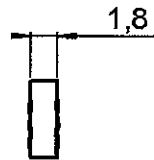
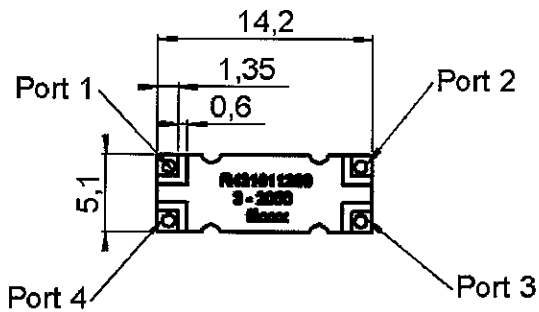


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3DB / 1.9 -2.2 GHZ

R431.611.205

Series : Coupler

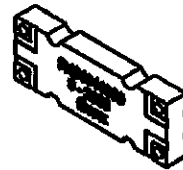


RF Port configuration

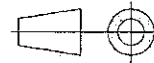
| | Input | Isol. | -90° | 0 |
|------|-------|-------|------|---|
| Port | 1 | 2 | 3 | 4 |
| | 2 | 1 | 4 | 3 |
| | 3 | 4 | 1 | 2 |
| | 4 | 3 | 2 | 1 |



Scale 1:1



All dimensions are in mm.



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ELECTRICAL CHARACTERISTICS

| | Specified band | Extended band |
|---------------------------|----------------|---------------|
| Frequency (GHz) | 1.9 - 2.2 | 1.7 - 2.4 |
| V.S.W.R | ≤ 1.17 | 1.2 |
| Impedance (Ω) | 50 | |
| Nominal coupling (dB) | 3 | 3 |
| Amplitude balance (dB) | ± 0.2 | 0.35 |
| Phase balance : 90 (°) | ± 2 | 3 |
| Isolation (dB) | ≥ 23 | 20 |
| Insertion loss (dB) | ≤ 0.2 | 0.2 |
| Average power at 25°C (W) | 60 | 60 |

MECHANICAL CHARACTERISTICS

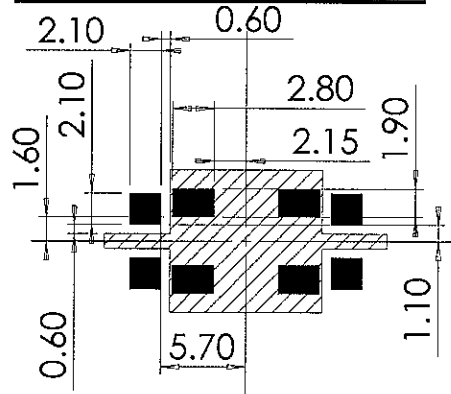
| | |
|----------------|--------------------------|
| Mounting | Surface Mount Technology |
| RF Port finish | Chemical Sn |
| Weight | 296.400 g |

ENVIRONMENTAL

| | | |
|-----------------------------|-----------|----|
| Operating temperature range | -55 / +85 | °C |
| Storage temperature range | -55 / +85 | °C |

SPECIFICATION

SOLDERING PATTERN



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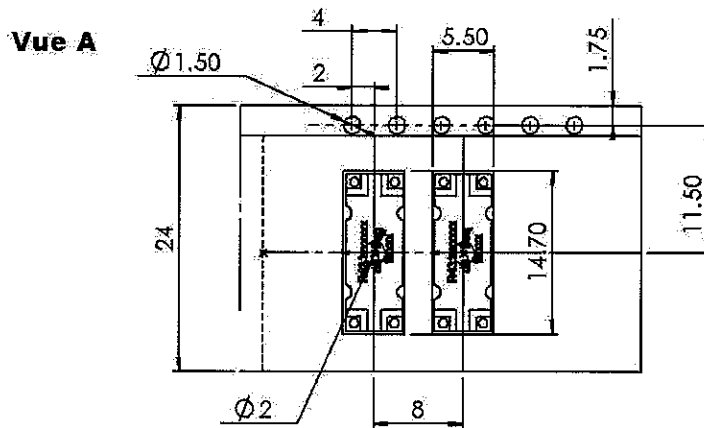
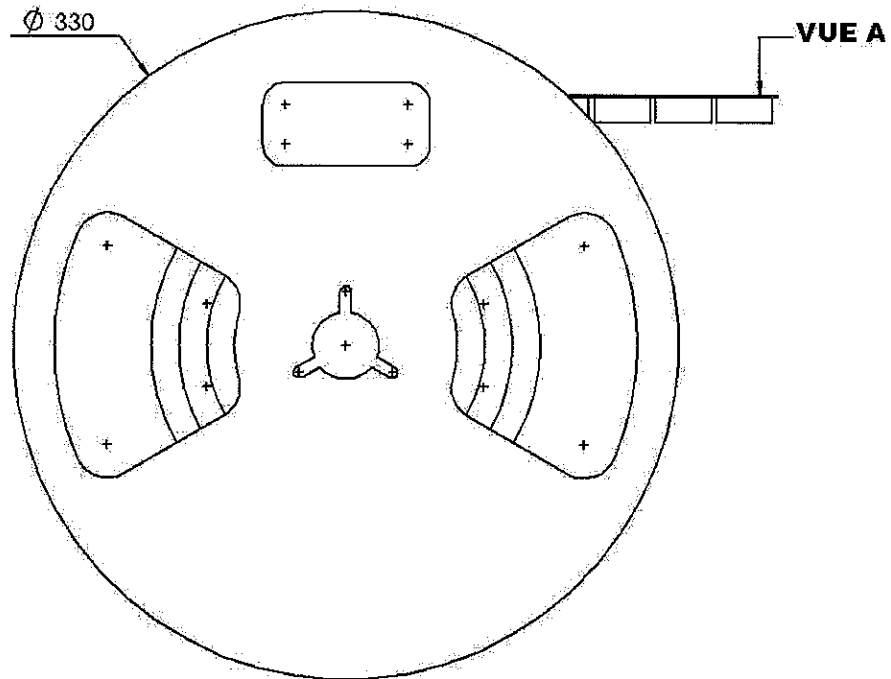
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PACKAGING



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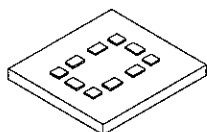
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SOLDERING GUIDELINES

① Solder cream deposition :



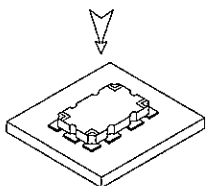
RADIALL recommends using a solder cream Sn96.5 - Ag3 - Cu0.5 type "no clean - low residue" (50 % solid residue of flux quantity) that will permit the elimination of the cleaning operation step after soldering . When using a conventional solder cream with high level of flux solid residue , it is important to incorporate a good cleaning operation step in the fifteen minutes after soldering .

The substrate must have chemical Sn protection . Please optically verify that the edges of the zones are clean , without contaminates and that the PCB zoned areas have not oxydated .

Solder cream may be applied on the board with screen printing or dispenser techniques . For either method , the paste solder must be coated to appropriate thickness and shapes to achieve good solder wetting and adequate insulation .

The design of the mounting pads and the stencilling area are given in the applicable note , for a thickness of the silk-screen printing of 150 µm .

② Placement of the coupler :

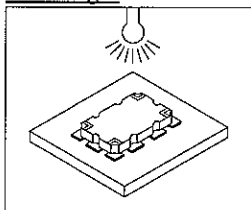


For small , lightweight components such as chip components , a self - alignment effect can be expected if small placement errors exist . However , this effect is not as expected for couplers components and they require precise positioning on their soldering pads ; typically ± 0.25 mm .

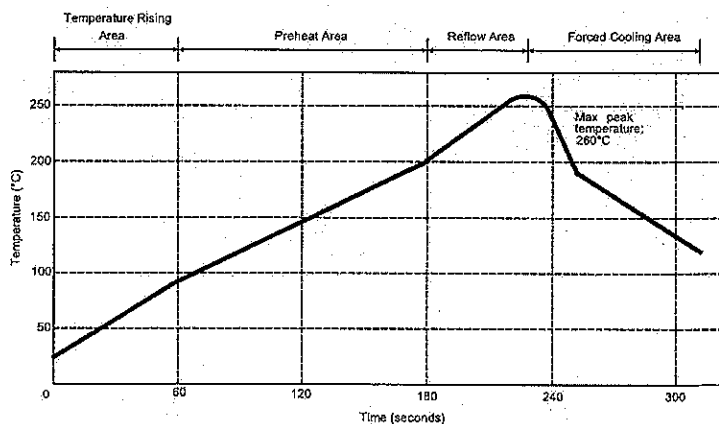
Place the coupler onto the PCB with automatic pick and place equipment . Various types of suction can be used .

RADIALL does not recommend using adhesive agents on the component or on the PCB .

③ Soldering :



Please follow RADIALL's recommended temperature profile . This profile can be used with Infra - red reflow , Vapor phase soldering and Forced air convection .



| Parameter | Value | Unit |
|----------------------------------|-----------|--------|
| Temperature rising Area | 1 - 4 | °C/sec |
| Max Peak Temperature | 260 | °C |
| Max dwell time @260°C | 10 | sec |
| Min dwell time @235°C | 20 | sec |
| Max dwell time @235°C | 60 | sec |
| Temperature drop in cooling Area | -1 to - 4 | °C/sec |
| Max dwell time above 100°C | 420 | sec |

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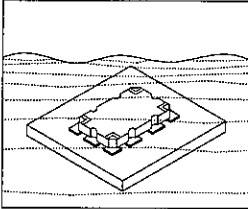
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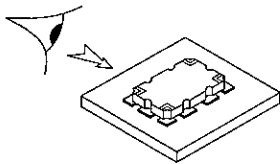
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④ Cleaning of the PCB :

When using a conventional solder cream with high level of residue , please clean the PCB with a substitute product , similar to CFC , that complies to the International Environment Agency rules . It is important to do the cleaning operation step less than fifteen minutes after reflow .
RADIALL recommends using ultrasonic waves or vapor phase process .

⑤ Quality check :

Verify by visual inspection that component is centred on the mounting pads .
Solder joints : verify by visual inspection that the formation of meniscus on the pads are proper , and have a capilarity amount upper the third of the height .

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