
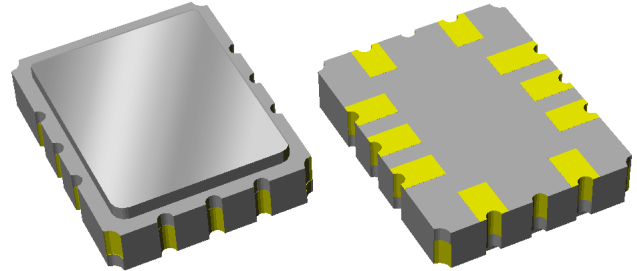


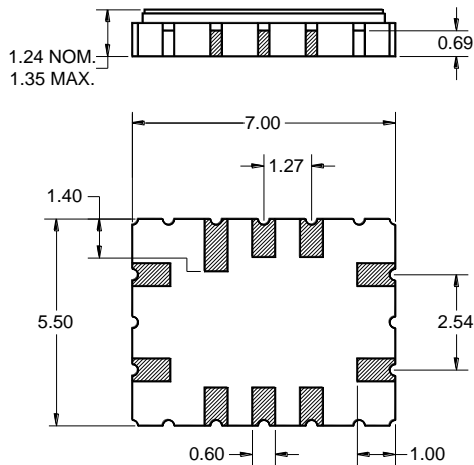
Features

- For Base Stations applications
- Usable 1.0 dB bandwidth of 18.4 MHz
- Low loss
- High Attenuation
- Single-ended operation, 50 Ω
- Small Package
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



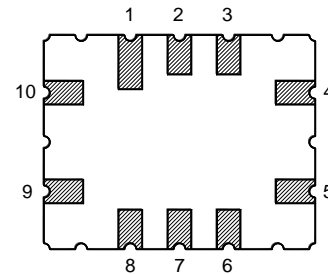
Package

Surface Mount 7.00 x 5.50 x 1.24 mm
SMP-28C



Pin Configuration

Bottom View



Pin No.	Description
4	Output
9	Input
5,10	To be grounded
1,2,3	Case ground
6,7,8	Case ground

Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall
length and width ±0.10mm

Body: Al_2O_3 ceramic
Lid: Kovar, Ni plated
Terminations: Au plating 0.5 - 1.0µm,
over a 2 - 6µm Ni plating

Data Sheet

Electrical Specifications ⁽¹⁾

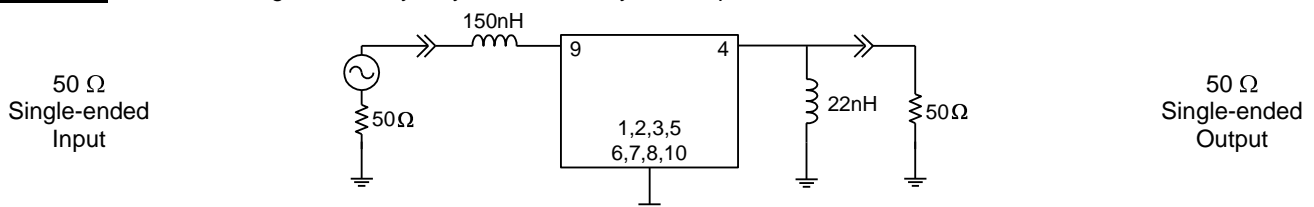
Operating Temperature Range: ⁽²⁾ -30 to +80 °C

Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	140	-	MHz
Insertion Loss @ 140 MHz (Fo)	-	9.1	10.25	dB
1.0 dB Bandwidth	-	19.9	-	MHz
Lower 1.0 dB Bandedge ⁽⁴⁾	-	129.9	130.8	MHz
Upper 1.0 dB Bandedge ⁽⁴⁾	149.2	150.2	-	MHz
3.0 dB Bandwidth	-	21	-	MHz
Lower 3.0 dB Bandedge ⁽⁴⁾	-	129.4	130.5	MHz
Upper 3.0 dB Bandedge ⁽⁴⁾	149.5	150.4	-	MHz
30 dB Bandwidth ⁽⁴⁾	-	24.3	-	MHz
Lower 30 dB Bandedge	126.8	128.2	-	MHz
Upper 30 dB Bandedge	-	152.5	153.2	MHz
Amplitude Ripple ⁽⁵⁾ Over the 1 dB bandwidth	-	0.35	0.8	dB p-p
Group Delay Ripple 130.8 -149.2 MHz	-	47	85	ns p-p
Absolute Delay	-	0.66	-	µsec
Relative Attenuation ⁽⁴⁾				
10 - 90 MHz	45	64	-	dB
90 - 120 MHz	40	47	-	dB
120 - 122.5 MHz	35	44	-	dB
122.5 - 126.8 MHz	30	38	-	dB
153.2 - 157.5 MHz	30	36	-	dB
157.5 - 160 MHz	35	46	-	dB
160 - 190.00 MHz	40	48	-	dB
190 - 800 MHz	45	52	-	dB
Input VSWR ⁽⁵⁾ 130.8 -149.2 MHz	-	1.5	2.0	-
Output VSWR ⁽⁵⁾ 130.8 -149.2 MHz	-	1.4	2.0	-
Source/Load Impedance ⁽⁶⁾	-	50	-	Ω

Notes:

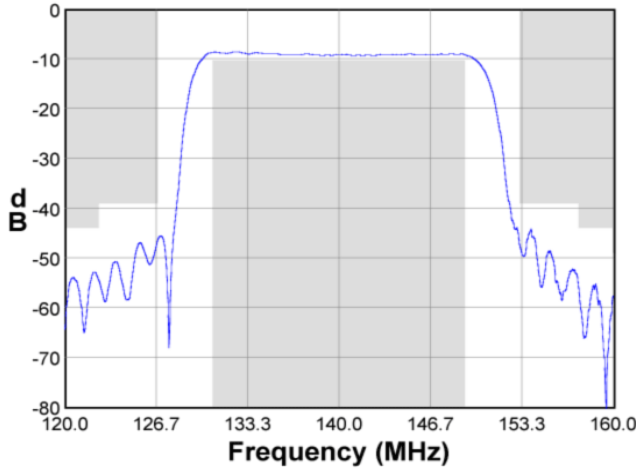
- All target specifications are based on TriQuint test circuit shown below
- In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
- Relative to Insertion Loss at center frequency
- Describes the maximum peak to adjacent valley variation over the passband (not including roll-off)
- 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

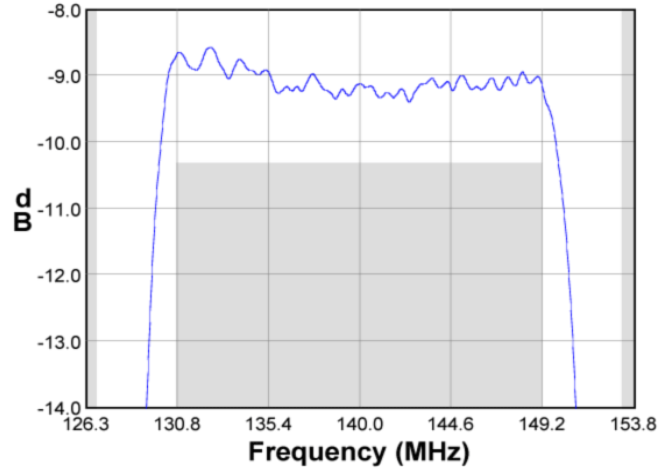


Typical Performance (at +25°C)

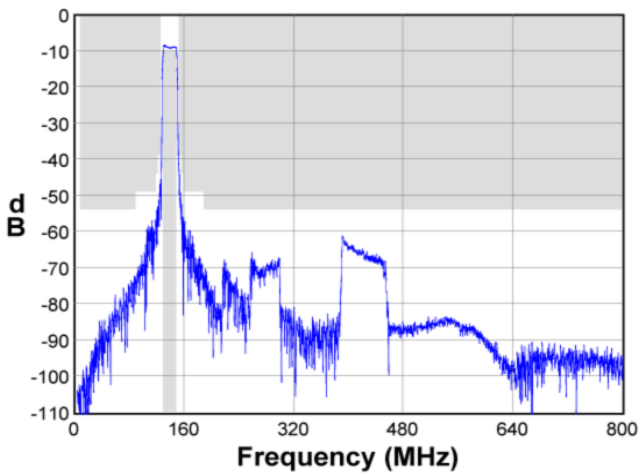
Frequency Response



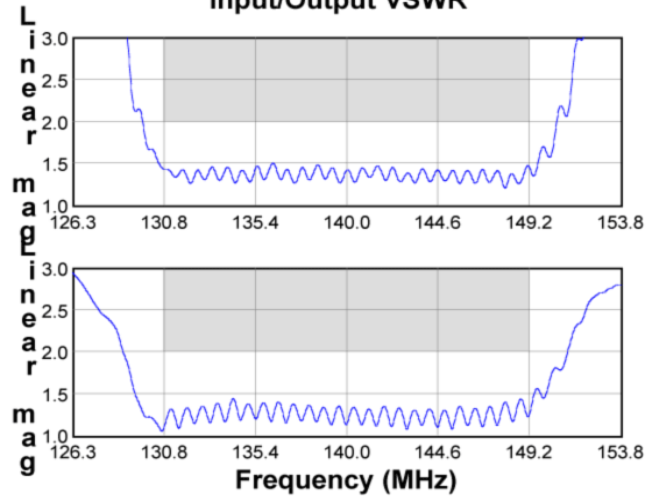
Passband Response



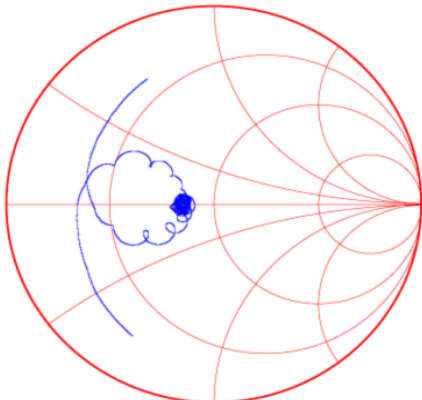
Wideband Response



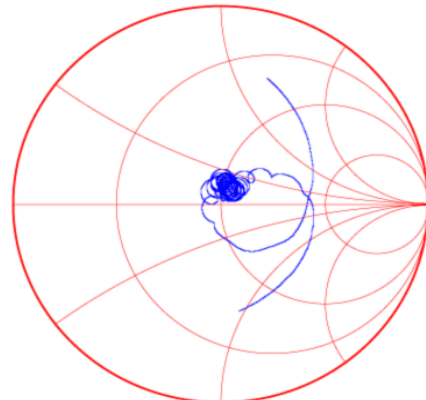
Input/Output VSWR



Input Smith Chart

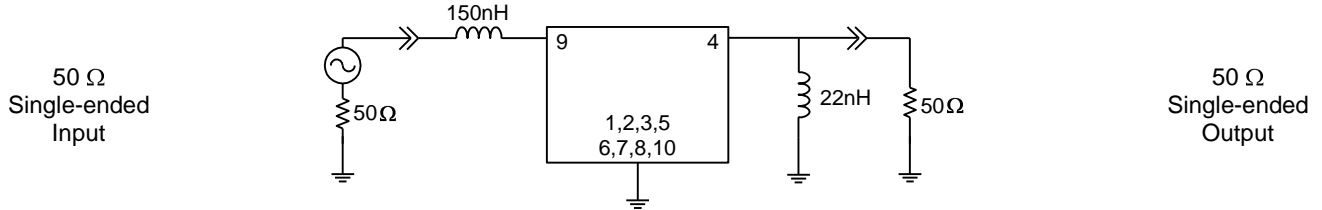


Output Smith Chart



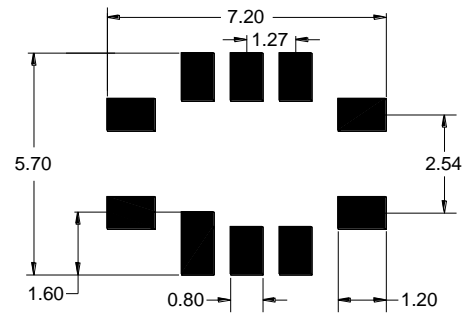
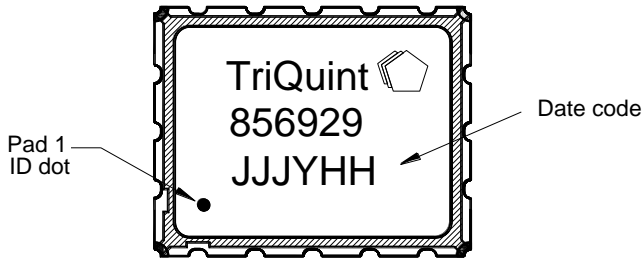
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics



Marking

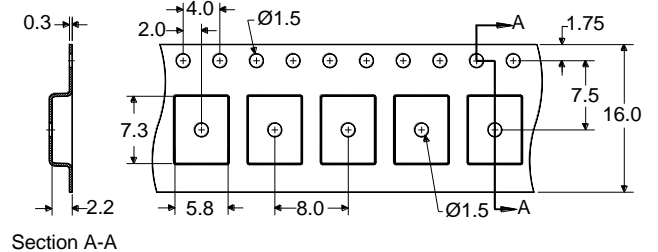
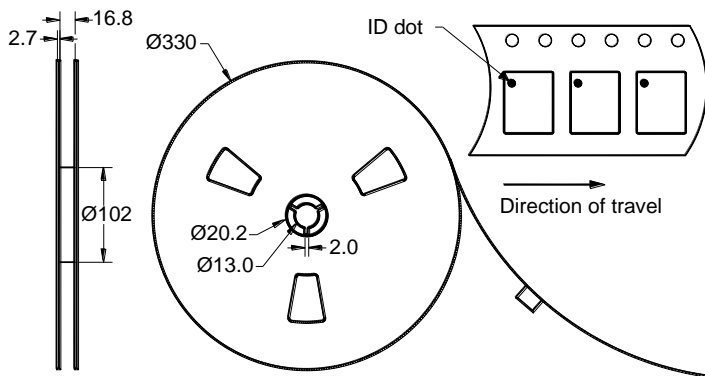
PCB Footprint



The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

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

Tape and Reel




Dimensions shown are nominal in millimeters
Packaging quantity: 3000 units/reel

Maximum Ratings


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-30	+80	°C
Storage Temperature Range	T _{stg}	-40	+85	°C
Input Power	P _{in}	-	+10	dBm

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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