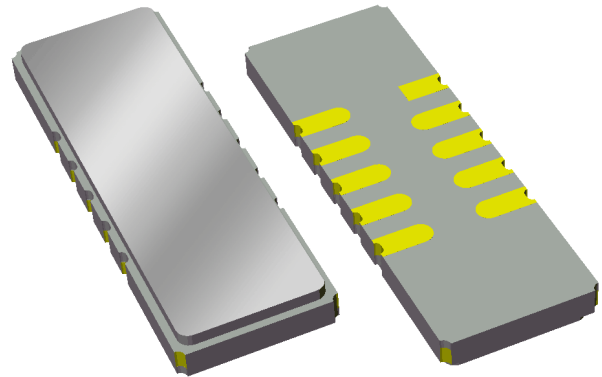


854652

70 MHz SAW Filter

Applications

- General Purpose
- For IF applications



Product Features

- Typical 3 dB bandwidth of 1.1 MHz
- Low loss
- High Attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Dimensions: 19.00 x 6.50 x 1.75mm
- Hermetically sealed
- **RoHS** compliant, **Pb**-free

General Description

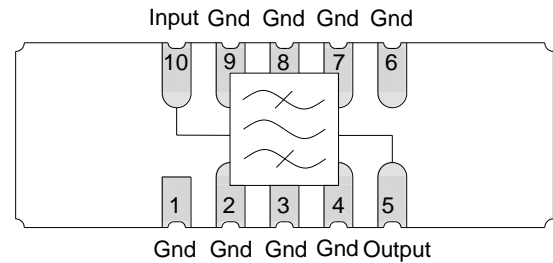
The 854652 is a high-performance IF SAW filter with a center frequency of 70 MHz and a 3 dB bandwidth of 1.1 MHz.

It features low loss with excellent attenuation, and is designed to be used with a single ended input and output.

This device is RoHS compliant and Pb-free.

Functional Block Diagram

Top view



Pin Configuration

Pin #	SE	Description
10		Input
5		Output
1,6		Ground
2,3,4,7,8,9		Case ground

Ordering Information

Part No.	Description
854652	packaged part
854652-EVB	evaluation board

Standard T/R size = 2000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: ⁽²⁾ +25 °C

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		69.92	70	70.08	MHz
Insertion Loss	at 70 MHz	-	7.3	8	dB
1.0 dB Bandwidth ⁽⁵⁾		0.7	0.8	-	MHz
3.0 dB Bandwidth ⁽⁵⁾		1.0	1.1	-	MHz
40.0 dB Bandwidth ⁽⁵⁾		-	2.8	3.0	MHz
Passband Ripple ⁽⁶⁾ (60% of 3 dB Bandwidth)		-	0.7	1.0	dB p-p
Phase Linearity		-	9.0	11.95	deg p-p
Group Delay Variation (60% of 3 dB Bandwidth)		-	375	500	ns p-p
Absolute Group Delay		-	2.1	-	μs
Temperature Coefficient		-	-23	-	ppm/°C
Source Impedance (single-ended) ⁽⁷⁾	-	-	50	-	Ω
Load Impedance (single-ended) ⁽⁷⁾	-	-	50	-	Ω

Notes:

- All specifications are based on the TriQuint schematic for the main reference design shown on page 3
- 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
- Typical values are based on average measurements at room temperature
- Relative to insertion loss at center frequency
- Passband Ripple is defined as the worst case difference between a peak and an adjacent valley within defined frequency points
- This is the optimum impedance in order to achieve the performance shown

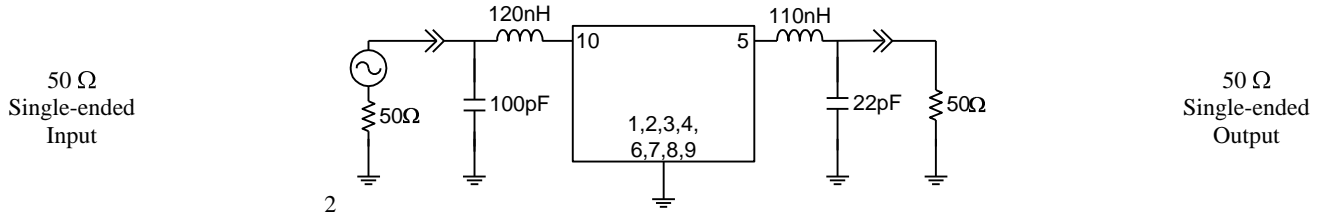
Absolute Maximum Ratings

Parameter	Rating
Operating Temperature	+25°C
Storage Temperature	-40 to +85 °C
Input Power (at +55°C for 100 hours max)	+10dBm

Operation of this device outside the parameter ranges given above may cause permanent damage.

Reference Design – 50Ω SE Input, 50Ω SE Output

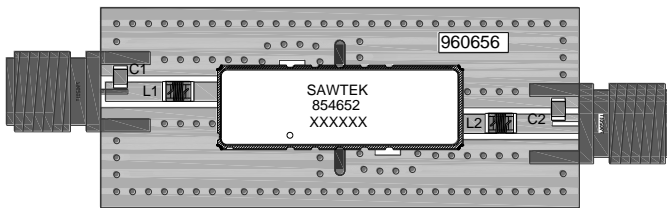
Schematic



Notes:

- Actual matching values may vary due to PCB layout and parasitics

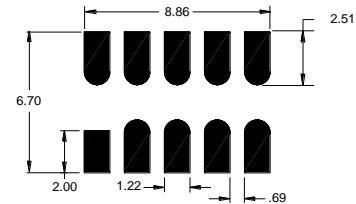
PC Board



Notes:

- Top, middle & bottom layers: 1 oz copper
- Substrates: FR4 dielectric, .031" thick
- Finish plating: Nickel: 3-8μm thick, Gold: .03-.2μm thick
- Hole plating: Copper min .0008μm thick

Mounting Configuration



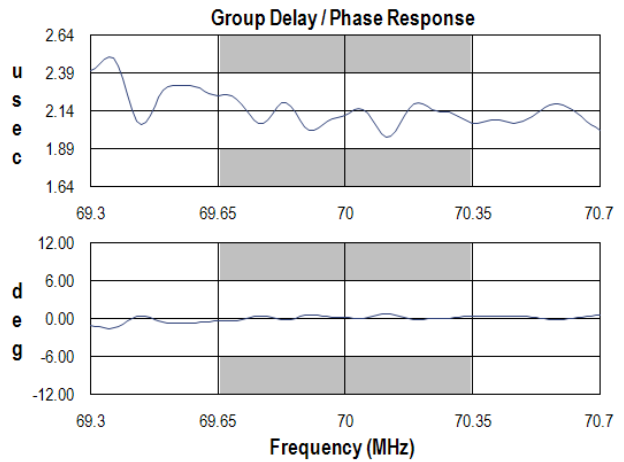
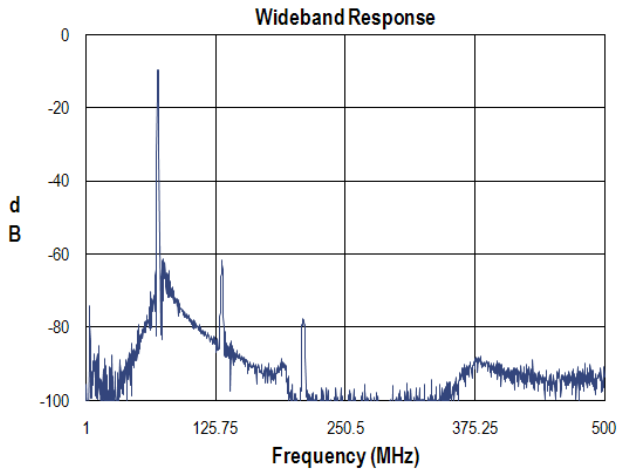
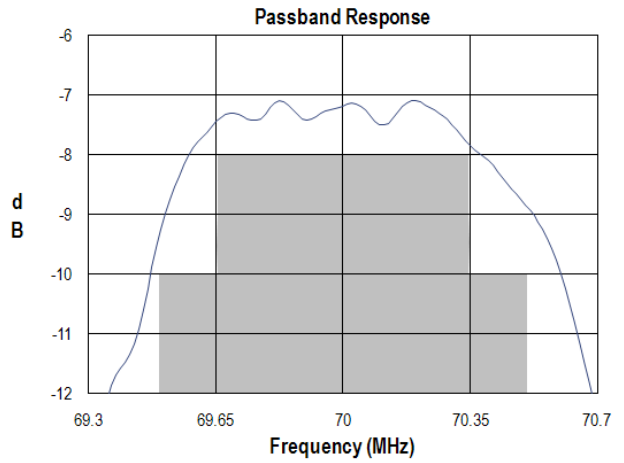
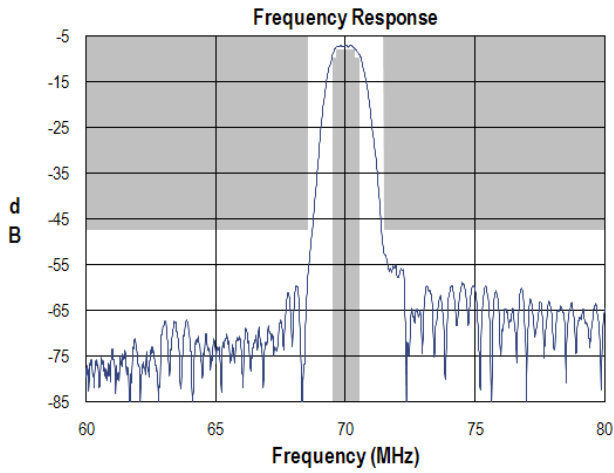
Notes:

- All dimensions are in millimeters.
- This footprint represents a recommendation only.

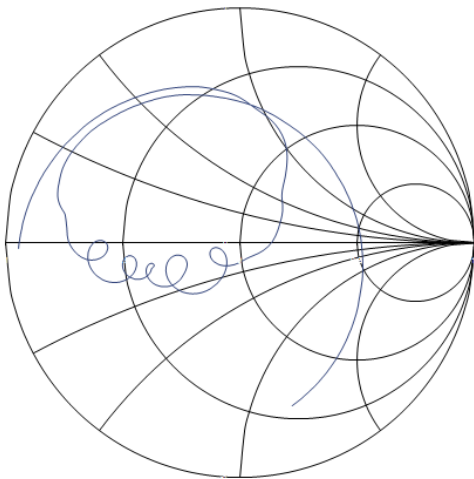
Bill of Material

Reference Desg.	Value	Description	Manufacturer	Part Number
L1	120nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-121XJLC
L2	110nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-111XJLC
C1	100pF	Coil Wire-wound, 0805, 5%	MuRata	GRM40COG101J50V
C2	22pF	Coil Wire-wound, 0805 5%	MuRata	GRM40COG220J50V
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960656

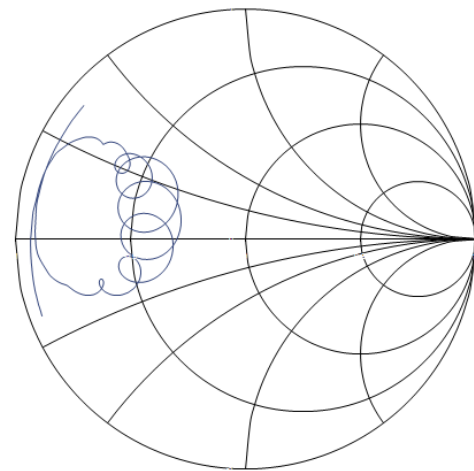
Typical Performance (at room temperature)



Input Smith Chart

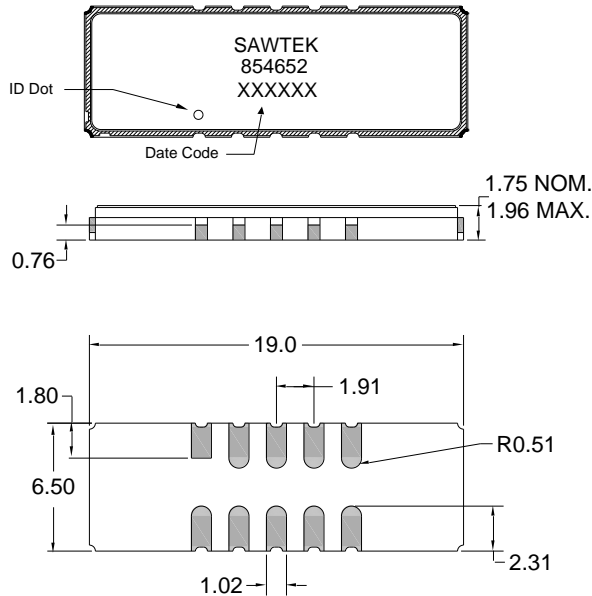


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



Package Style: SMP-75
 Dimensions: 19.00 x 6.50 x 1.75mm

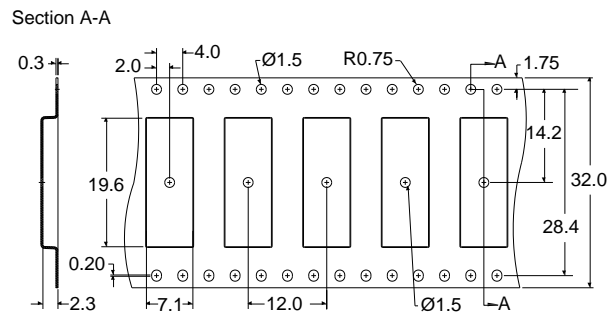
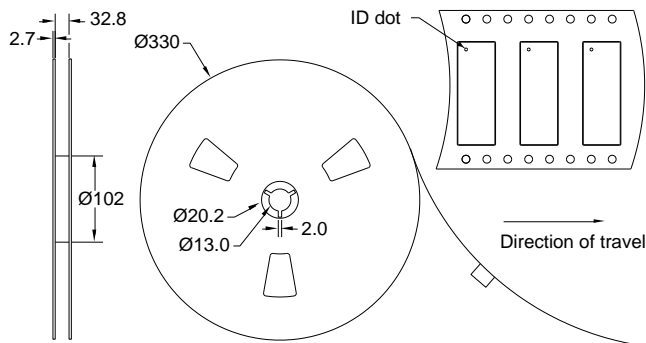
Body: Al_2O_3 ceramic
 Lid: Kovar, Ni plated
 Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

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

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

Tape and Reel Information

Standard T/R size = 2000 units/reel. All dimensions are in millimeters



Product Compliance Information

ESD Information



Caution! ESD-Sensitive Device

ESD Rating: 2

Value: Passes ≥ 2100 V min.
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: C

Value: Passes ≥ 600 V min.
Test: Machine Model (MM)
Standard: JEDEC Standard JESD22-A115

MSL Rating

Devices are Hermetic, therefore MSL is not applicable.

Solderability

Compatible with the latest version of J-STD-020, lead free solder, 260°C

Refer to [Soldering Profile](#) for recommended guidelines.

This part is compliant with EU 2002/95/EC RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment).

This product also has the following attributes:

- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free

Contact Information

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