

## 3 dB Hybrid Coupler RK3-180-544P-1.5G-S1

MTS-No.: 28030

### Description

The 3 dB Hybrid Couplers (180°) of this series are designed to work at frequency ranges between 1000 MHz and 1500 MHz.

They provide two equal amplitude in-phase signals when fed from its sum port ( $\Sigma$ ) and two equal amplitude 180° out-of-phase signals when fed from its difference port ( $\Delta$ ).

The multisection stripline design exhibits very good flatness and VSWR at all ports.



### Technical data:

#### 1 RF-specifications:

1.1 Coupler type	RK3, 3 dB 180°		
1.2 Impedance	50 $\Omega$		
1.3 Input power	20 W max.		
1.4 Frequency range	1000 - 1500 MHz		
	<b>min.</b>	<b>typ.</b>	<b>max.</b>
1.5 VSWR (at all ports)		1.1	1.25
1.6 Insertion loss / Coupling (+3 dB)			
@ 1000 MHz		0.4 dB	0.5 dB
@ 1500 MHz		0.6 dB	0.7 dB
1.7 Isolation	20 dB	30 dB	
1.8 Amplitude balance			
@ 0 degree		$\pm 0.2$ dB	$\pm 0.2$ dB
@ 180 degree		$\pm 0.1$ dB	$\pm 0.2$ dB
1.9 Phase balance			
@ 0 degree		$\pm 1.2^\circ$	$\pm 2.5^\circ$
@ 180 degree		$\pm 0.8^\circ$	$\pm 1.5^\circ$

#### 2 Connections:

2.1 RF-in- and outputs	4x SMA female
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#### 3 General specifications:

3.1 Operating temperature	-55 °C - +75 °C
3.2 Reference temperature of specifications	+25 °C
3.3 Dimensions (without connections) (LxWxH)	50 mm x 80 mm x 16.5 mm
3.4 Case style	Milled aluminium enclosure
3.5 Colour	SurTec650 (Chrome alloy)
3.6 Weight	190 grams

#### 4 Delivered parts:

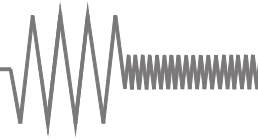
RK3-180-544P-1.5G-S1  
Datasheet

#### 5 Comments:

Warranty	12 months
RoHS-compliant	Yes

#### 6 Recommended accessories:

RF-cables  
Attenuators series PAH



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#### Typical measurements:

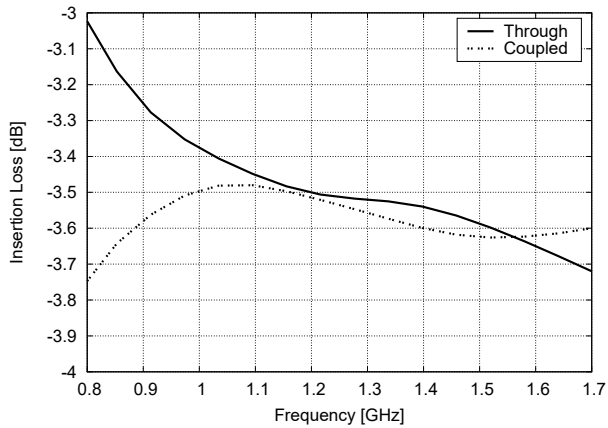


Fig. 1: Through and coupled line insertion loss

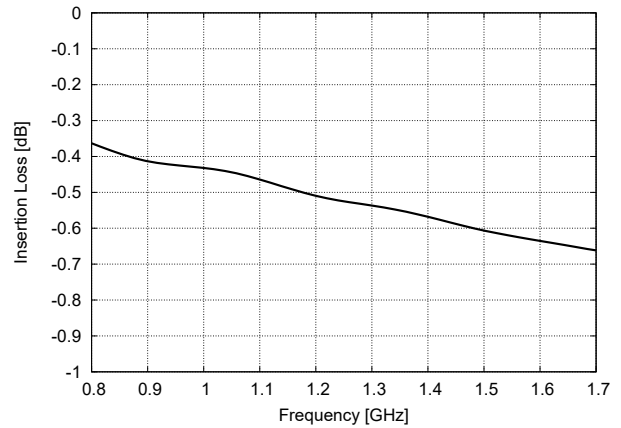


Fig. 2: Through plus coupled line insertion loss

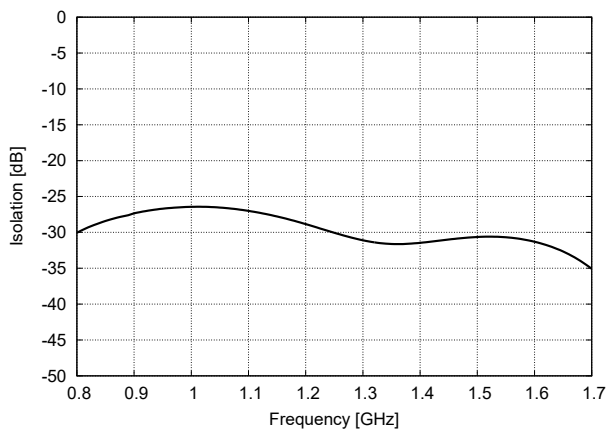


Fig. 3: Isolation between output ports

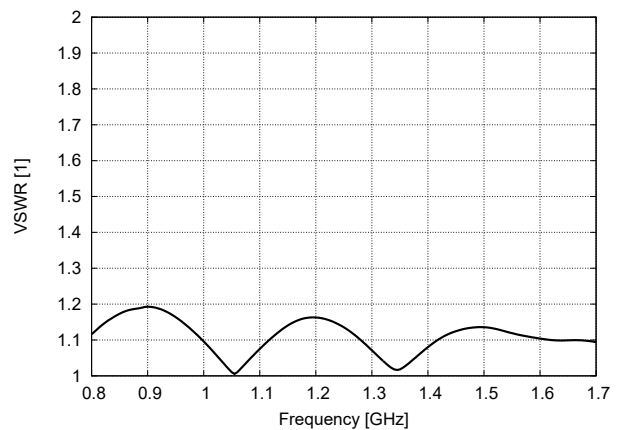


Fig. 4: VSWR at all ports

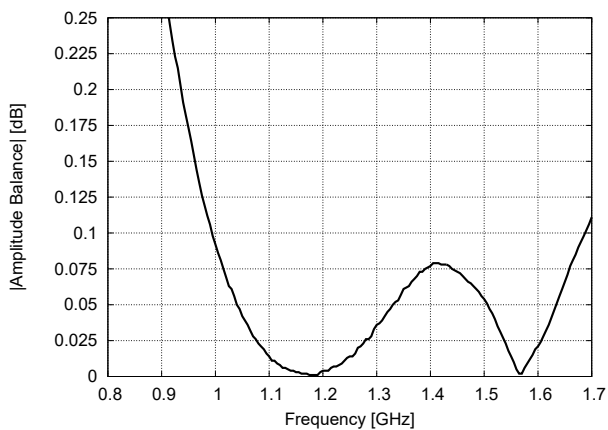


Fig. 5: Amplitude balance between output ports

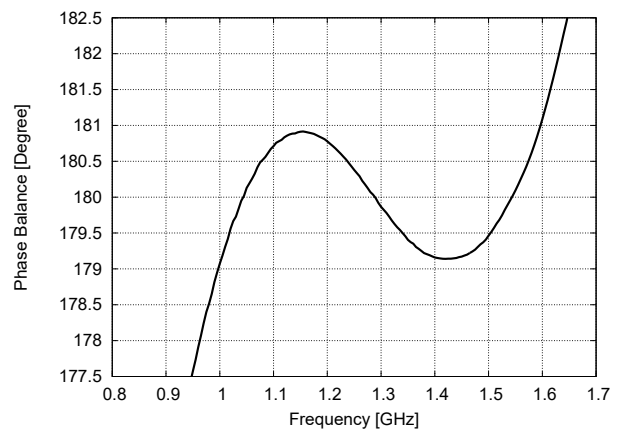
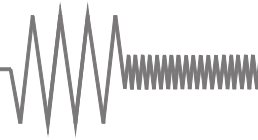


Fig. 6: Phase balance between output ports



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#### Port configuration:

Input	$\Delta$	$\Sigma$	-3 dB / 0°	-3 dB / 180°/0°
$\Delta$	---	ISOLATION	-3 dB / 0°	-3 dB / 180°
$\Sigma$	ISOLATION	---	-3 dB / 0°	-3 dB / 0°
-3 dB / 0°	-3 dB / 90°	-3 dB / 90°	---	ISOLATION
-3 dB / 180°/0°	-3 dB / 90°	-3 dB / 90°	ISOLATION	---

#### Views:

