
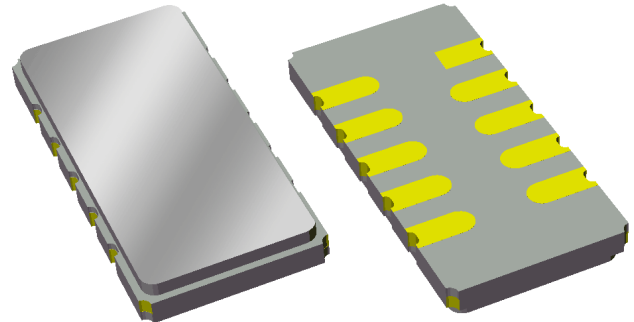


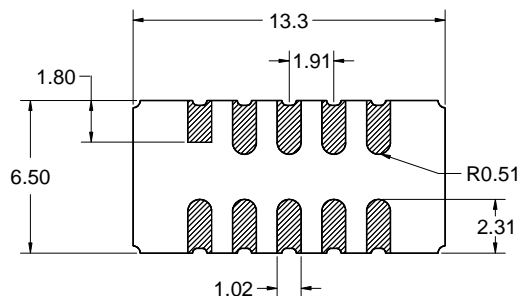
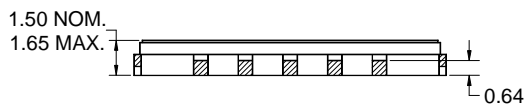
Features

- For broadband applications
- Typical 3 dB bandwidth of 6.2 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Replaces Sawtek P/N 851913 (BW 3dB=6.0 MHz)
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb-free** 



Package

Surface Mount 13.30 x 6.50 x 1.50 mm
SMP-53C

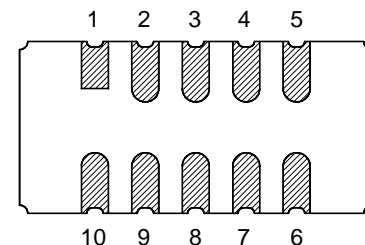


Dimensions shown are nominal in millimeters
All tolerances are ± 0.15 mm except overall
length and width ± 0.10 mm

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

Pin Configuration

Bottom View



Single-ended Configuration

Pin No.	Description
10	RF input
5	RF output
1,6	Ground
2,3,4	Case ground
7,8,9	Case ground

Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ 0 to +70 °C

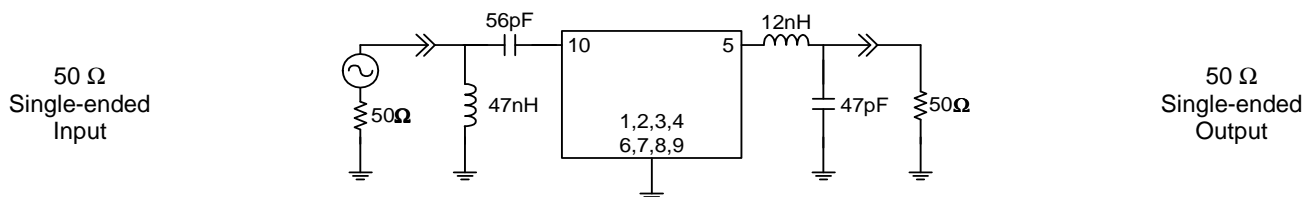
Parameter ⁽³⁾	Minimum	Typical ⁽⁴⁾	Maximum	Unit
Center Frequency	-	140	-	MHz
Minimum Insertion Loss	-	23	24.5	dB
Lower 1 dB Bandedge ⁽⁵⁾	-	137.1	137.28	MHz
Upper 1 dB Bandedge ⁽⁵⁾	142.72	142.9	-	MHz
Lower 3 dB Band Edge ⁽⁵⁾	-	136.9	137	MHz
Upper 3 dB Band Edge ⁽⁵⁾	143	143.1	-	MHz
Lower 40 dB Band Edge ⁽⁵⁾	135.83	136	-	MHz
Upper 40 dB Band Edge ⁽⁵⁾	-	144	144.17	MHz
Amplitude Variation 137.28 -142.72 MHz	-	0.5	0.9	dB
Phase Linearity 137.28 -142.72 MHz	-	2.0	3.0	deg
Group Delay Variation 137.28 -142.72 MHz	-	45	70	ns p-p
Absolute Delay	-	1.6	-	μsec
Relative Attenuation ⁽⁵⁾ 15 -135 MHz	50	60	-	dB
145 - 350 MHz	50	60	-	dB
Substrate Material	-	LiTaO ₃	-	-
Temperature Coefficient of Frequency	-	-23	-	ppm/°C
Source Impedance (single-ended) ⁽⁶⁾	-	50	-	Ω
Load Impedance (single-ended) ⁽⁶⁾	-	50	-	Ω

Notes:

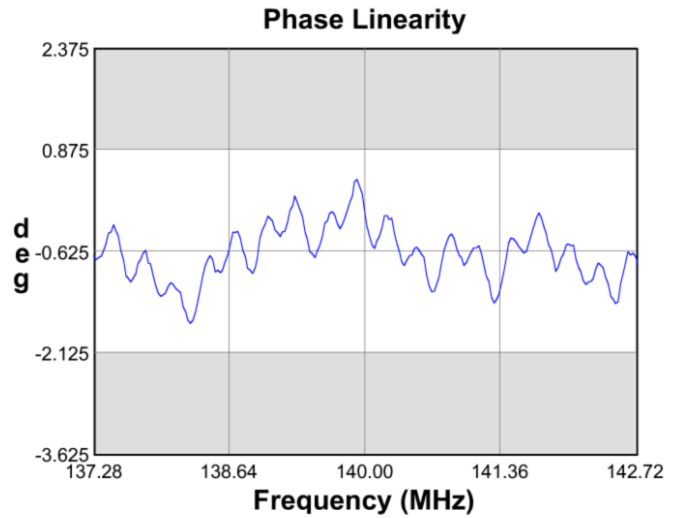
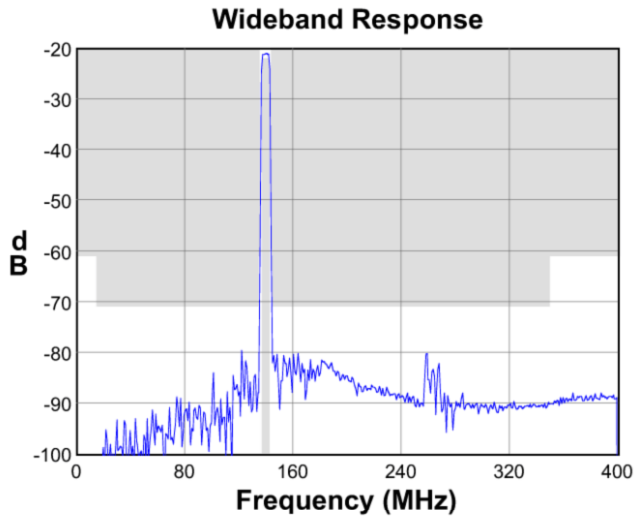
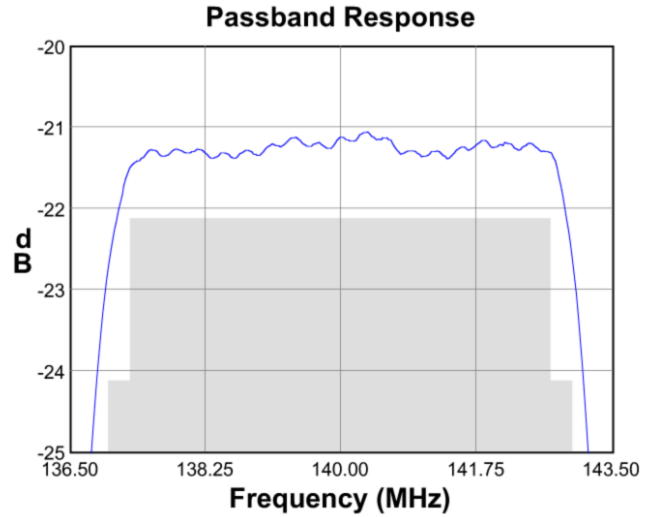
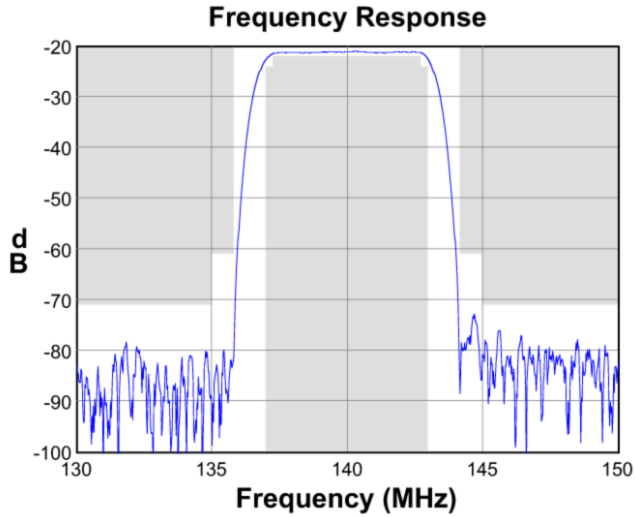
1. All specifications are based on the TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to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

Test Circuit:

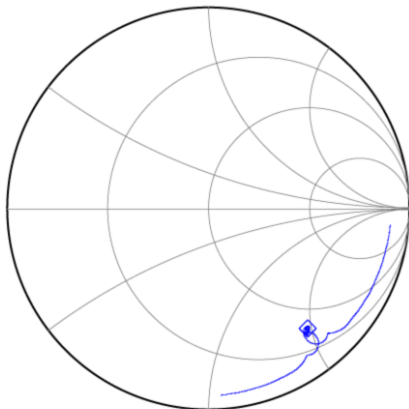
Actual matching values may vary due to PCB layout and parasitics



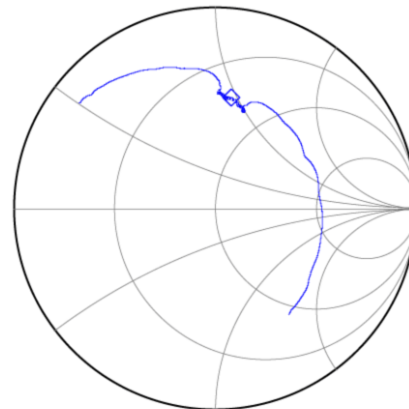
Typical Performance (at room temperature)



Input Smith Chart

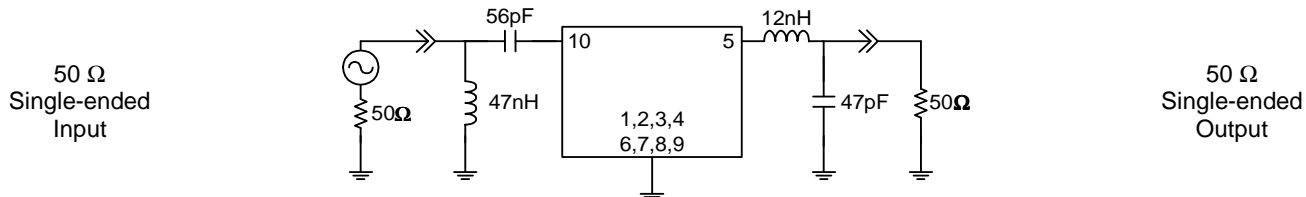


Output Smith Chart

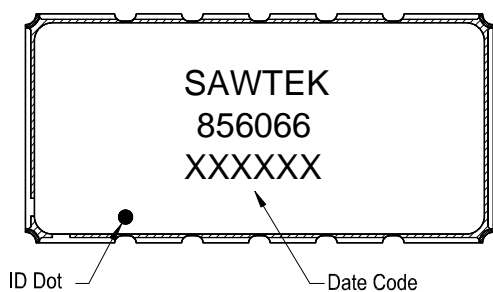


Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

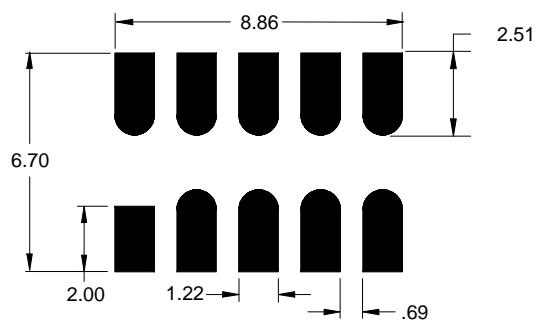


Marking



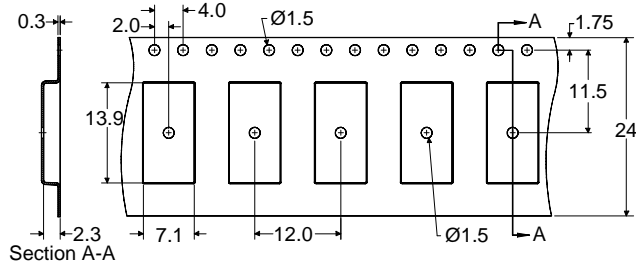
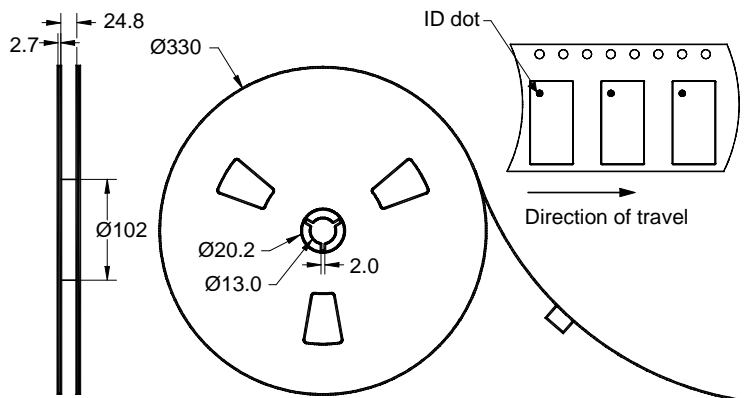
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

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: 2000 units/reel

Maximum Ratings


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	0	+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 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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