SMT DIRECTIONAL COUPLER	**R431.612.005**
6DB / 2.0-2.5GHZ	Series : **COUPLER**

14,2

1,35

0,6

Port 1   Port 2

8,9

2,3

Port 4   Port 3

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.

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SMT DIRECTIONAL COUPLER
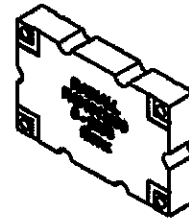
6DB / 2.0-2.5GHZ

R431.612.005

Series : COUPLER

ELECTRICAL CHARACTERISTICS

		Specified band	Extended band
Frequency (GHz)		2.0-2.5	1.8-2.7
V.S.W.R	≤	1.2	1.25
Impedance (Ω)		50	
Nominal coupling (dB)		6	6
Amplitude balance (dB)	±	NA	1.5
Phase balance : 90 (°)	±	NA	0.3
Isolation (dB)	≥	NA	17
Insertion loss (dB)	≤	0.3	0.3
Average power at 25°C (W)		60	60

MECHANICAL CHARACTERISTICS

Mounting	Surface Mount Technology
RF Port finish	Chemical Sn
Weight	1.000 g

ENVIRONMENTAL

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

SPECIFICATION

SOLDERING PATTERN
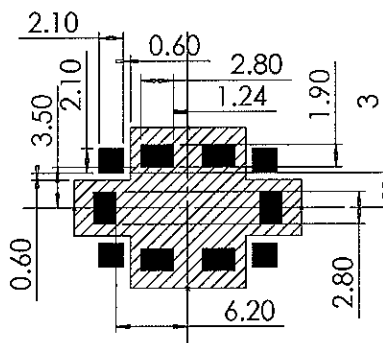
In the effort to improve our products, we reserve the right to make changes judged to be necessary.

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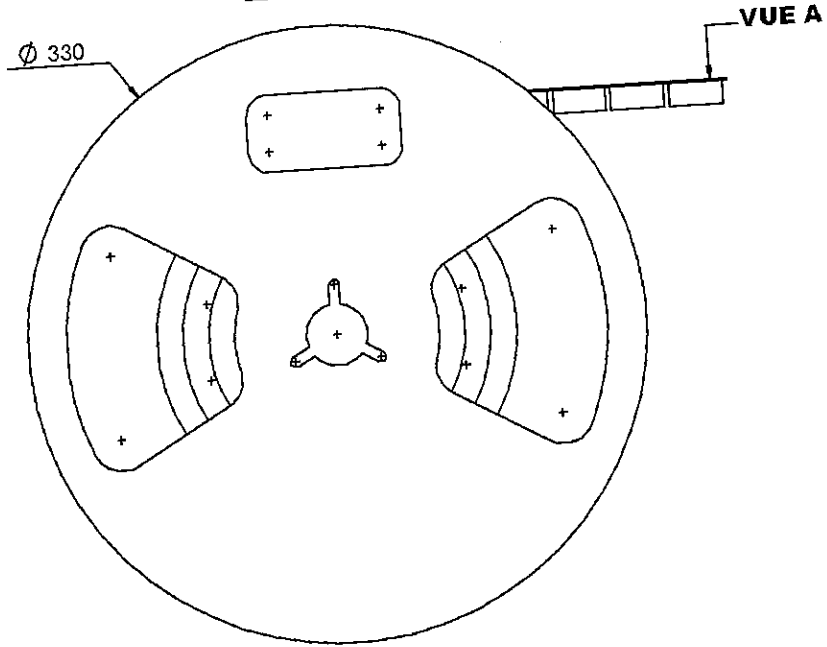
TECHNICAL DATA SHEET

SMT DIRECTIONAL COUPLER

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PACKAGING

VUE A

Ø 330

Vue A

Ø 1.50

2

4

9.50

11.50

14.80

24

12

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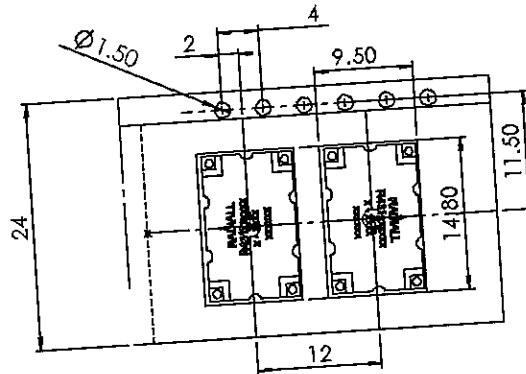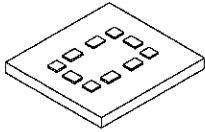
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SMT DIRECTIONAL COUPLER	**R431.612.005**
6DB / 2.0-2.5GHZ	Series : COUPLER

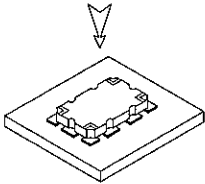# SOLDERING GUIDELINES

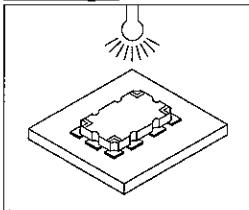| ① _Solder cream deposition :_	RADIALL recommends using a solder cream Sn96.5 - Ag3 - Cu0.5 type " no clean - low residue " (50 % solid residue of flux quantity) that will permit the elimination of the cleaning operation step after soldering . When using a conventional solder cream with high level of 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 .
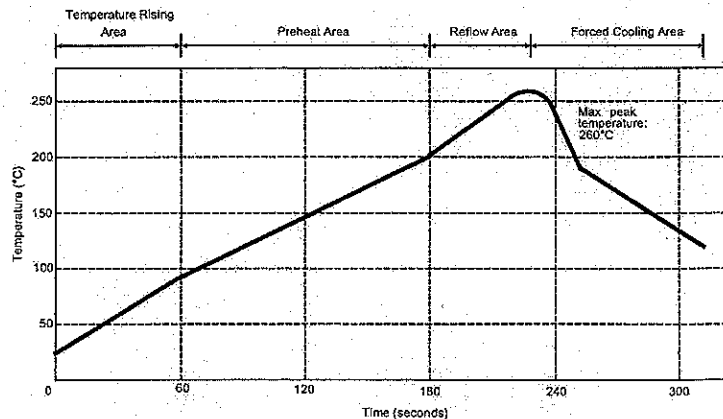
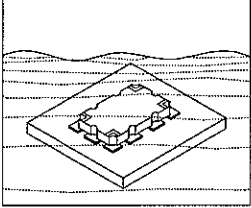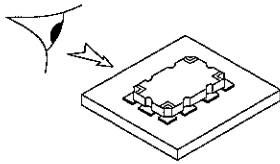| Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	-1 to - 4	°C/sec
Max dwell time above 100°C	420	sec

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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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