QPP0024

1:1 Balun 45-1800 MHz

Product Overview

The QPP0024 balun is designed for applications that require small, low-cost, and high reliable surface mount components. The units are built lead-free and RoHS compliant. This balun offers low insertion loss combined with a high RF power capability across a broad temperature range. All devices are 100% RF tested.

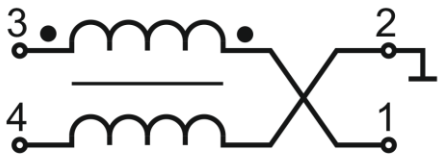
The QPP0024 is targeted for use as an in- or output balun in CATV amplifiers. Additional applications may be found in broadband, wireless and other communication systems. S-Parameter data-files are available on request.

SP5 Package

Key Features

- 45-1800 MHz
- Low insertion loss
- 75 Ω Characteristic Impedance
- Compatible with 260°C lead free soldering
- RoHS Compliant
- Industry Standard SMT Package SP5
- Available in Tape-and-Reel

Functional Block Diagram



Top View

Applications

- Broadband / CATV
- Mobile Infrastructure
- General Purpose Wireless

Ordering Information

Part No.	Description
QPP0024SB	5 pcs in sample bag
QPP0024SR	100 pcs on a 13” reel
QPP0024TR13	1000 pcs on a 13” reel (standard)

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	−55 to +100 °C
Operating Temperature Range	−40 to +100 °C
RF Power, CW, T=25 °C	+36 dBm

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability.

Recommended Operating Conditions

Parameter	Min	Typ	Max	Units
Operating Temperature	-30		+100	°C
RF Power, CW			+30	dBm

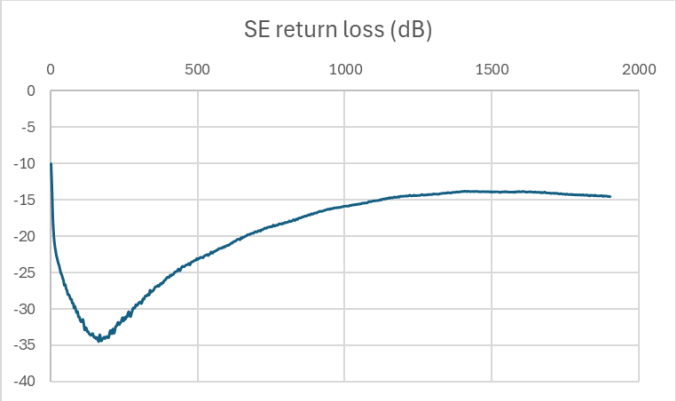
Electrical specifications are measured at specified test conditions. Specifications are not guaranteed over all recommended operating conditions.

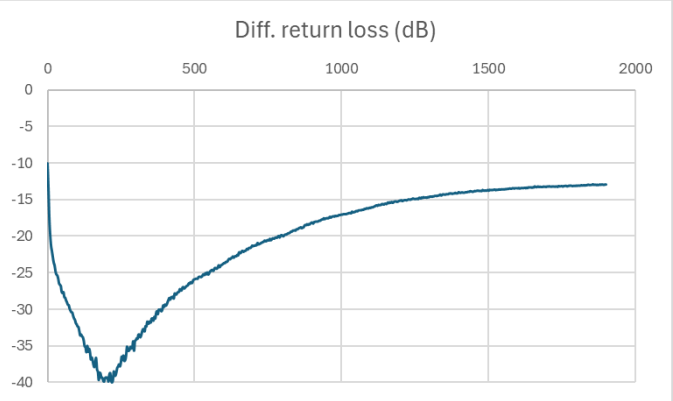
Electrical Specifications

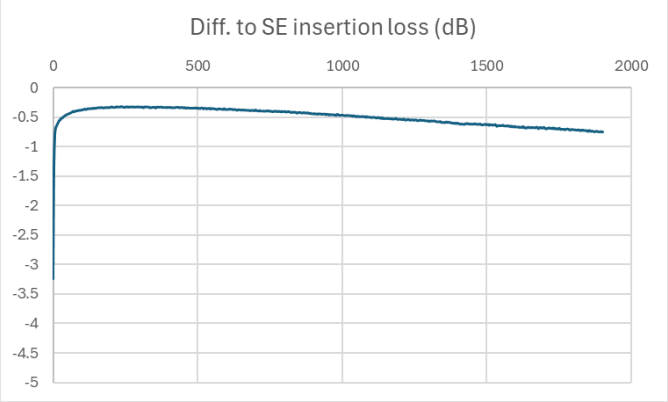
Parameter	Conditions (1)	Min	Typ	Max	Units
Operational Frequency Range		45		1800	MHz
Diff. Return Loss 1 (2)	600 MHz	-28		-22	dB
	900 MHz	-22		-16	dB
	1200 MHz	-19		-13	dB
	1800 MHZ	-17		-11	dB
SE Return Loss 2 (2)	600 MHz	-24		-19.5	dB
	900 MHz	-19.5		-15.5	dB
	1200 MHz	-17.5		-13	dB
	1800 MHz	-18		-12.5	dB
Diff. to SE Insertion Loss 1-2 (2)	45 MHz	-0.6			dB
	200 MHz	-0.4			dB
	900 MHz	-0.55			dB
	1800 MHz	-0.85			dB
Amplitude Balance (2)	45 MHz	0.9		1.9	dB
	100 MHz	0.4		1.4	dB
	900 MHz	-0.2		0.7	dB
	1800 MHz	-1.3		-0.2	dB
Phase Balance (2,3)	45 MHz	-11		-6	°
	100 MHz	-7		-2	°
	400 MHz	-0.5		3	°
	800 MHz	1.5		6	
	1200 MHz	1.5		7	°
	1800 MHz	-1		6	°
Impedance Ratio		1:1			
Type – Transmission Line		Balanced to Unbalanced			

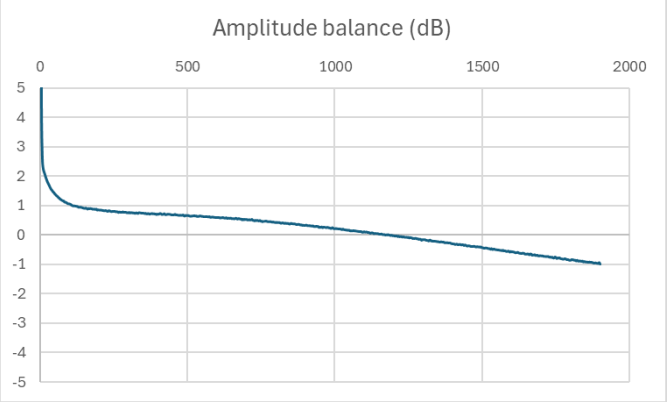
Note:
1. Test conditions unless otherwise noted: T = +25 °C, Pin = -15 dBm, 3-port measurement
   pin3 and 4: balanced (Diff.) port 1 (Z_{ref} = 75 Ω), pin1: unbalanced (SE) port 2 (Z_{ref} = 75 Ω), pin2: GND, reference plane at device leads.
2. Limits with linear transitions between frequency points.
3. Nominal phase difference is 180°.

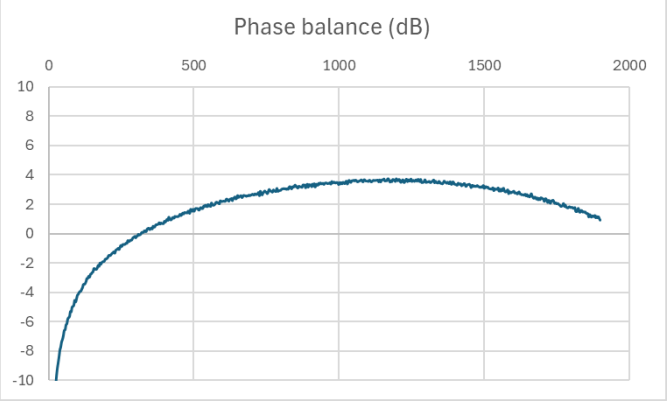
Typical Performance





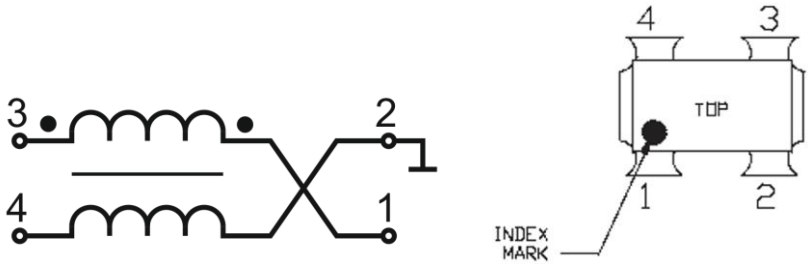






Note: Test conditions unless otherwise noted: T = +25 °C, Pin = - 15 dBm, 3-port measurement
pin3-4: balanced (Diff.) port 1 (Z_{ref} = 75 Ω), pin1: unbalanced (SE) port 2 (Z_{ref} = 75 Ω), pin2: GND, reference plane at device leads.

Pin Configuration and Description

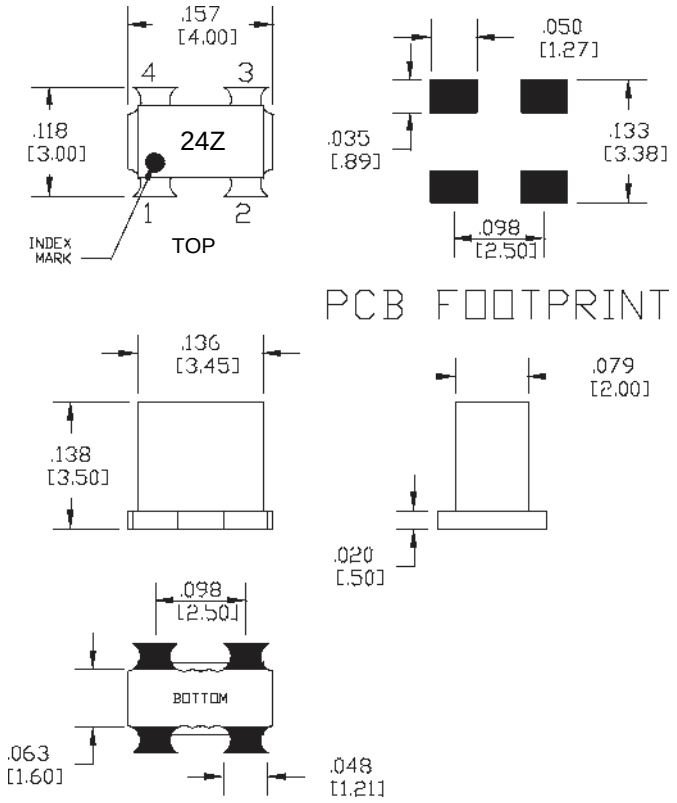


Top View

Pin No.	Label	Description
1	SECONDARY DOT	Output, unbalanced side
2	SECONDARY	Ground
3	PRIMARY DOT	Input 1, balanced side
4	PRIMARY	Input 2, balanced side

Package Marking, Dimensions and PCB Mounting Pattern

Marking: Last 2 Digits of Part Number – 24
Date Code – Z (see notes)
Index Mark Color - White



Notes:
4. All dimensions are in inches [millimeters].
5. The terminal #1 identifier and terminal numbering conform to JESD 95-1 SPP-012.
6. Contact: tin-plated
7. One digit date code:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	a	b	c	d	e	f	g	h	j	k	l	m
2024	n	p	q	r	s	t	u	v	w	x	y	z
2025	A	B	C	D	E	F	G	H	J	K	L	M
2026	N	P	Q	R	S	T	U	V	W	X	Y	Z
2027	a	b	c	d	e	f	g	h	j	k	l	m
2028	…											

RoHS Compliance

This part is compliant with 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) as amended by Directive 2015/863/EU.

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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