# RF Balun Transformer

# EBI5217-H013984

2025-03-25 Rev. 1

RoHS COMPLIANT

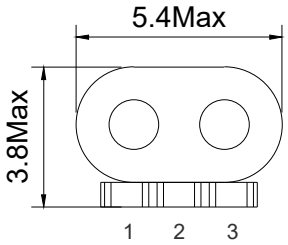
75Ω 1:1 Transmission Line Transformer 5-700 MHz

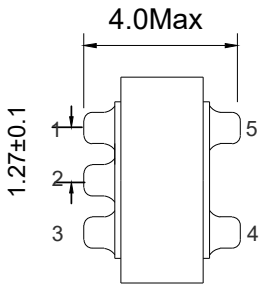
1.8GHz CATV Amplifier+IC Chips Solutions

Using Qorvo IC:QPL1820/QPL1821/QPL1822/QPL1823
Using with Mini-circuits IC :ADCA5191/ADCA5192
To replace:MiniRF MRFXF5R17

## Outline Drawing(mm)

Side View

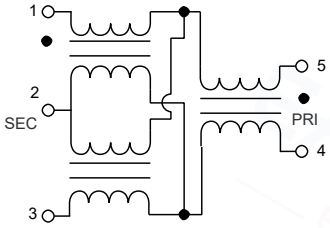


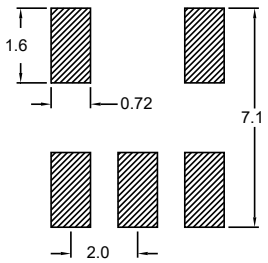

Top View

## Electrical Structure

Fig I




## Recommended Layout(mm)




## Pin Connections

| | |
|---|---|
| Input | 4 |
| Output 1 | 3 |
| Output 2 | 1 |
| AC Ground | 2 |
| Ground | 5 |

## Features

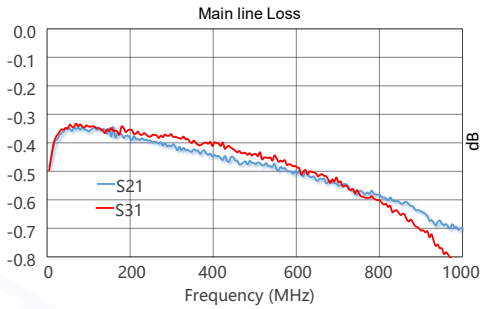
- 260°C Reflow Compatible
- RoHS compliant and lead free
- High Current DC Bias 400mA Max
- Operating temperature range: -40℃ to +85℃
- Storage temperature range: -55℃ to +125℃

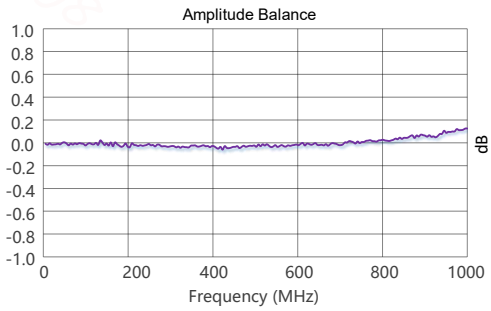
## Applications

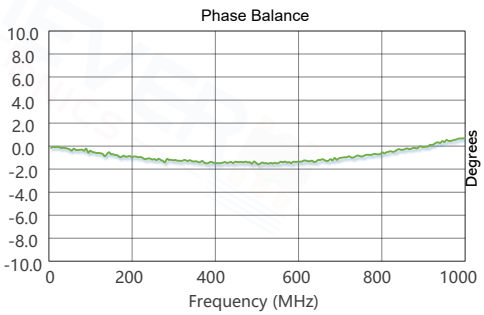
- For Docsis 3.0&4.0Cable Modem.
- For Wideband Push-pull Amplifiers.
- For CATV Amplifiers Module & Set top box.
- For CATV Optical Receivers and Amplifiers.
- For VHF/UHF Transmitters and Push-pull Amplifiers.

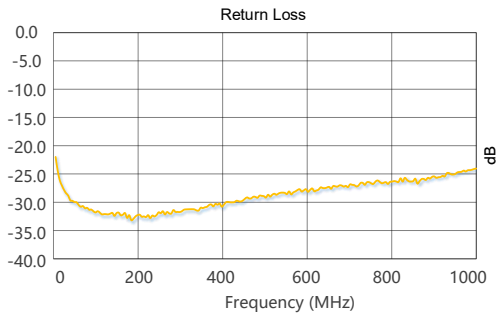
## Electrical Specifications:TA=25℃, 0dBm, Z0=75Ω

| Parameter | Test Conditions | Units | Min | Typ | Max |
|---|---|---|---|---|---|
| Insertion Loss (S21) | 5-700MHz | dB | 0.3 | 0.4 | 0.7 |
| Insertion Loss (S31) | 5-700MHz | dB | — | 0.5 | 0.8 |
| Amplitude Balance | 5-700MHz | dB | — | 0.05 | 0.3 |
| Phase Balance | 5-700MHz | | — | 1.5 | 3.0 |
| Input Return Loss(Pin4) | 5-700MHz | dB | 20 | 24 | — |

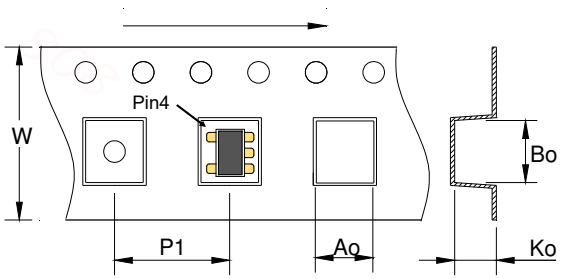



## Carrier Tape Orientation




## Tape & Reel Information

| Parameter | Units | Value |
|---|---|---|
| Qty per reel | PCS | 2000 |
| Reel Size | mm | 330 |
| Tape Width | mm | 12.00 |
| Pitch | mm | 8.00 |
| Ao | mm | 4.40 |
| Bo | mm | 5.65 |
| Ko | mm | 4.10 |



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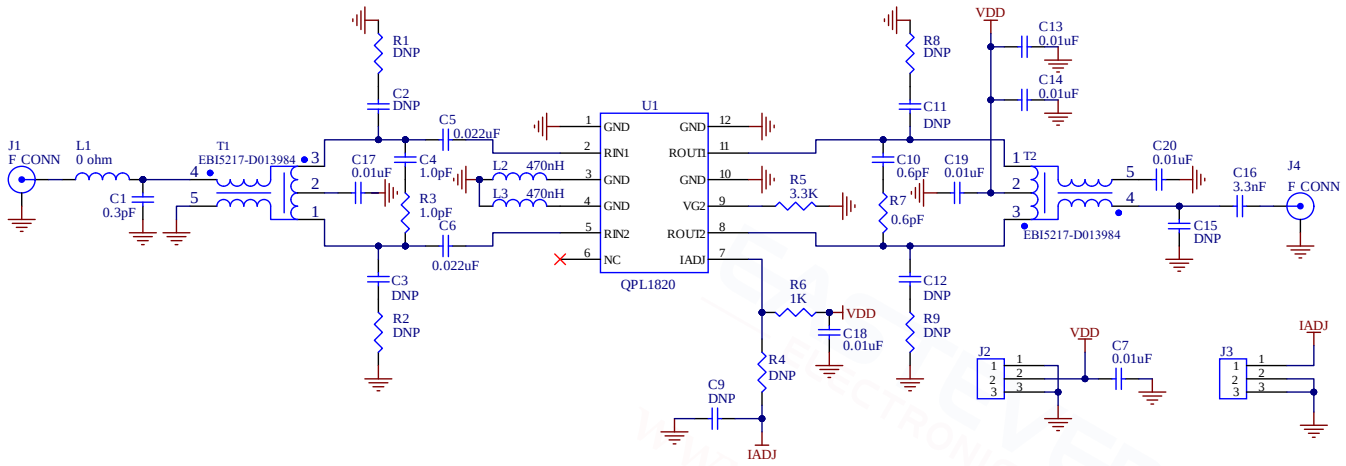
# Evaluation Board Schematic 5 MHz – 700 MHz (Upstream)




# Electrical Specifications_(Upstream)

| Parameter | Test Conditions | Units | Min | Typ | Max |
|---|---|---|---|---|---|
| Supply Voltage (VDD) | | V | | 5/8 | |
| Supply Current (IDD) | | mA | | 260/350 | |
| Gain at 5 MHz | | dB | | 20.0 | |
| Gain at 700 MHz | | dB | | 20.5 | |
| Input Return Loss | 5-700MHz | dB | | -20.0 | |
| Output Return Loss | 5-700MHz | dB | | -20.0 | |