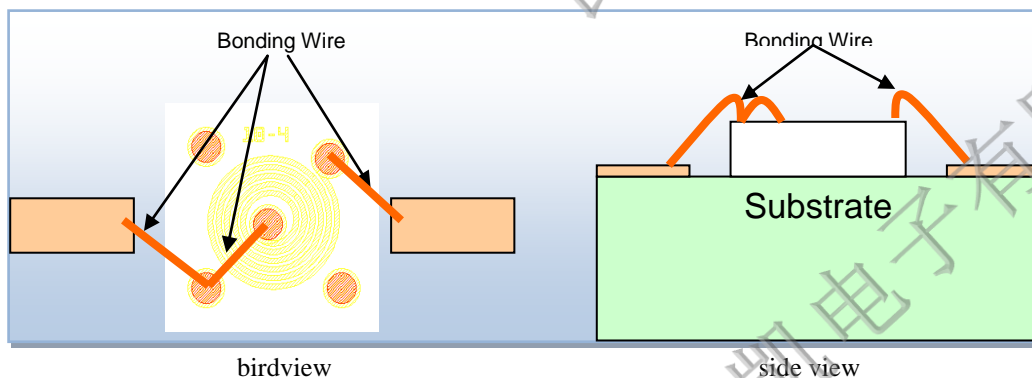


Fig2. Chip Bonding Configuration 2