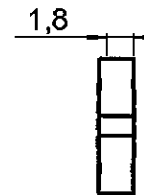
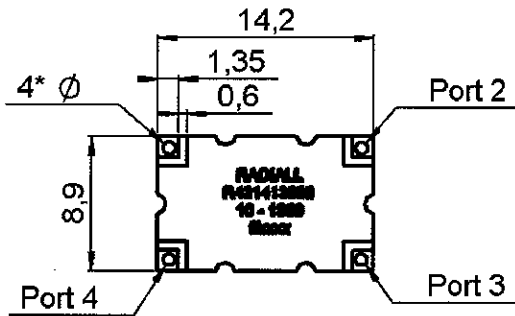


SMT DIRECTIONAL COUPLER

10DB / 1.7-2.0GHZ

R431.413.005

Series : COUPLER

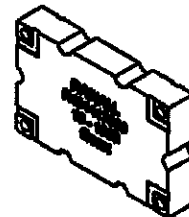


RF Port configuration

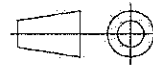
Port	Input	Isol.	-90°	0
1	2	3	4	
2	1	4	3	
3	4	1	2	
4	3	2	1	



Scale 1:1



All dimensions are in mm.



Issue : 0450 C

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ELECTRICAL CHARACTERISTICS

	Specified band	Extended band
Frequency (GHz)	1.7-2.0	1.5-2.2
V.S.W.R	≤ 1.18	1.2
Impedance (Ω)	50	
Nominal coupling (dB)	10	10
Amplitude balance (dB)	± NA	1.5
Phase balance : 90 (°)	± NA	0.3
Isolation (dB)	≥ NA	20
Insertion loss (dB)	≤ 0.25	0.25
Average power at 25°C (W)	60	60

MECHANICAL CHARACTERISTICS

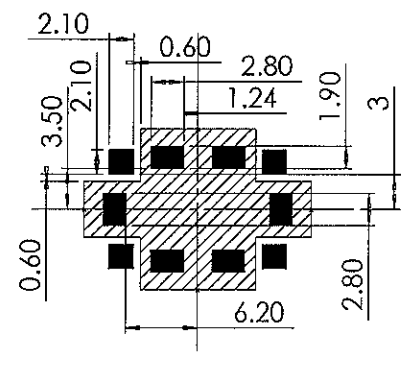
Mounting	Surface Mount Technology
RF Port finish	Chemical Sn
Weight	<u>1.000</u> g

ENVIRONMENTAL

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

SPECIFICATION

SOLDERING PATTERN



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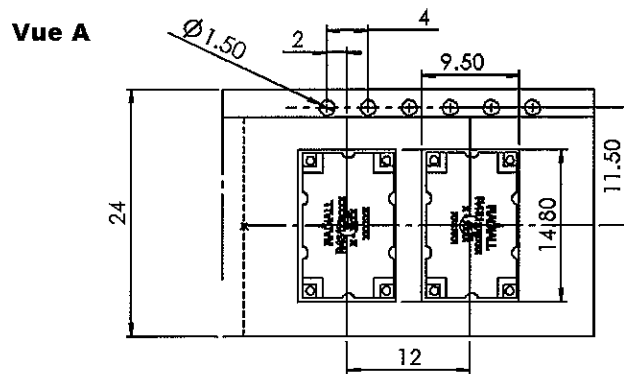
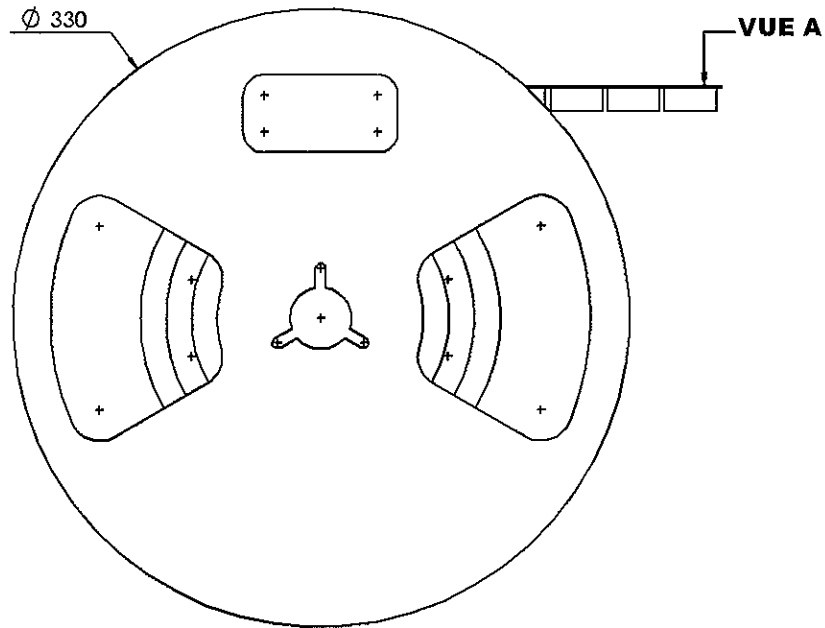
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PACKAGING



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SMT DIRECTIONAL COUPLER

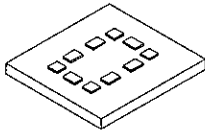
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SOLDERING GUIDELINES

① Solder cream deposition :



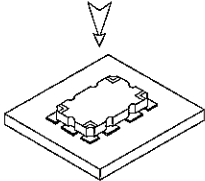
RADIALL recommends using a solder cream Sn96.5 - Ag3 - Cu0.5 type "no clean - low residue" (50 % solid residue of flux quantity) that will permit the elimination of the cleaning operation step after soldering . When using a conventional solder cream with high level of flux solid residue , it is important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

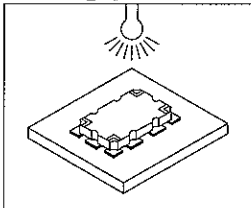


For small , lightweight components such as chip components , a self - alignment effect can be expected if small placement errors exist . However , this effect is not as expected for couplers components and they require precise positioning on their soldering pads ; typically ± 0.25 mm .

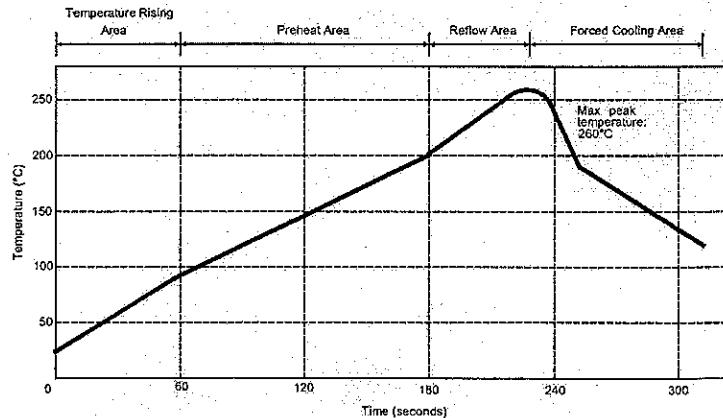
Place the coupler onto the PCB with automatic pick and place equipment . Various types of suction can be used .

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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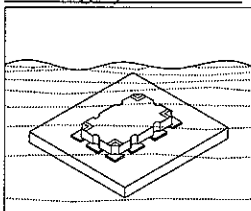
SMT DIRECTIONAL COUPLER

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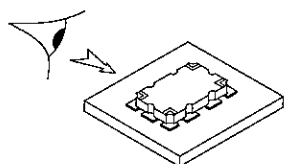
Series : **COUPLER**

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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