
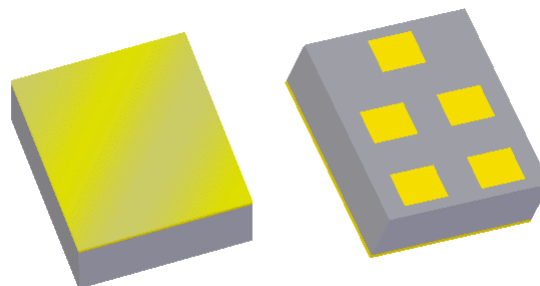


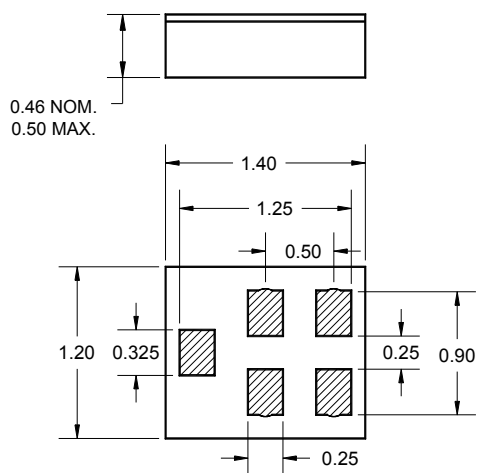
Features

- For Satellite Radio Applications
- Usable Bandwidth 45 MHz
- Low Loss
- Good Selectivity
- Ceramic Chip Scale Package (CSP)
- Single-ended Input, 50Ω
- Balanced Output, 100Ω or 200Ω
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



Package

Surface Mount 1.40 x 1.20 x 0.46 mm

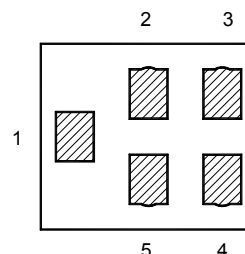


Dimensions shown are nominal in millimeters
All tolerances are ± 0.10 mm

Body: Al_2O_3 ceramic
Lid: Kovar or Alloy 42, Au over Ni plated
Terminations: Au plating 0.5 - 1.0 μ m,
over a 2 - 6 μ m Ni plating

Pin Configuration

Bottom View



Pin No.	Description
1	Input
3,4	Output
2,5	Case ground

Target Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ -40 to +85°C

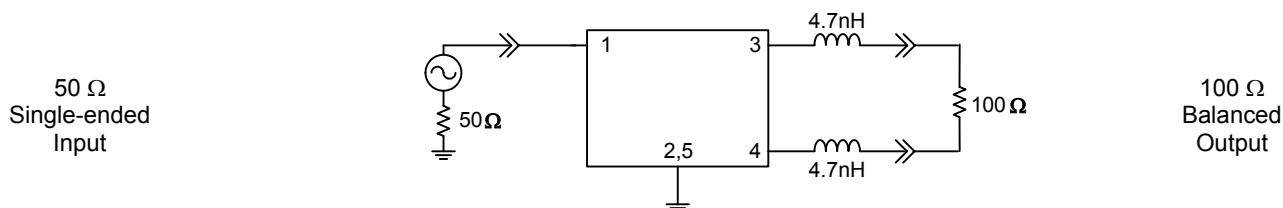
Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	2332.5	-	MHz
Maximum Insertion Loss 2310 - 2355 MHz	-	1.70	2.0	dB
Absolute Attenuation 0880 - 0960 MHz	35	45	-	dB
1710 - 1900 MHz	30	34	-	
2106 MHz	30	38	-	
2224 MHz	13	21	-	
2453 MHz	12	15	-	
2570 MHz	15	31	-	
Amplitude Variation 2310 - 2355 MHz	-	0.35	1.0	dB p-p
Output Amplitude Balance (S_{31}/S_{21}) 2310 - 2355 MHz	-1.5	-	1.5	dB
Output Phase Balance ($\phi(S_{31})-\phi(S_{21})$) 2310 - 2355 MHz	-7.5	-	7.5	degree
Source Impedance (single-ended) ⁽⁴⁾	-	50	-	Ω
Load Impedance (balanced) ⁽⁴⁾	-	100	-	Ω

Notes:

1. All target specifications are based on TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

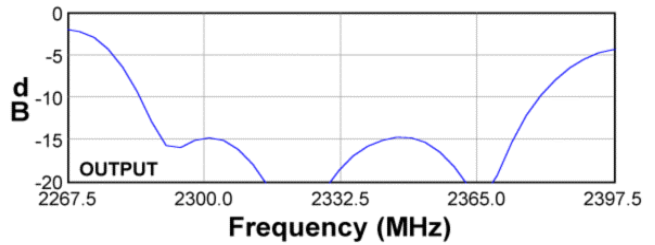
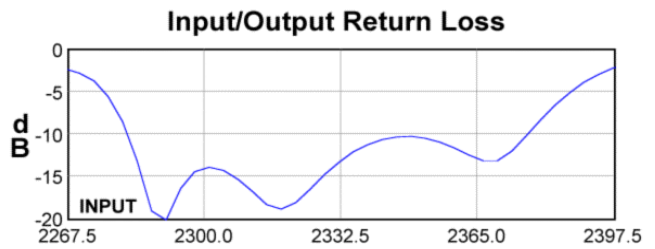
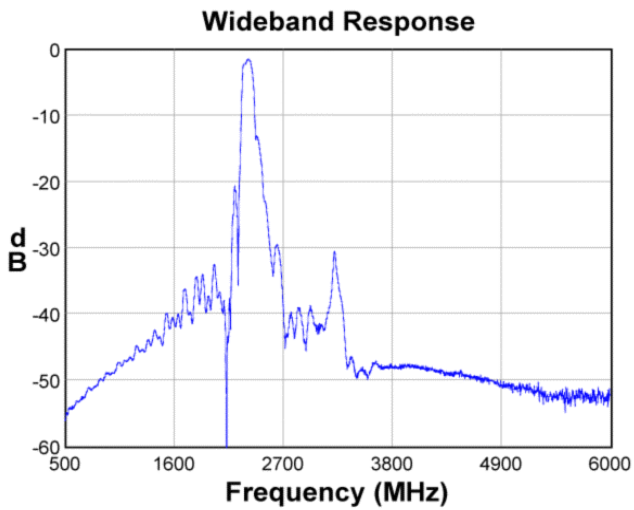
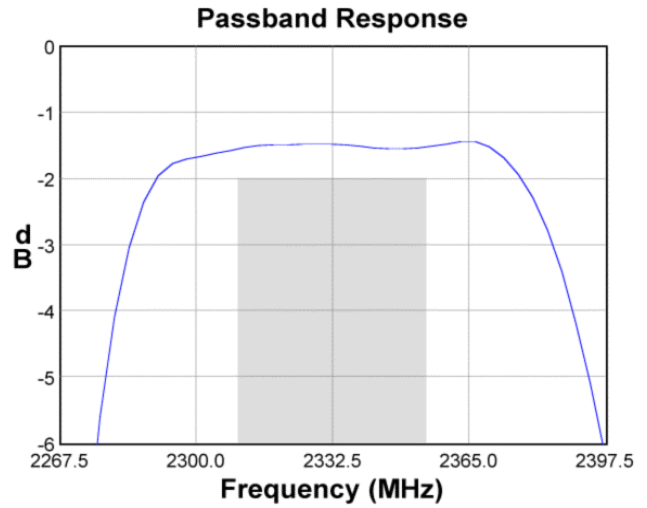
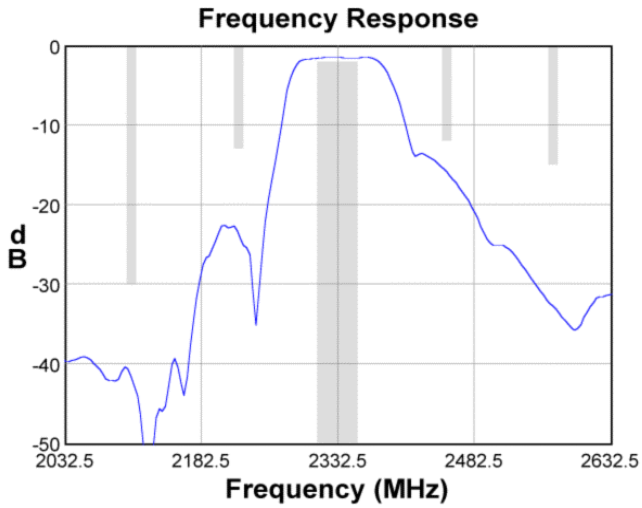


PCB: PCB-5BT V-1

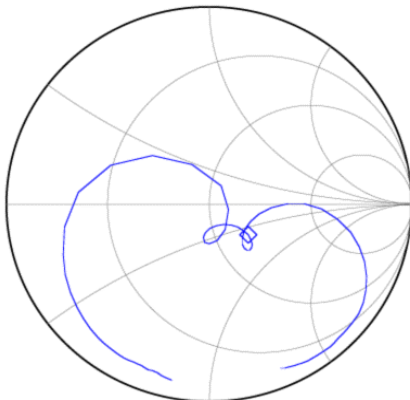
Inductor Kit: LQW15AN4N7D10 0402 series inductors

Port extension: 58psec (input), 43psec (output+), 43psec (output-)

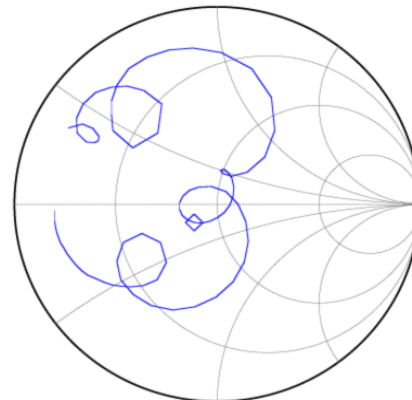
Typical Performance (at +25°C)



Input Smith Chart



Output Smith Chart



Target Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ -40 to +85°C

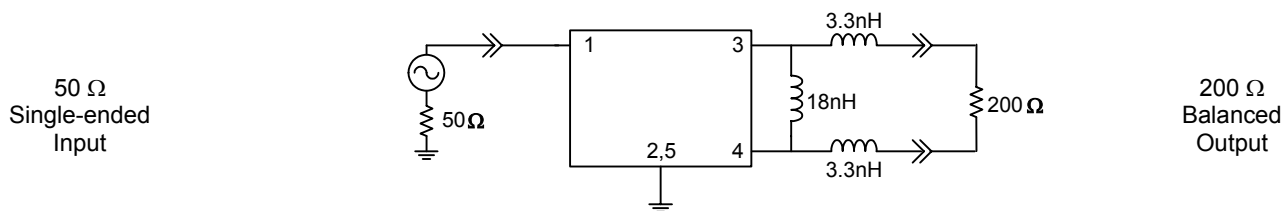
Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	2332.5	-	MHz
Maximum Insertion Loss 2310 - 2355 MHz	-	1.70	2.0	dB
Absolute Attenuation 0880 - 0960 MHz	35	45	-	dB
1710 - 1900 MHz	30	34	-	
2106 MHz	30	38	-	
2224 MHz	13	21	-	
2453 MHz	12	15	-	
2570 MHz	15	31	-	
Amplitude Variation 2310 - 2355 MHz	-	0.35	1.0	dB p-p
Output Amplitude Balance (S_{31}/S_{21}) 2310 - 2355 MHz	-1.5	-	1.5	dB
Output Phase Balance [$\phi(S_{31})-\phi(S_{21})$] 2310 - 2355 MHz	-7.5	-	7.5	degree
Source Impedance (single-ended) ⁽⁴⁾	-	50	-	Ω
Load Impedance (balanced) ⁽⁴⁾	-	200	-	Ω

Notes:

1. All target specifications are based on TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

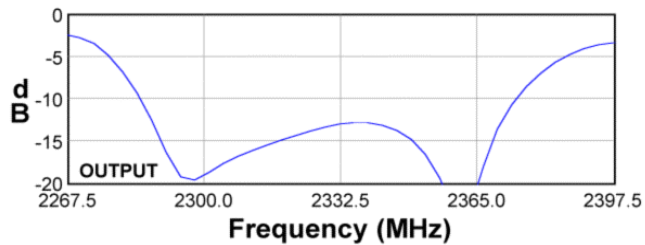
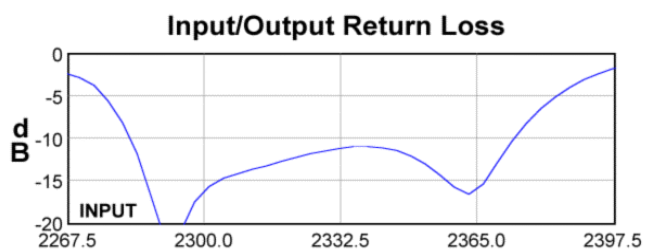
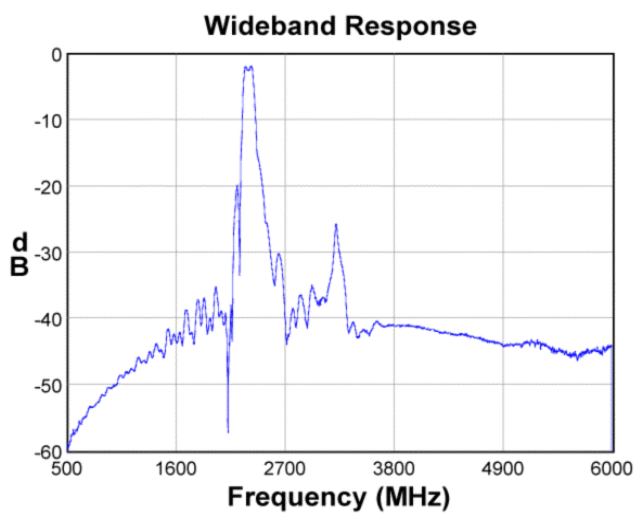
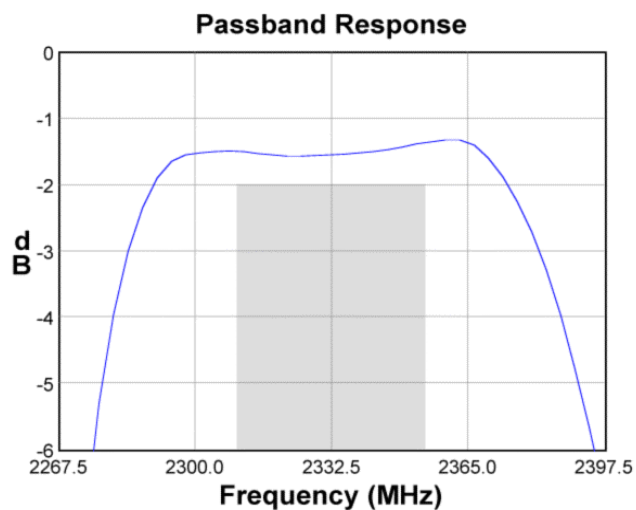
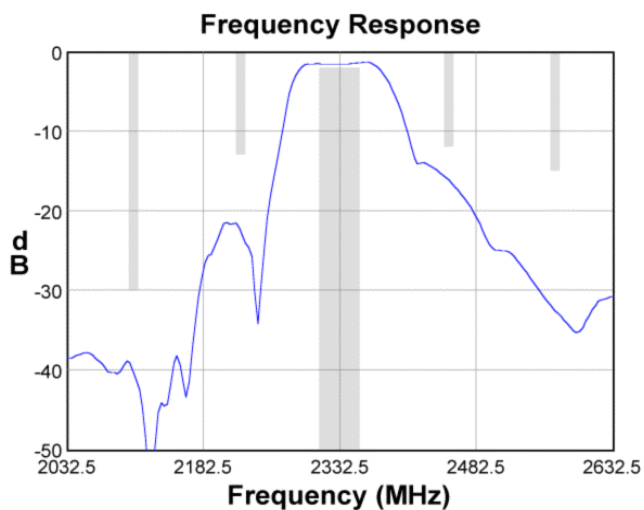


PCB: PCB-5BT V-1

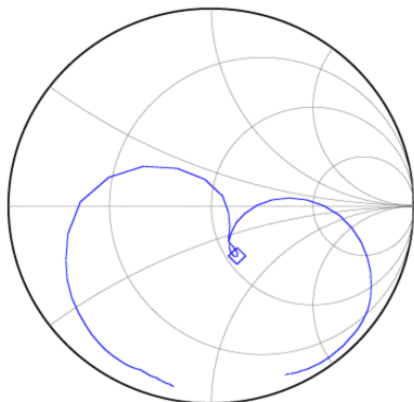
Inductor Kit: LQW15AN4N7D10, LQW15AN18NH00 0402 series inductors

Port extension: 58ps (input), 43ps (output +), 43ps (output -)

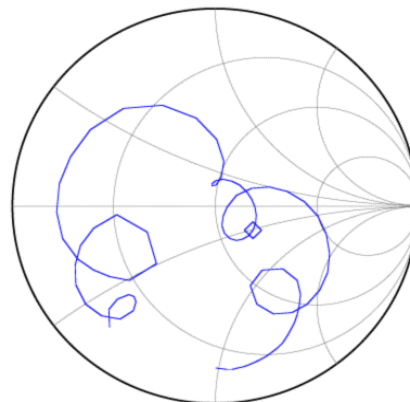
Typical Performance (at +25°C)



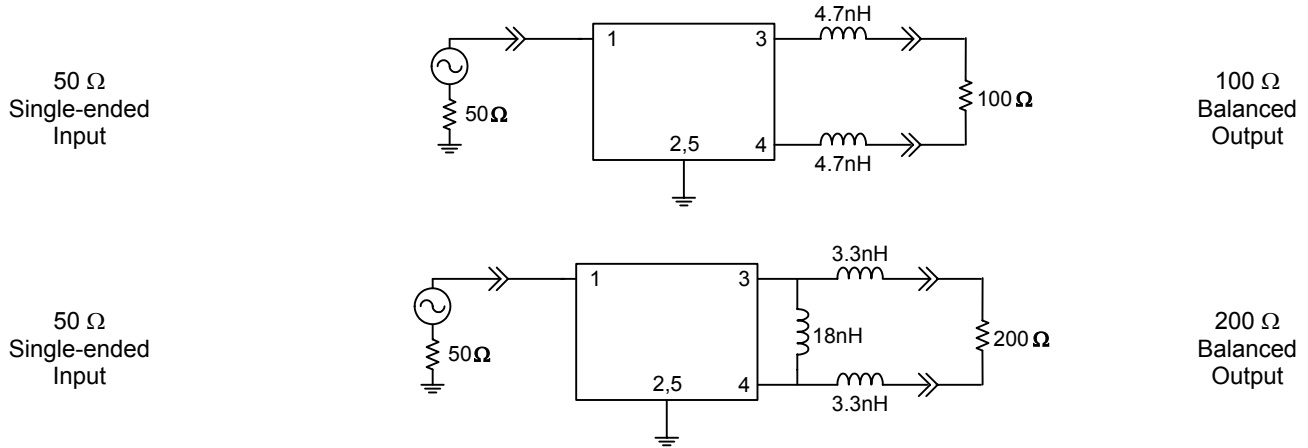
Input Smith Chart



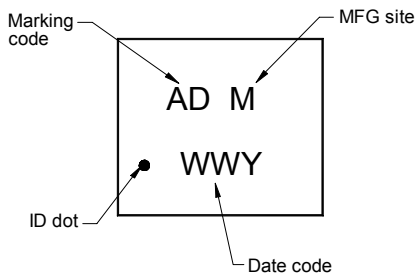
Output Smith Chart



Matching Schematics

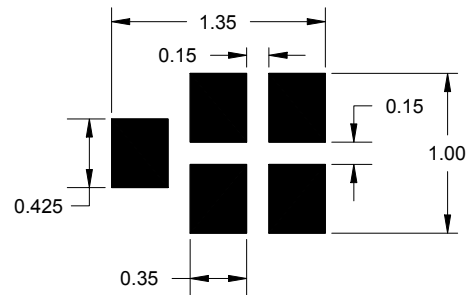


Marking



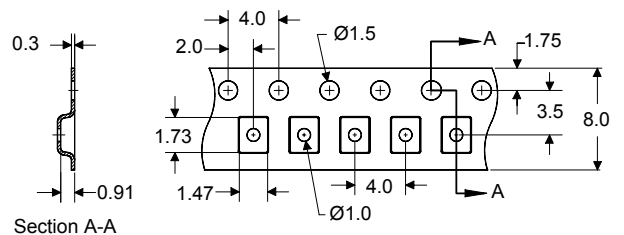
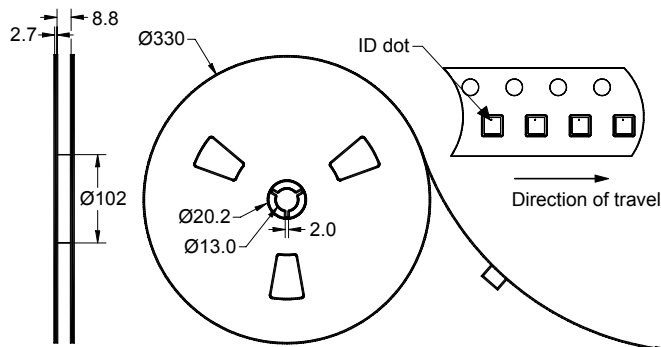
The date code consists of: WW = 2 digit week,
Y = last digit of year, M = manufacturing site code

PCB Footprint



This footprint represents a recommendation only
Dimensions shown are nominal in millimeters

Tape and Reel



Dimensions shown are nominal in millimeters
Packaging quantity: 10,000 units/reel


Data Sheet

Maximum Ratings


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T _{stg}	-40	+115	°C

Important Notes

Warnings

- Electrostatic Sensitive Device (ESD) 
- Avoid ultrasonic exposure

RoHS Compliance

- This product complies with EU directive 2002/95/EC (RoHS) 

Solderability

- Compatible with JEDEC J-STD-020C **Pb-free** process, **260°C** peak reflow temperature ([see soldering profile](#))

Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[RoHS Information](#)

[Other Technical Information](#)

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