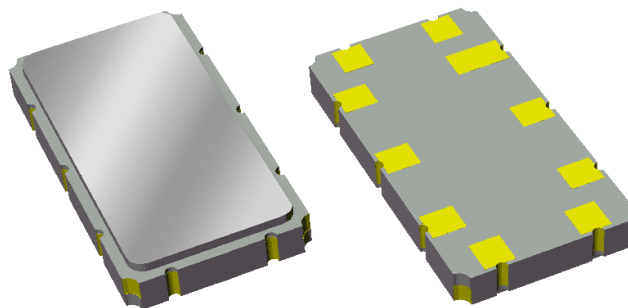


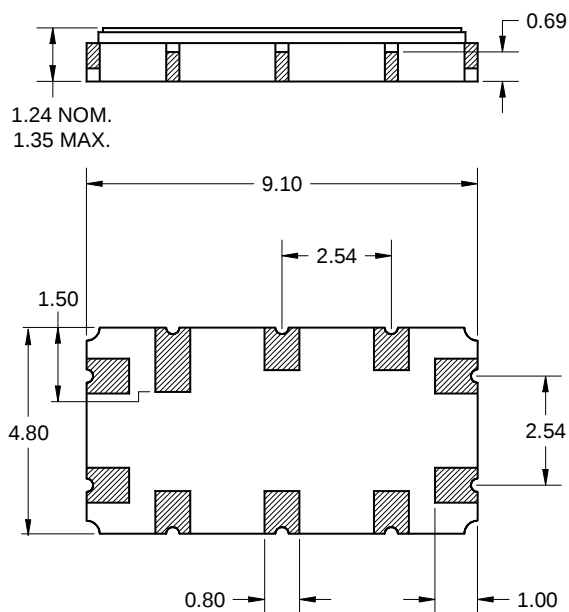
Features

- For GSM applications
- Usable bandwidth 180 kHz
- High attenuation
- Balanced operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



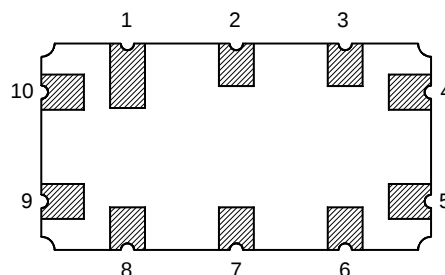
Package

Surface Mount 9.10 x 4.80 x 1.24 mm
SMP-35C



Pin Configuration

Bottom View



Balanced Configuration

Pin No.	Description
9	Input +
10	Input -
4	Output +
5	Output -
1,2,3,6,7,8	Case Ground

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

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

Electrical Specifications ⁽¹⁾

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

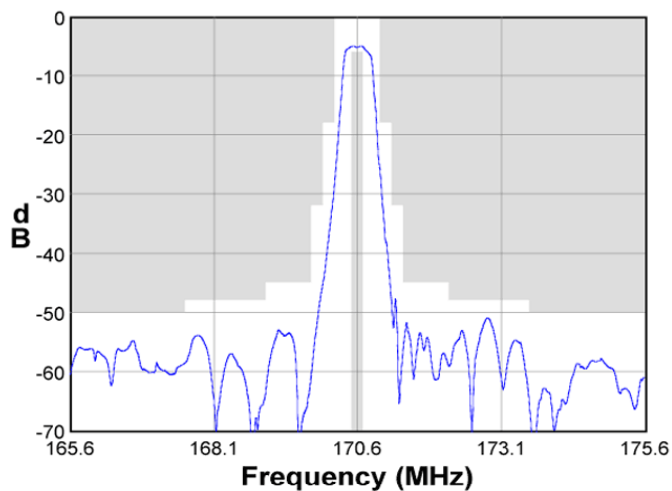
Parameter ⁽³⁾	Minimum	Typical ⁽⁴⁾	Maximum	Unit
Center Frequency (fc)	-	170.6	-	MHz
Passband	fc – 0.090	-	fc + 0.090	MHz
Maximum Insertion Loss in Passband	-	5.2	7.0	dB
Lower 1 dB Bandedge ⁽⁵⁾	-	170.400	fc – 0.090	MHz
Upper 1 dB Bandedge ⁽⁵⁾	fc + 0.090	170.825	-	MHz
Lower 13 dB Bandedge ⁽⁵⁾	fc – 0.400	170.295	-	MHz
Upper 13 dB Bandedge ⁽⁵⁾	-	170.940	fc + 0.400	MHz
Lower 27 dB Bandedge ⁽⁵⁾	fc – 0.600	170.170	-	MHz
Upper 27 dB Bandedge ⁽⁵⁾	-	171.050	fc + 0.600	MHz
Lower 40 dB Bandedge ⁽⁵⁾	fc – 0.800	170.020	-	MHz
Upper 40 dB Bandedge ⁽⁵⁾	-	171.180	fc + 0.800	MHz
Amplitude Variation fc-0.090 – fc+0.090 MHz	-	0.3	1.0	dB p-p
Group Delay Variation fc-0.090 – fc+0.090 MHz	-	400	1000	ns p-p
Passband IP3 ⁽⁶⁾	30	-	-	dBm
Ultimate Rejection ⁽⁵⁾				
10 – fc-75 MHz	40	60	-	dB
fc-75 – fc-35 MHz	45	60	-	dB
fc-35 – fc-5.8 MHz	45	52	-	dB
fc-5.8 – fc-3.0 MHz	45	49	-	dB
fc-3.0 – fc-1.6 MHz	43	50	-	dB
fc-1.6 – fc-0.8 MHz	40	43	-	dB
fc+0.8 – fc+1.6 MHz	40	43	-	dB
fc+1.6 – fc+3.0 MHz	43	52	-	dB
fc+3.0 – fc+5.8 MHz	45	53	-	dB
fc+5.8 – fc+35 MHz	45	49	-	dB
fc+35 – fc+75 MHz	45	55	-	dB
fc+75 – 2000 MHz	40	49	-	dB
Source Impedance (balanced) ⁽⁷⁾	-	200	-	Ω
Load Impedance (balanced) ⁽⁷⁾	-	200	-	Ω
VSWR	-	<1.5	2:1	-

Notes:

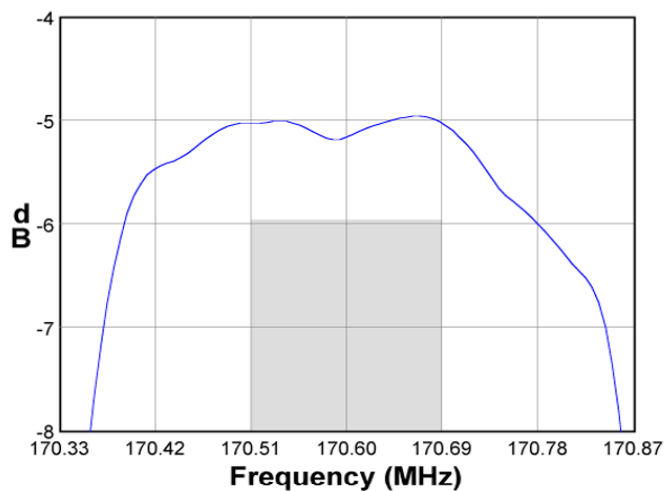
1. All specifications are based on the TriQuint test circuit (matching schematics shown on page 4)
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. Typical values are based on average measurements at room temperature
5. Relative to insertion loss at center frequency
6. Guaranteed by design
7. This is the optimum impedance in order to achieve the performance shown

Typical Performance (at room temperature)

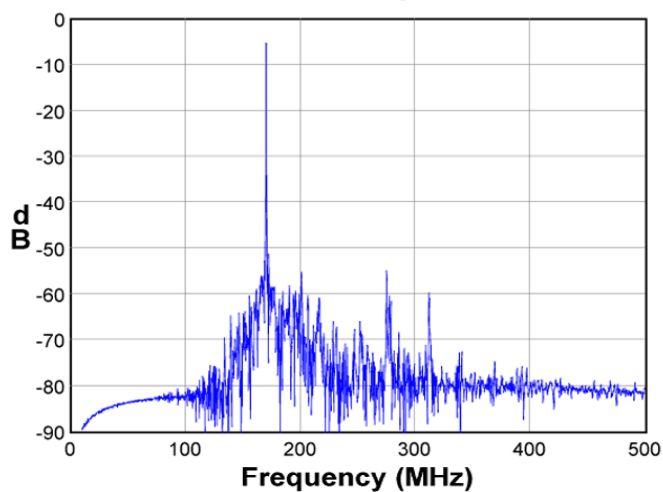
Frequency Response



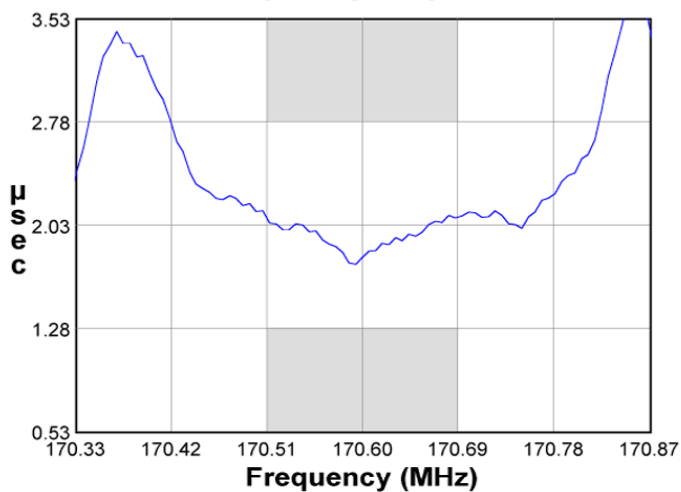
Passband Response



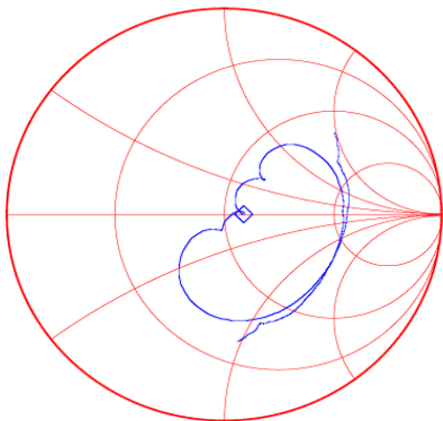
Wideband Response



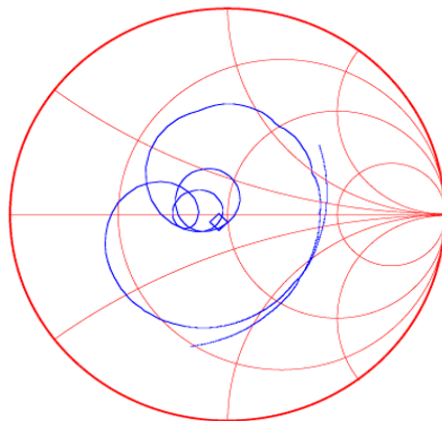
Group Delay Response



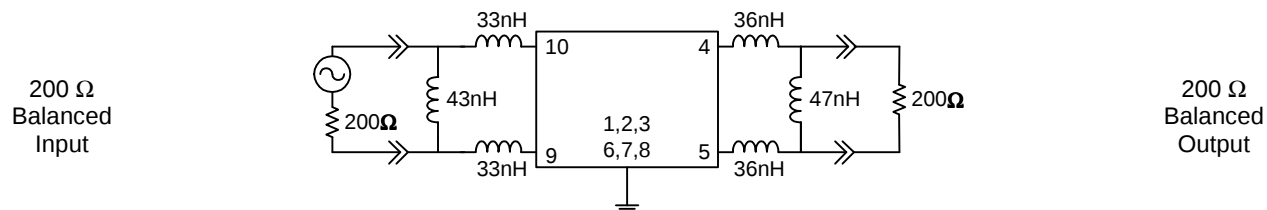
Input Smith Chart



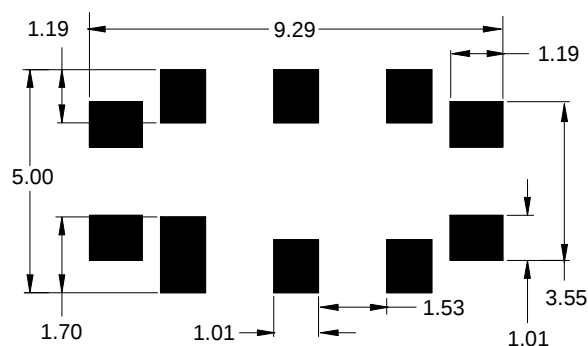
Output Smith Chart



Actual matching values may vary due to PCB layout and parasitics

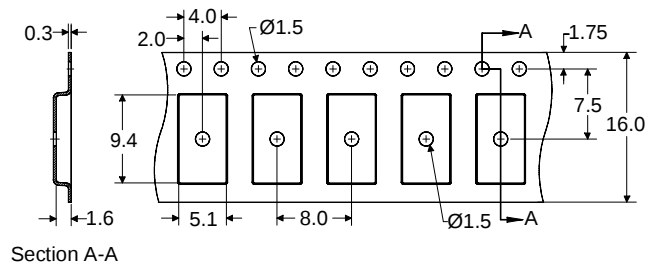
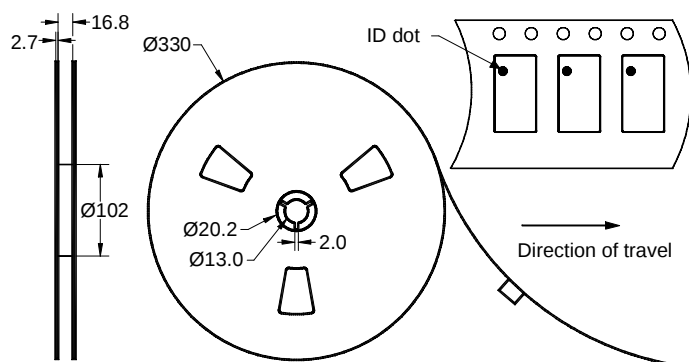


PCB Footprint



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

Tape and Reel



Dimensions shown are nominal in millimeters
Packaging quantity: 4000 units/reel

Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T _{stg}	-40	+85	°C
Input Power	P _{in}	-	+20	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 JESD22-B102, Pb-free process, 260C 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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