

Typical applications

- V-Band Balanced/Unbalanced Interfacing

Features

Impedance transformation 1:2

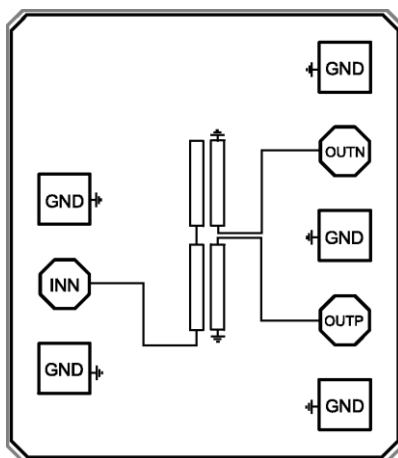
Phase Imbalance < 5°

Amplitude Imbalance < 0.8 dB

100 μm Pitch

Small Size: 0.57 x 0.46 mm²

Functional diagram



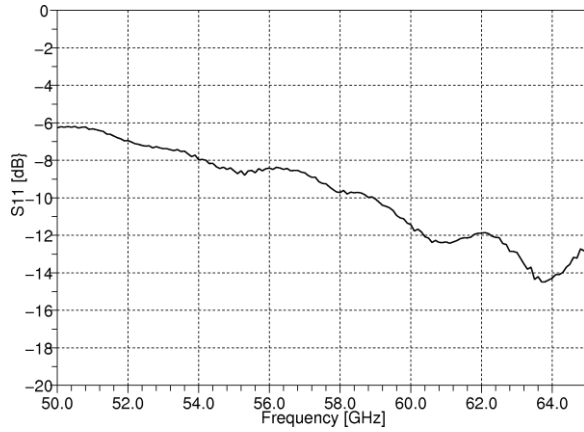
General description

The TS-BAL-60 is a planar Marchand type balun. The balun transforms unbalanced port to balanced port impedance with ratio of 1:2. Good phase and amplitude balance make it ideal for differential circuit measurement with single ended equipment. It can also be used as interface between single ended and differential chips.

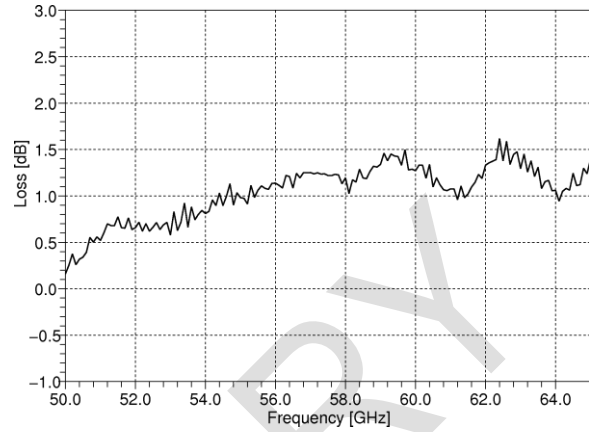
Electrical specifications, $T_A=25\text{ }^\circ\text{C}$, 50 Ohm system

Parameter	Min	Typ.	Max	Units
Frequency Range	57 – 67			GHz
Unbalanced Port Impedance		50		Ω
Balanced Port Impedance		100		Ω
Input Return Loss		<-10	-9	dB
Insertion Loss		1.2	1.5	dB
Amplitude Imbalance			0.8	dB
Phase Imbalance			5	°

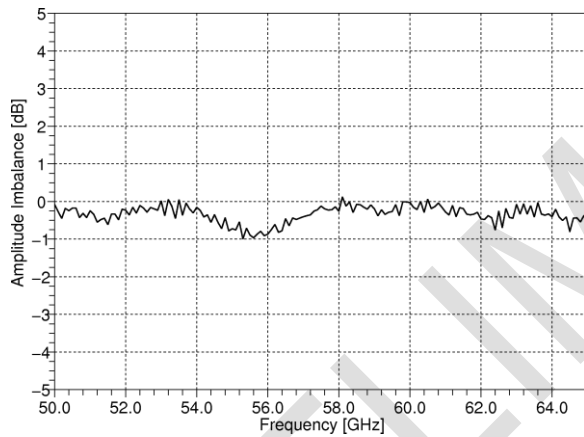
Input Return Loss



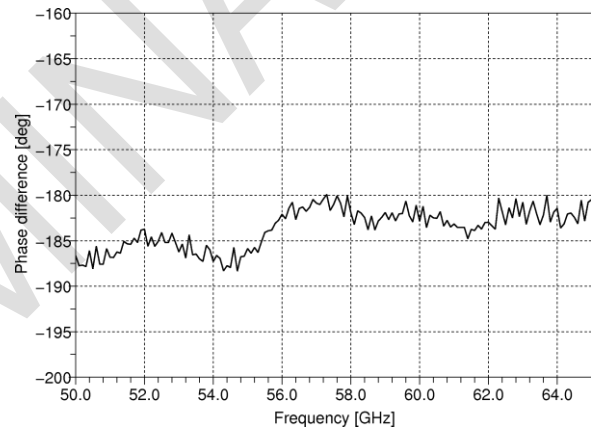
Insertion Loss



Amplitude Imbalance



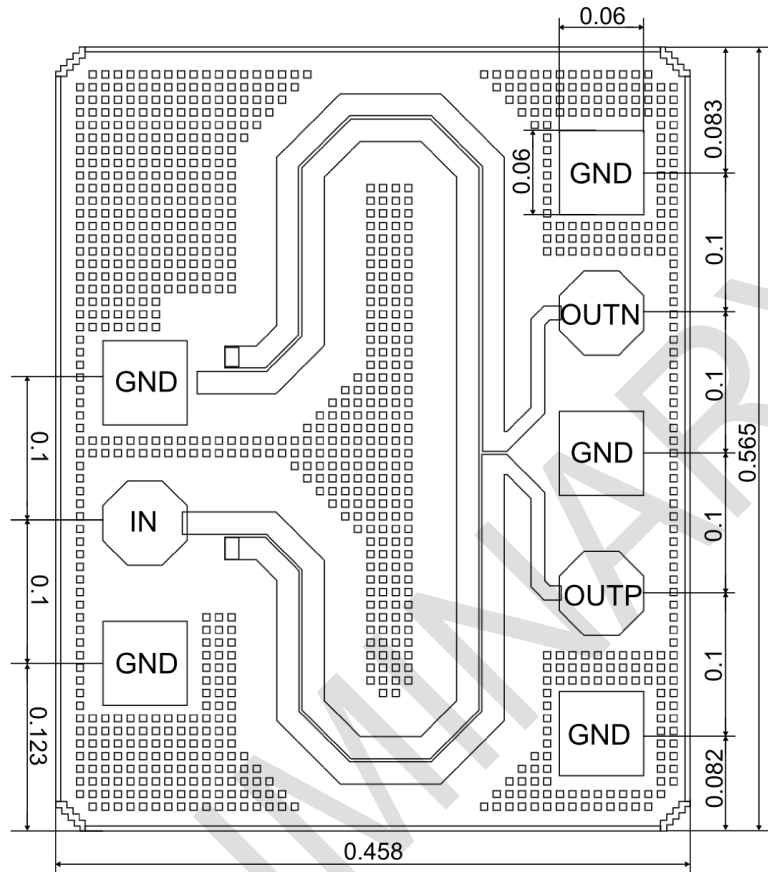
Phase Imbalance



Absolute Maximum Ratings

Parameter	Min	Typ.	Max	Units
Input Power			TBD	
Operating Temperature	TBD		TBD	°C
Storage Temperature	-50		150	°C

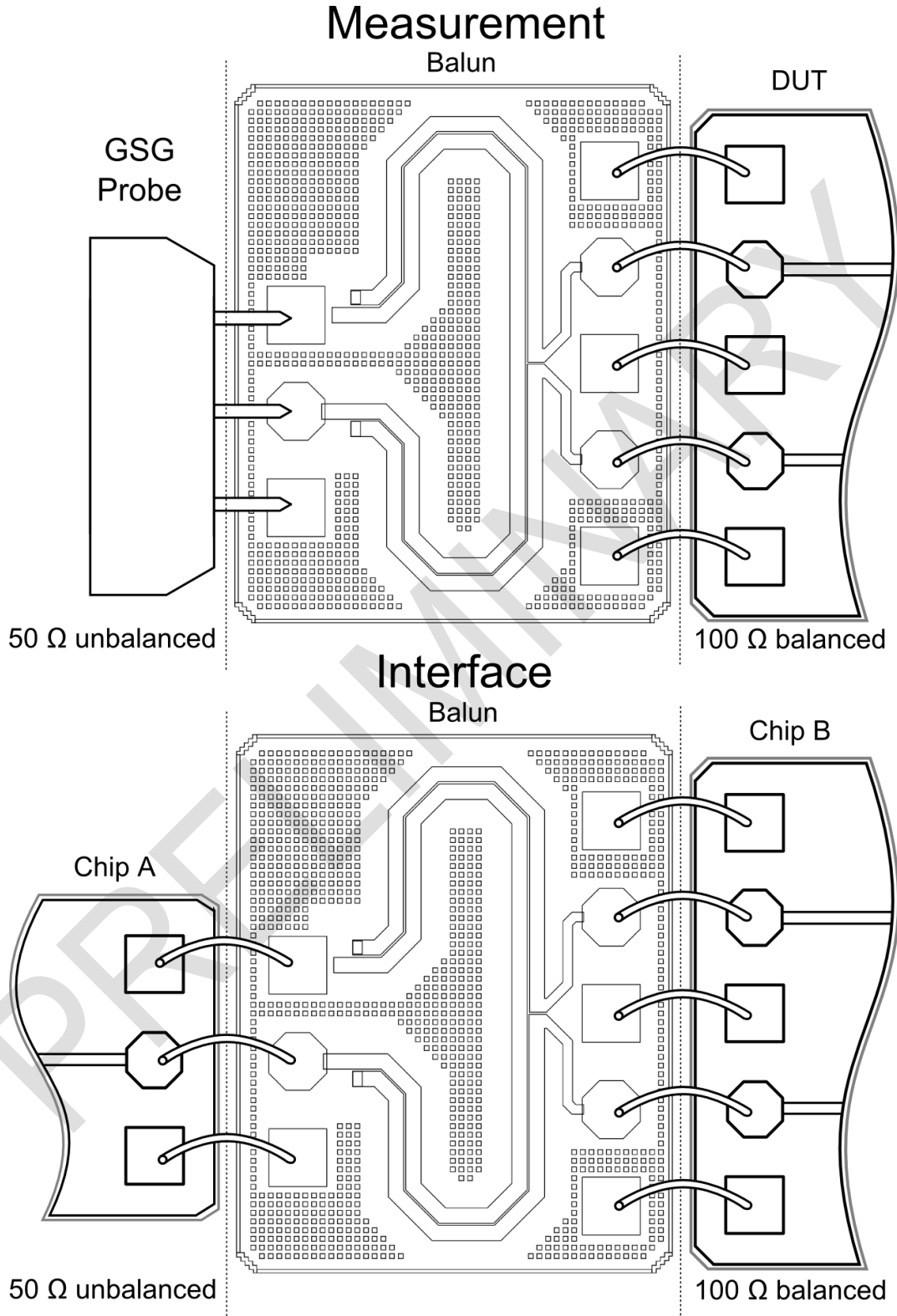
Outline Drawing and Chip Identification Information



Pad Descriptions

Pad	Function	Description	Interface
GND	Power	Ground	Power
IN	Input	Unbalanced port	Z_0
OUTP	Output	Balanced port +	$2Z_0$
OUTN	Output	Balanced port -	

Assembly Diagram



All bonds should be as short as possible.

Revision information

Version	Change List
1.0	Preliminary data

PRELIMINARY

Notes:

PRELIMINARY

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