
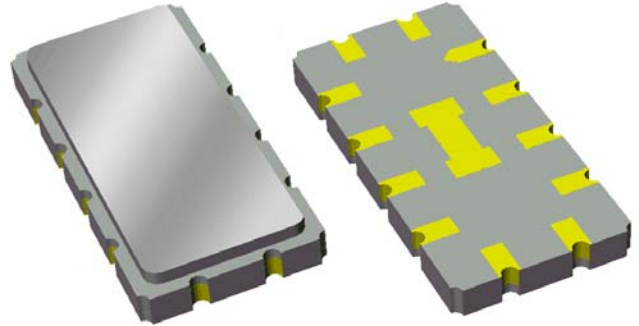


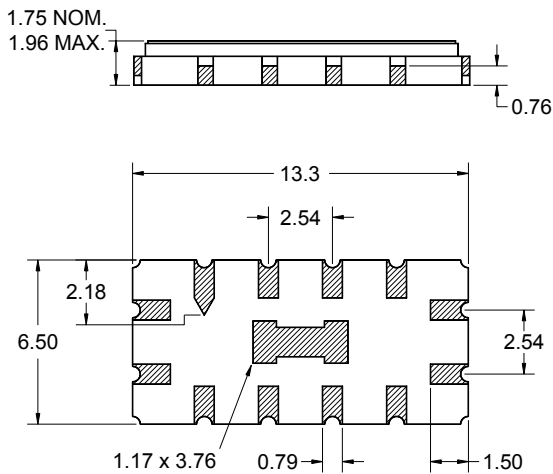
**Features**

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



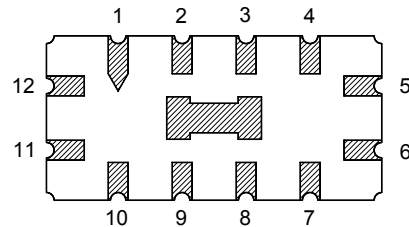
**Package**

Surface Mount 13.30 x 6.50 x 1.75 mm



**Pin Configuration**

Bottom View



Pin No.	Description
5	Output
11	Input
6,12	To be grounded
1,2,3,4	Case ground
7,8,9,10	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 <sup>(1)</sup>**

Operating Temperature Range: <sup>(2)</sup> -30 to +80 °C

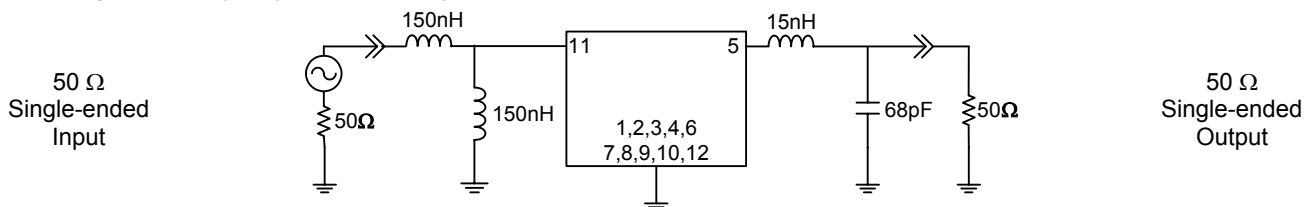
Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
Center Frequency, $f_o$	-	140	-	MHz
Insertion Loss @ $f_o$	-	9.3	11	dB
1.0 dB Bandwidth <sup>(4)</sup>	-	20.7	-	MHz
Lower 1.0 dB Bandedge	-	129.7	130.8	MHz
Upper 1.0 dB Bandedge	149.2	150.4	-	MHz
3.0 dB Bandwidth <sup>(4)</sup>	-	21.6	-	MHz
Lower 3.0 dB Bandedge	-	129.3	130.2	MHz
Upper 3.0 dB Bandedge	149.8	150.9	-	MHz
35 dB Bandwidth <sup>(4)</sup>	-	24.4	-	MHz
Lower 35 dB Bandedge	126.8	128.0	-	MHz
Upper 35 dB Bandedge	-	152.4	153.2	MHz
Passband Ripple <sup>(5)</sup> Over the 1 dB bandwidth	-	0.5	0.8	dB
Group Delay Ripple 130.8 - 149.2 MHz	-	100	150	nsec
Absolute Delay	-	1	-	µsec
Relative Attenuation <sup>(4)</sup>				
10 - 90 MHz	35	55	-	dB
90 - 120 MHz	40	53	-	dB
120 - 126.8 MHz	35	45	-	dB
153.2 - 160 MHz	35	39	-	dB
160 - 190 MHz	40	49	-	dB
190 - 800 MHz	35	58	-	dB
Input VSWR 130.8 - 149.2 MHz	-	2.0	2.5	-
Output VSWR 130.8 - 149.2 MHz	-	1.8	2.3	-
Source/Load Impedance <sup>(6)</sup>	-	50	-	Ω

**Notes:**

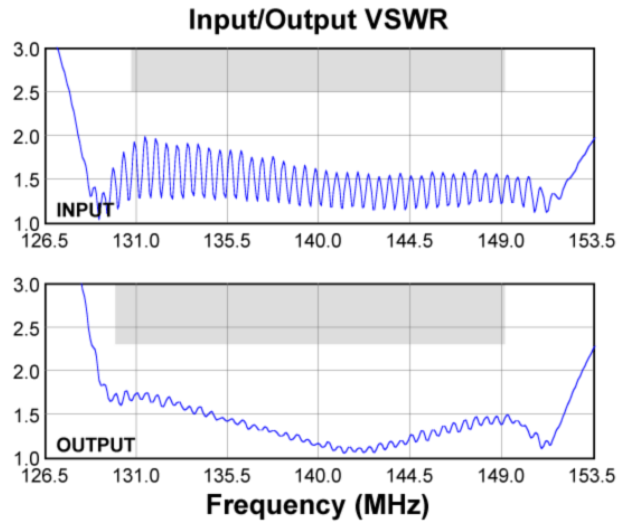
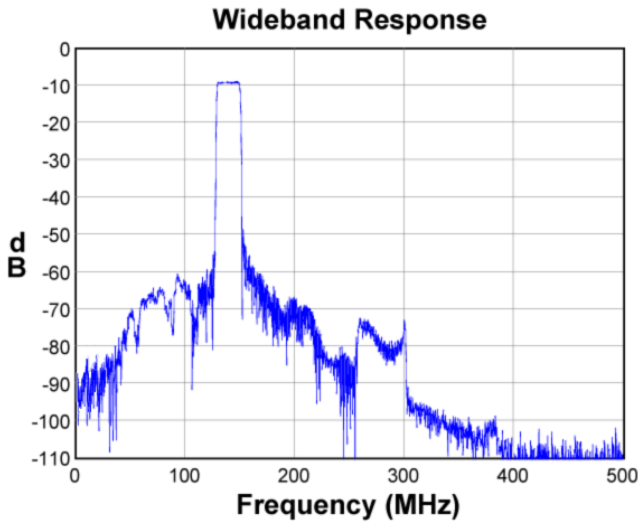
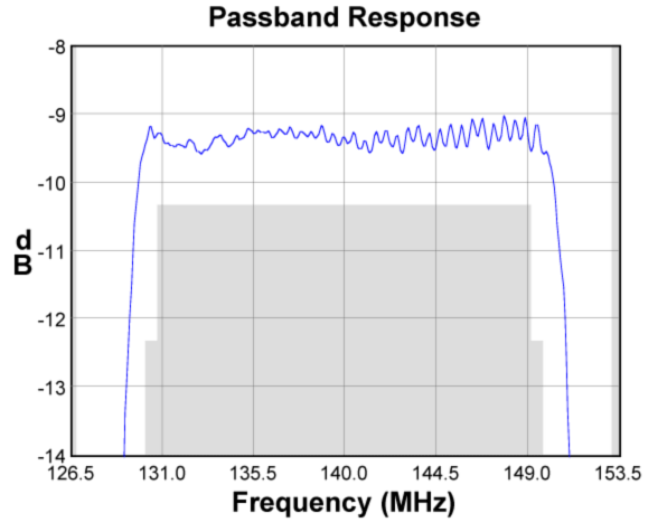
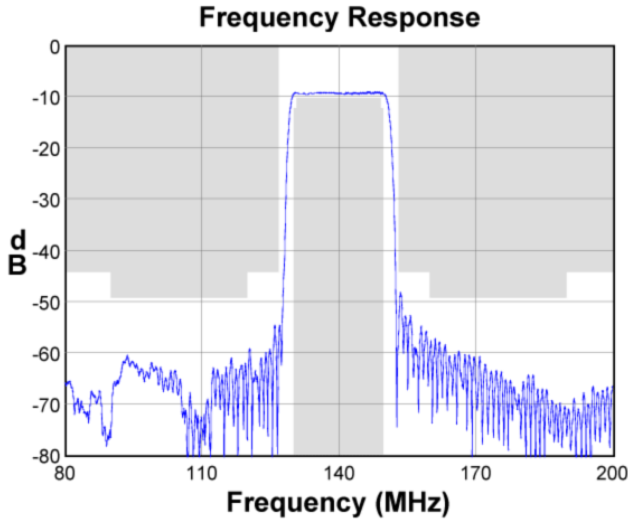
1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to manufacturing tolerances
4. All attenuation measurements are referenced from loss at  $f_o$
5. Describes the maximum peak to adjacent valley variation over the passband (not including roll-off).
6. This is the optimum impedance in order to achieve the performance shown

**Test Circuit:**

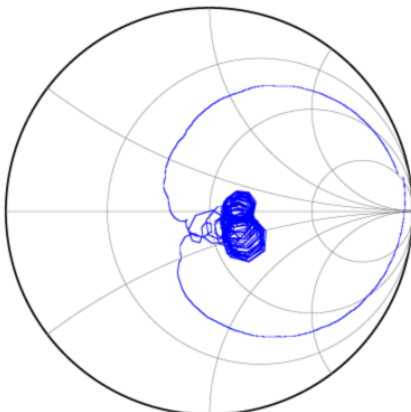
Actual Matching values may vary due to PCB layout and parasitics



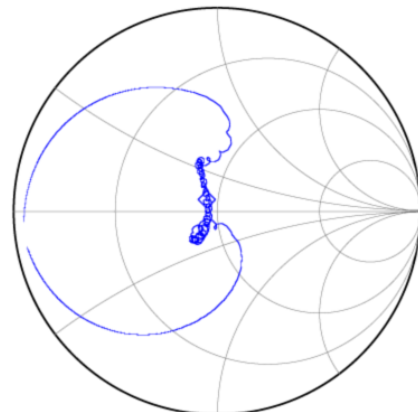
**Typical Performance (at +25°C)**



**Input Smith Chart**

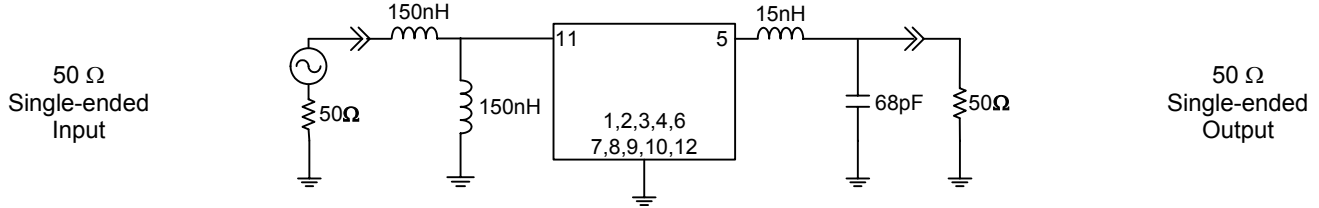


**Output Smith Chart**



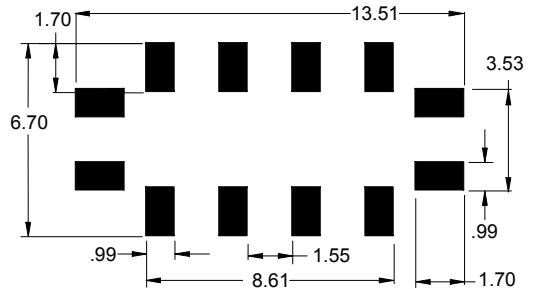
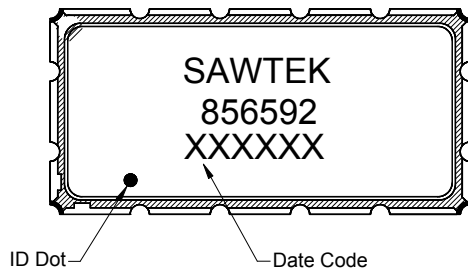
**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics



**Marking**

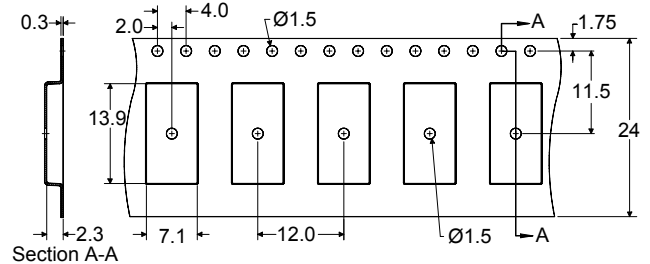
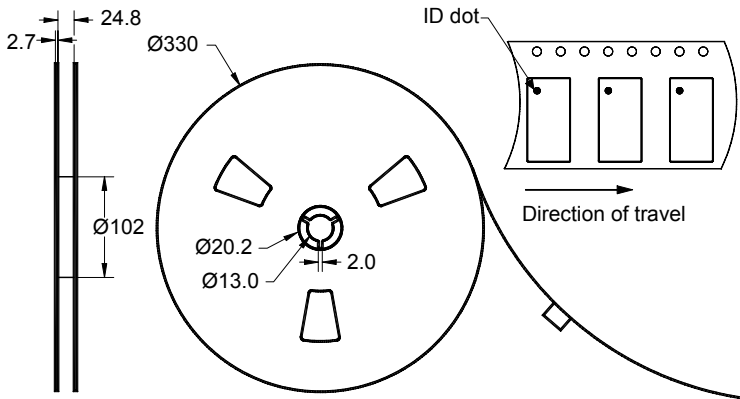
**PCB Footprint**



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: 2000 units/reel


**Data Sheet**

**Maximum Ratings**


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-30	+80	°C
Storage Temperature Range	T <sub>stg</sub>	-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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