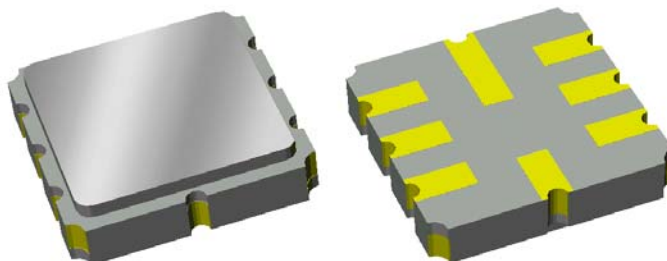


Data Sheet

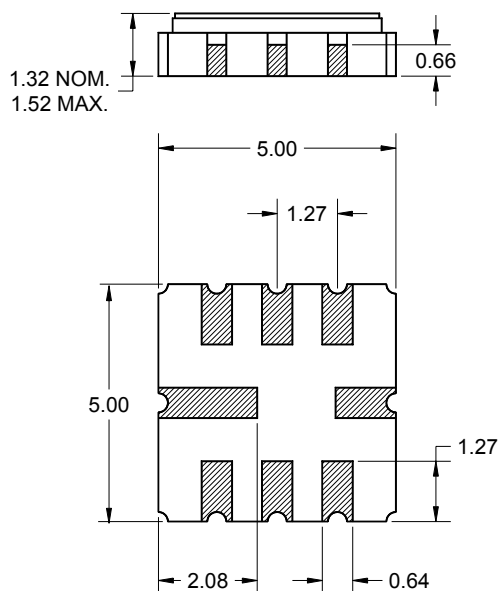
Features

- For GSM IF applications
- Usable bandwidth of 160 kHz
- Low loss
- High attenuation
- Balanced operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



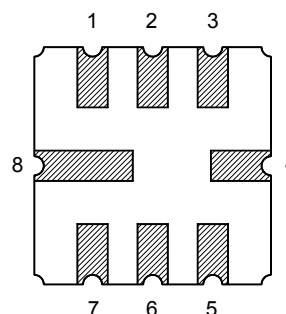
Package

Surface Mount 5.00 x 5.00 x 1.32 mm



Pin Configuration

Bottom View



Pin No.	Description
1	Input
2	Input return
5	Output
6	Output return
3,4,7,8	Case ground

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

Data Sheet

Electrical Specifications ⁽¹⁾

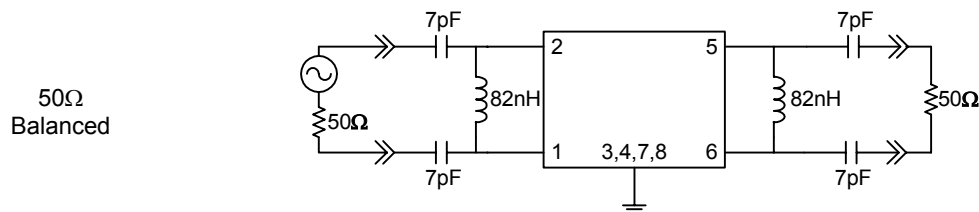
Operating Temperature Range: ⁽²⁾ -20 to +70 °C

Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency, f_o	-	225	-	MHz
Insertion Loss at 225 MHz				
Excluding losses due to matching	-	2.3	3.8	dB
Including losses in matching test circuit shown below	-	3.5	5.0	dB
Amplitude Variation				
224.9200 - 225.0800 MHz	-	0.5	3.2	dB p-p
224.9325 - 225.0675 MHz	-	0.3	2.2	dB p-p
Rejection ⁽⁴⁾				
223 - 224.4 MHz	35	45	-	MHz
224.4 - 224.6 MHz	26	32	-	MHz
224.6 - 224.8 MHz	5	11	-	MHz
225.2 - 225.4 MHz	5	13	-	MHz
225.4 - 225.6 MHz	26	30	-	MHz
225.6 - 227.0 MHz	35	39	-	MHz
Out of Band Rejection				
10 - 215 MHz	42	45	-	dB
235 - 750 MHz	42	45	-	dB
Group Delay Ripple				
224.9200 - 225.0800 MHz	-	0.9	1.8	μsec
224.9325 - 225.0675 MHz	-	0.6	1.6	μsec
224.9500 - 225.0500 MHz	-	0.2	1.3	μsec
Optimal Source Impedance: ⁽⁵⁾	-	704Ω 332nH	-	Ω
Optimal Load Impedance: ⁽⁵⁾	-	739Ω 359nH	-	Ω

Notes:

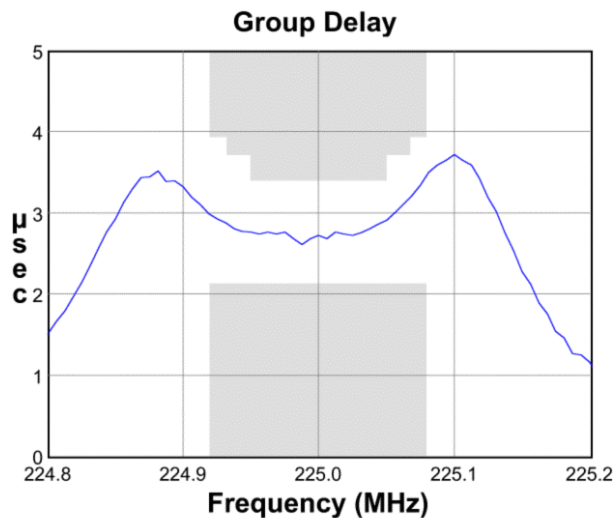
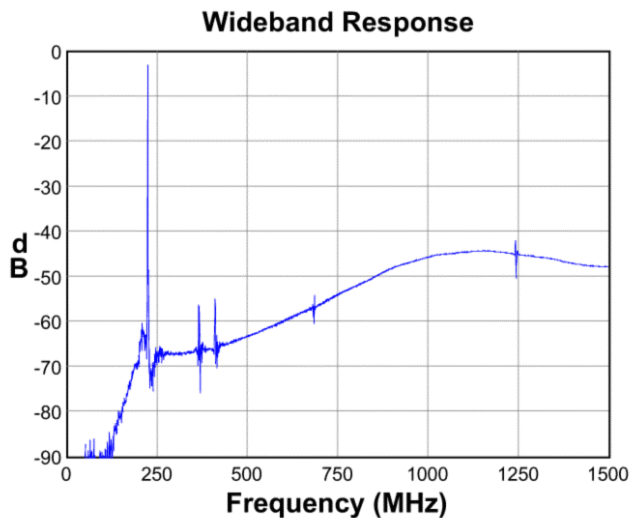
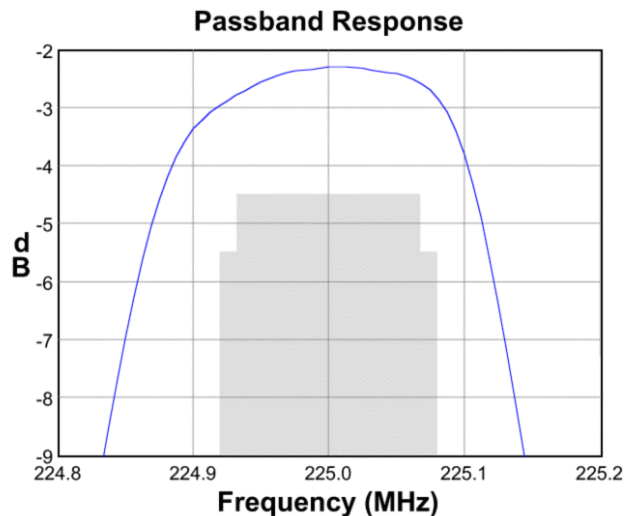
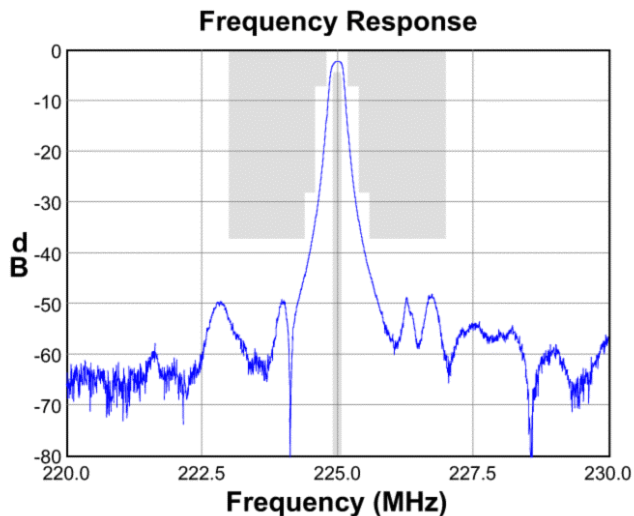
1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to manufacturing tolerances
4. Relative to insertion loss at 225 MHz
5. This is the complex conjugate of the unmatched filter's impedance resulting in maximum power transfer

Test Circuit:

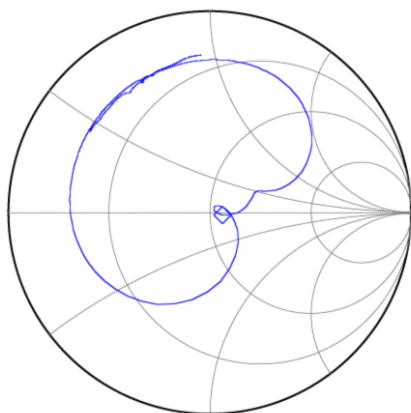


Data Sheet

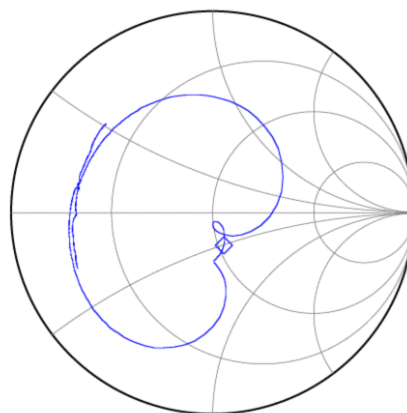
Typical Performance (at +25°C)



Input Smith Chart



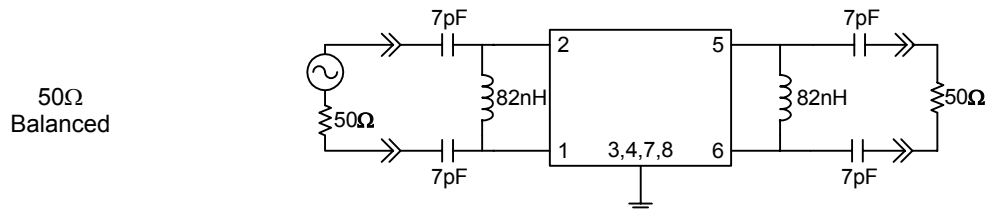
Output Smith Chart



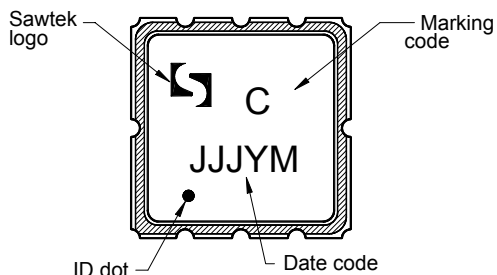
Data Sheet

Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

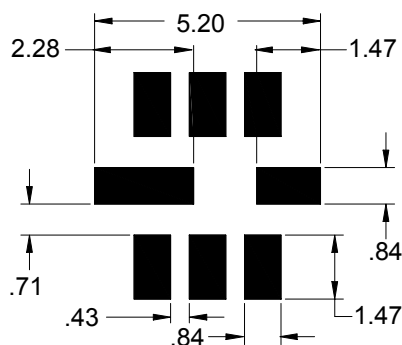


Marking



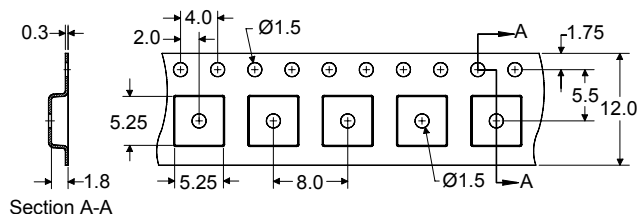
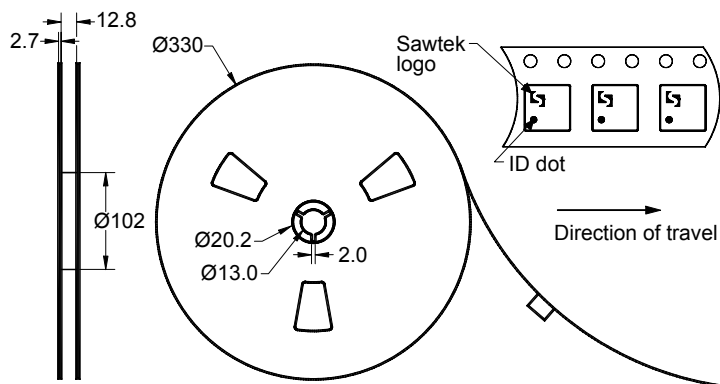
The date code consists of: JJJ = Julian day,
Y = last digit of year, M = manufacturing site code

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: 4000 units/reel

Data Sheet

Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-20	+70	°C
Storage Temperature Range	T _{stg}	-40	+85	°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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