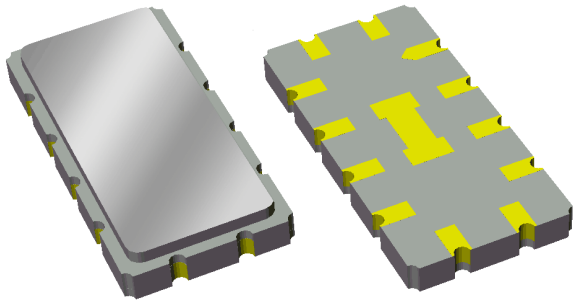
854669

70 MHz SAW Filter

Applications

- General Purpose
- For IF applications



Product Features

- Typical 3 dB bandwidth of 18.5 MHz
- Low loss
- High Attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Dimensions: 13.30 x 6.50 x 1.75mm
- Hermetic **RoHS** compliant, **Pb**-free

General Description

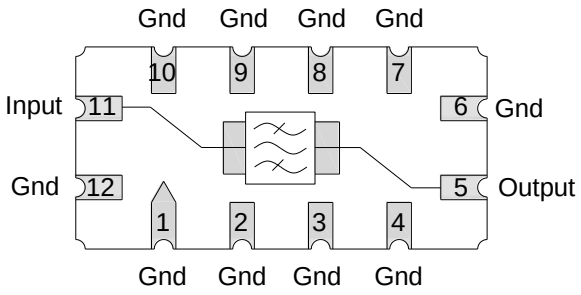
The 854669 is a high-performance IF SAW filter with a center frequency of 70 MHz and a 3.0 dB bandwidth of 18.5 MHz.

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

The device is RoHS compliant and Pb-free.

Functional Block Diagram

Top view



Pin Configuration Single-ended

Pin #	Description
11	Input
5	Output
6,12	Ground
1,2,3,4	Case Ground
7,8,9,10	Case Ground

Ordering Information

Part No.	Description
854669	packaged part
854669-EVB	evaluation board

Standard T/R size = 2000 units/reel.

Specifications

Electrical Specifications (1)

Specified Temperature Range: (2) +25 ºC

Parameter	Conditions	Min	Typical (3)	Max	Units
Center Frequency		69.8	70	70.2	MHz
Insertion Loss	At 70 MHz	-	13.5	14.5	dB
1.0 dB Bandwidth (4)		17.25	17.55	-	MHz
3.0 dB Bandwidth (4)		18.0	18.5	-	MHz
40.0 dB Bandwidth (4)		-	23.4	24.1	MHz
Passband Ripple	61.9 – 78.1 MHz	-	0.7	1.0	dB p-p
Phase Linearity	61.9 – 78.1 MHz	-	9.25	12	° p-p
Group Delay Variation	61.9 – 78.1 MHz	-	70	100	ns p-p
Absolute Group delay	61.9 – 78.1 MHz	-	1.07	-	µs
Temperature Coefficient	-	-	-94	-	ppm/ ºC
Source Impedance (single-ended) (5)	-	-	50	-	Ω
Load Impedance (single-ended) (5)	-	-	50	-	Ω

Notes:
1. All specifications are based on the TriQuint schematic for the main reference design shown on page 3
2. All specifications are tested at room temperature only
3. Typical values are based on average measurements at room temperature
4. Relative to insertion loss at center frequency
5. This is the optimum impedance in order to achieve the performance shown

Absolute Maximum Ratings

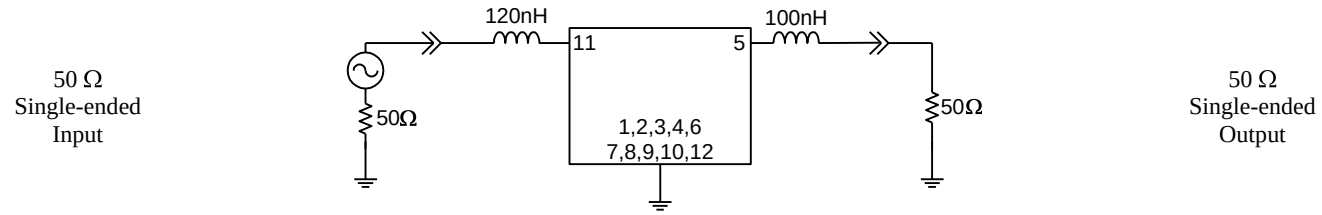
Parameter	Rating
Operating Temperature (6)	-40 to +85 °C
Storage Temperature	-40 to +85 °C
Input Power (at +55°C for 10K hours max)	+20 dBm

6. Device may operate over this range with degraded Electrical Specifications

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

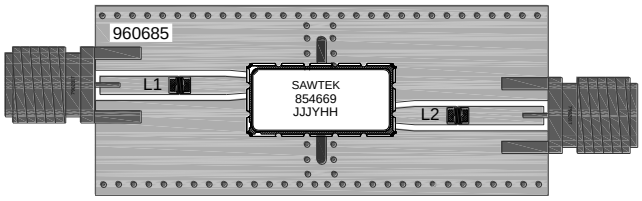
Reference Design – 50Ω SE Input, 50Ω SE Output

Schematic



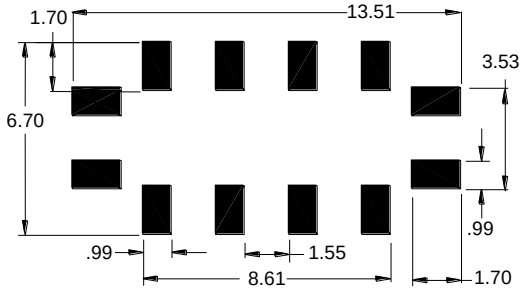
Notes:
1. Actual matching values may vary due to PCB layout and parasitics

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

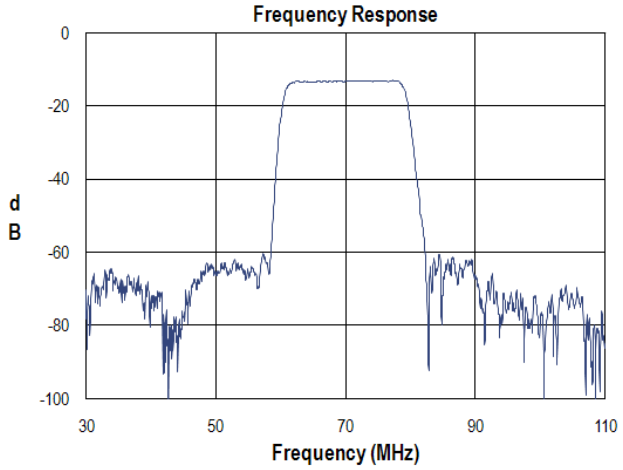


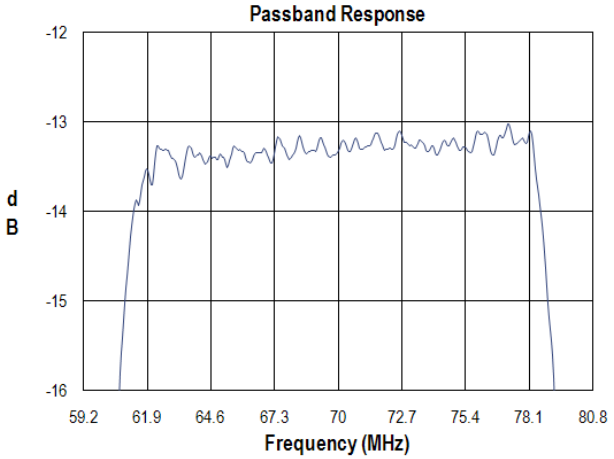
Notes:
1. All dimensions are in millimeters.
2. This footprint represents a recommendation only.

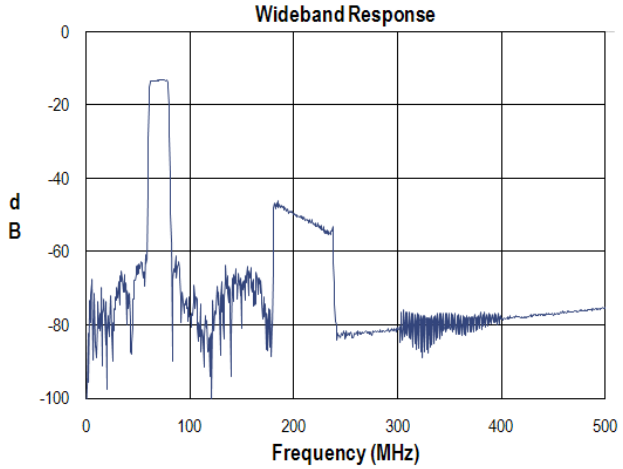
Bill of Material

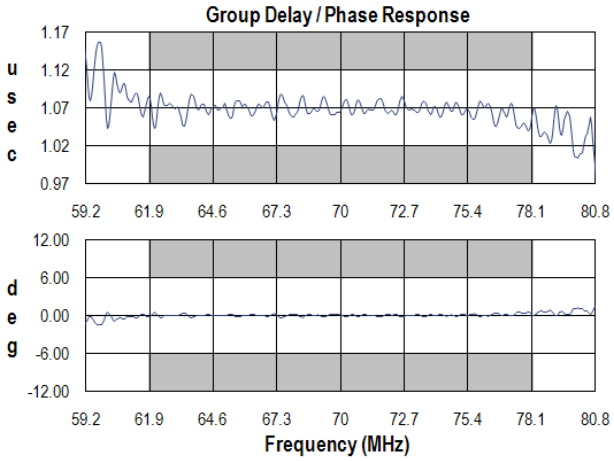
Reference Desg.	Value	Description	Manufacturer	Part Number
L1	120nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-121XJLC
L2	100nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-101XJLC
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960685

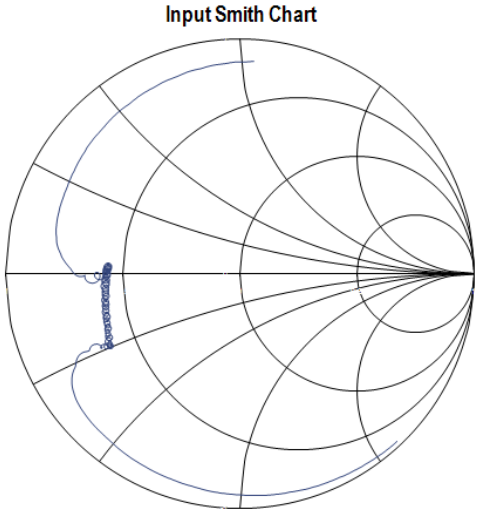
Typical Performance (at room temperature)

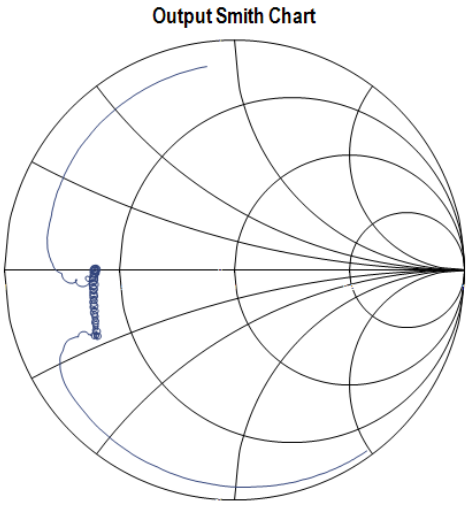






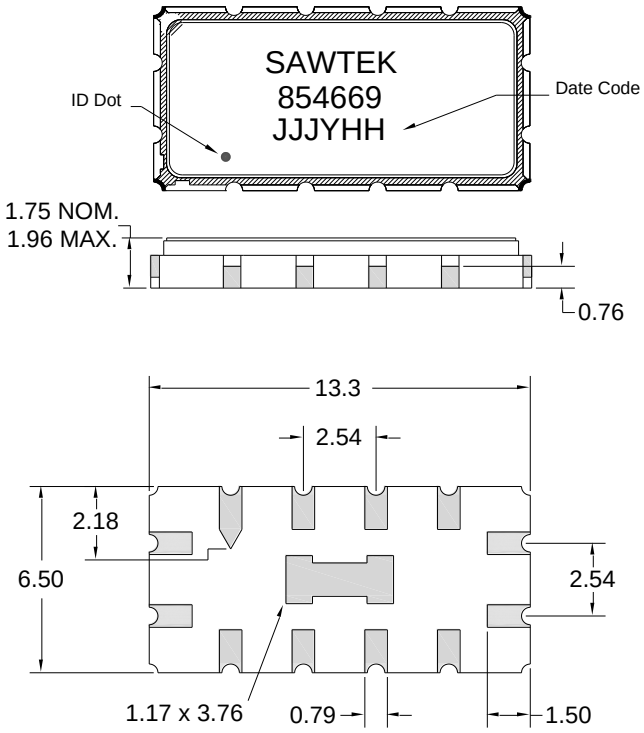






Mechanical Information

Package Information, Dimensions and Marking



Package Style: SMP-53A
Dimensions: 13.30 x 6.50 x 1.75mm

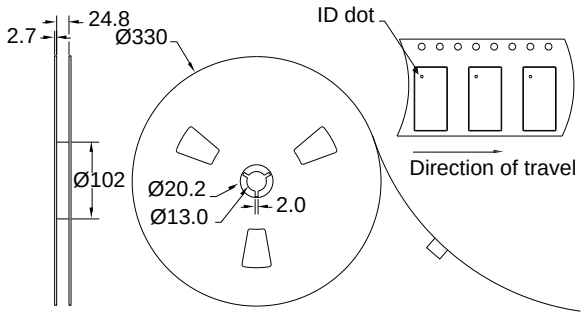
Body: Al_2O_3 ceramic
Lid: *Kovar, Ni* plated
Terminations: *Au* plating 0.5 - 1.0µm, over a 2-6µm *Ni* plating

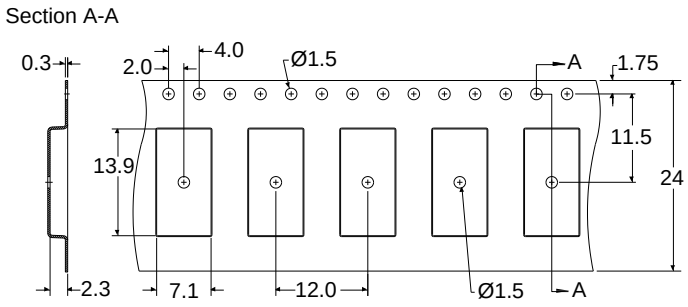
All dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width ±0.10mm

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

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 ≥ 3000 V min.
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: C
Value: Passes ≥ 1000 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 ($C_{15}H_{12}Br_40_2$) Free
- PFOS Free
- SVHC Free

Contact Information

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