QPP0025

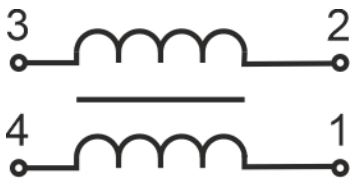
1:1 Balun 5-1218MHz

1. Product Overview and Benefits

The QPP0025 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 QPP0025 is optimized for use with Qorvo slope equalizers QPC733X up to 1218MHz. Additional applications may be found in broadband, wireless and other communication systems. S-Parameter data are available on request.

2. Functional Block Diagram



SP7 Package

3. Key Features

- 5-1218 MHz
- Low insertion loss
- 75 Ω Characteristic Impedance
- Compatible with 260°C lead free soldering
- Optimized for use with Slope Equalizer QPC733X
- RoHS Compliant
- Superior Return Loss Performance
- Available in Tape-and-Reel

4. Applications

- Broadband / CATV
- Mobile Infrastructure
- General Purpose Wireless

5. Ordering Information

Part Number	Description
QPP0025SB	5 pcs in sample bag
QPP0025SR	100 pcs on a 13” reel
QPP0025TR13	2000 pcs on a 13” reel (Standard)

6. Absolute Maximum Ratings

PARAMETER	VALUE / RANGE
Storage Temperature	- 40 to +100°C
Operating Temperature	- 40 to +100 °C
RF Power, CW, +25°C	+30 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.

7. Recommended Operating Conditions

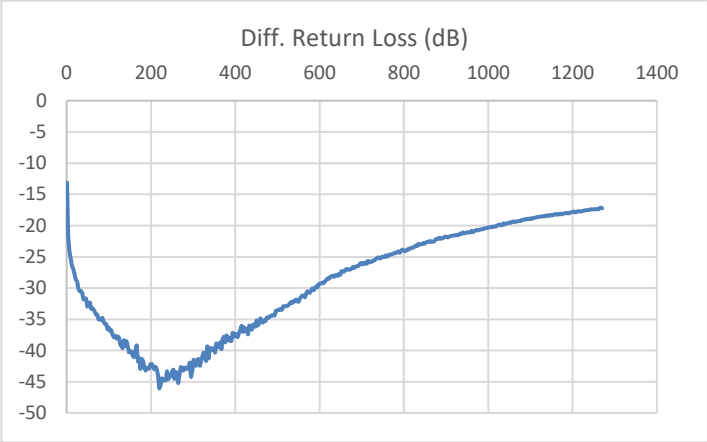
PARAMETER	VALUE / RANGE
Operating Temperature	-30 to +100°C
RF Power, CW, +25°C	< +27 dBm

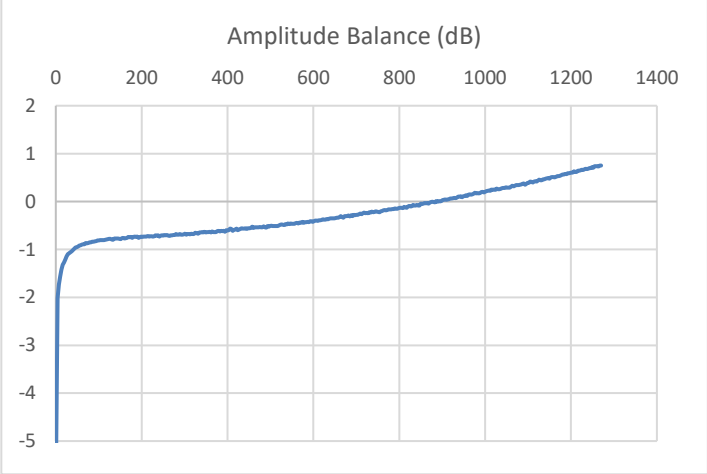
Electrical specifications are measured at specified test conditions. Specifications are not guaranteed over all recommended operating conditions.

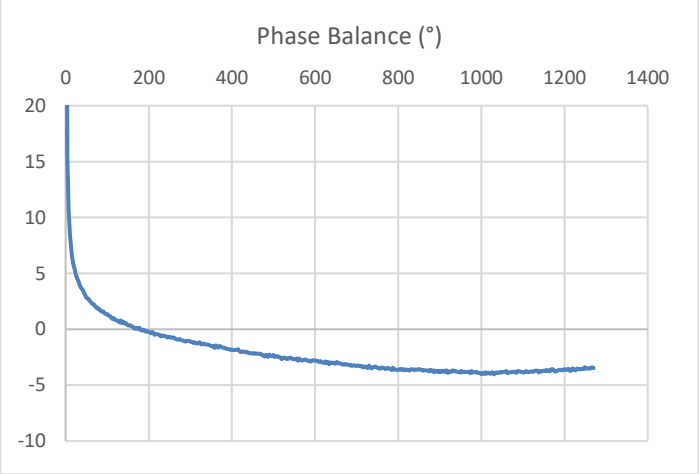
8. Electrical Specifications

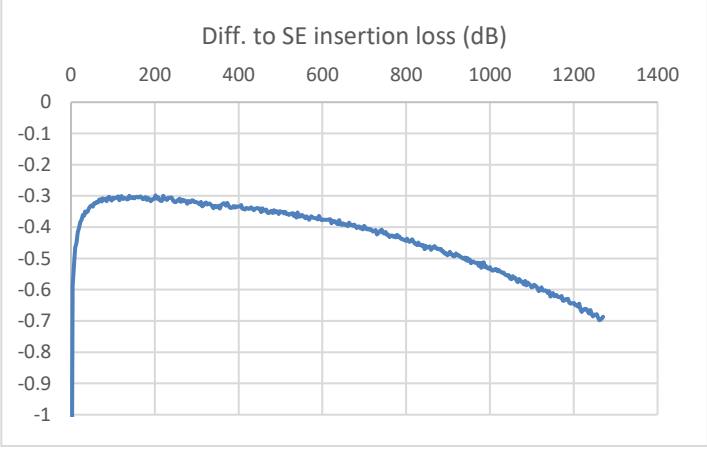
Parameter	Test Conditions (1)	Min	Typ	Max	Unit
Operational Frequency Range		5		1218	MHz
Diff. Return Loss 1 (2)	5 MHz			-18	dB
	15 MHz			-22	dB
	600 MHz			-22	dB
	1218 MHz			-15	dB
SE Return Loss 2 (2)	5 MHz			-18	dB
	15 MHz			-22	dB
	600 MHz			-22	dB
	1218 MHz			-15	dB
Diff. to SE Insertion Loss 1-2 (2)	5 MHz	-0.85			dB
	15 MHz	-0.6			dB
	45 MHz	-0.45			dB
	1218 MHz	-0.75			dB
Amplitude Balance (2)	5 MHz	-3		-0.8	dB
	15 MHz	-2		-0.8	dB
	45 MHz	-1.6		-0.7	dB
	1218 MHz	-0.2		0.7	dB
Phase Balance (2,3)	5 MHz	8		22	°
	15 MHz	3		11	°
	100 MHz	-2		4	°
	1218 MHz	-7		-2	°
Impedance Ratio		1:1			
Type – Transmission Line		Balanced to Unbalanced			

9. Typical Performance





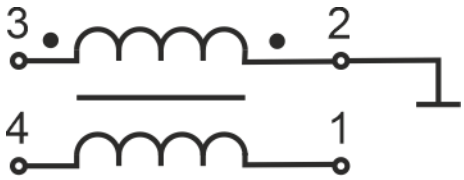




Notes:

1. Test conditions unless otherwise noted: T = +25 °C, Pin = -15 dBm, 3-port measurement in test fixture
   Pin3 and 4: balanced (Diff.) port 1 (Zref = 75 Ω), pin1: unbalanced (SE) port 2 (Zref = 75 Ω), pin2: GND, reference plane at device
2. Limits with linear transition between frequency points
3. Nominal phase difference is 180°

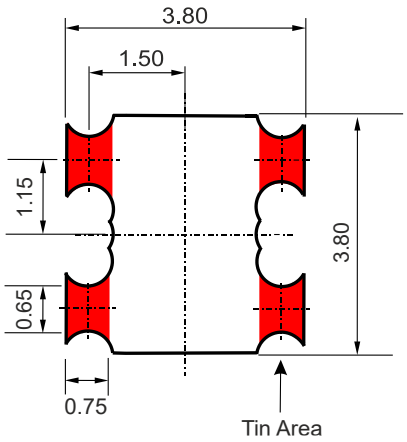
10. Pin configuration and description



Pin No.	Label	Description
1	SECONDARY	Unbalanced port
2	SECONDARY DOT	GND
3	PRIMARY DOT	Balanced 1
4	PRIMARY	Balanced 2

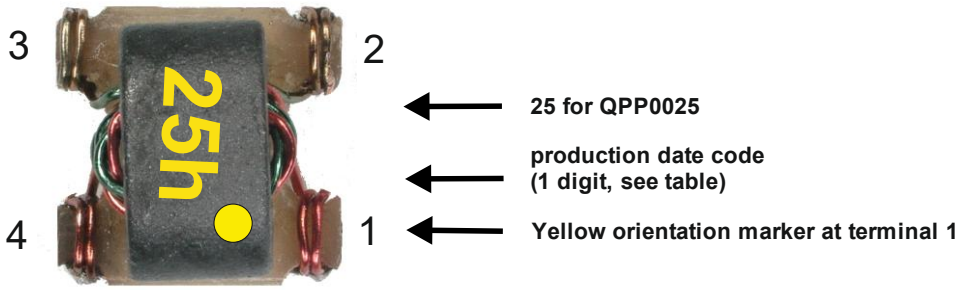
11. Package Marking, Dimensions and PCB Mounting Pattern

Package / Pad dimensions in mm:



Maximum component height 3.6mm

Pin designation and marking:

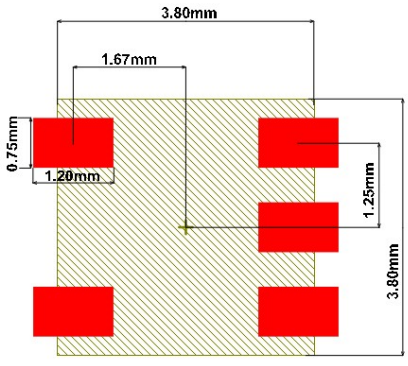


Date code:

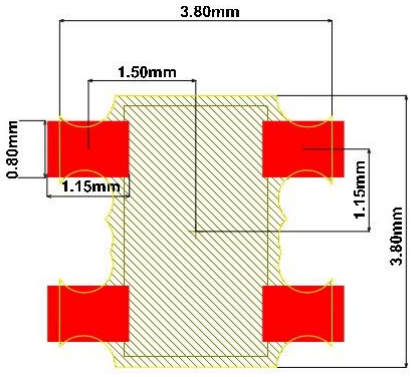
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2025	A	B	C	D	E	F	G	H	J	K	L	M
2026	N	P	Q	R	S	T	U	V	W	X	Y	Z
2027	a	b	c	d	e	f	g	h	j	k	l	m
2028	n	p	q	r	s	t	u	v	w	x	y	z
2029	A	B	C	D	E	F	G	H	J	K	L	M
2030	…											

PCB layout recommendation:

Legacy layout in QPC733X Evaluation board:

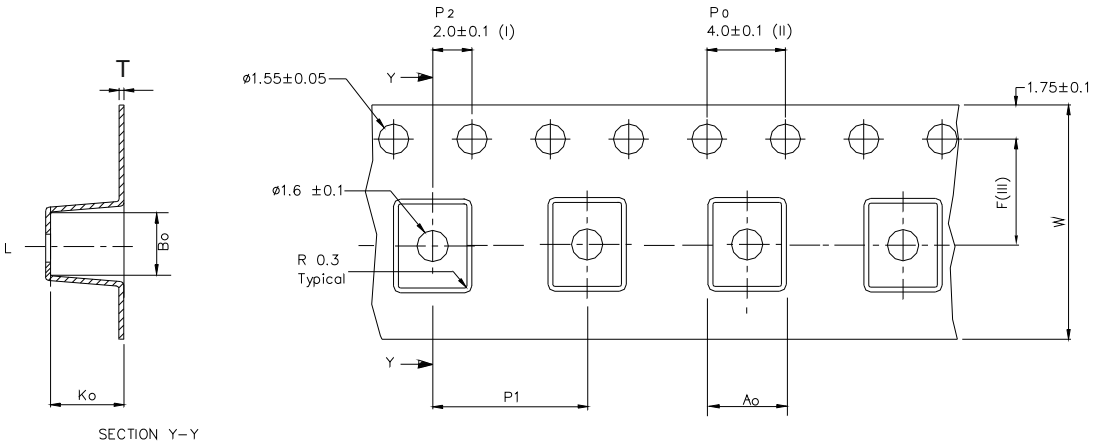


Recommended for new designs:



Solder mask: Pad size x/y +100um

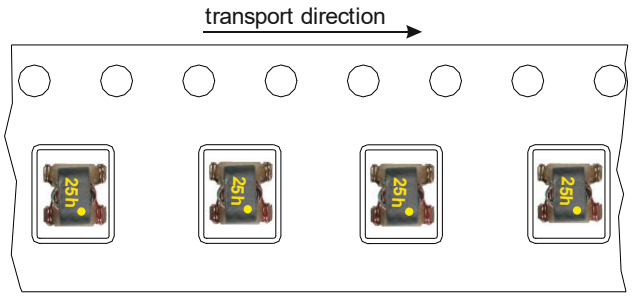
12. Tape



Ao	4.20 ± 0.1 (IV)
Bo	4.20 ± 0.1 (IV)
Ko	3.80 ± 0.1
F	5.50 ± 0.1
P_1	8.00 ± 0.1
W	12.00 ± 0.3
T	0.35 ± 0.05

(I) Measured from centerline of sprocket hole to centerline of pocket.
(II) Cumulative tolerance of 10 sprocket holes is ± 0.20.
(III) Measured from centerline of sprocket hole to centerline of pocket.
(IV) Measurement point to be 0.30 mm above from bottom pocket.

ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED



13. Environmental Compliance

This part is compliant with the 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.

14. Revision History

Revision	Description
B	Final version

Contact Information

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

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