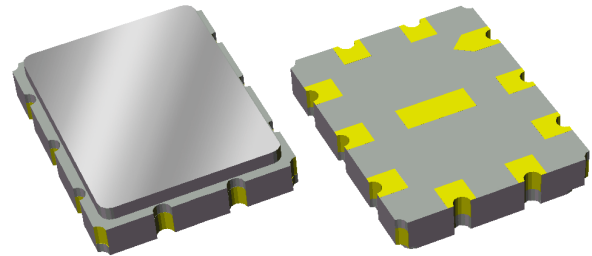


855595

320 MHz SAW Filter

Applications

- General Purpose
- For IF applications



Product Features

- Typical 3 dB bandwidth of 22 MHz
- Low loss
- High Attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Dimensions: 9.0 x 7.0 x 1.5mm
- Hermetic **RoHS** compliant, **Pb-free**

General Description

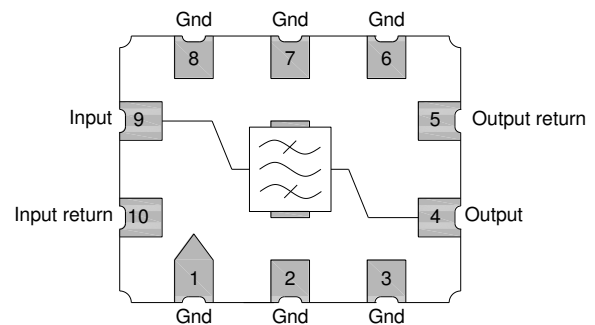
The 855595 is a high-performance IF SAW filter with a center frequency of 320 MHz and a 3.0 dB bandwidth of 22 MHz.

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

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

Ordering Information

Part No.	Description
855595	packaged part
855595-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		-	320	-	MHz
Minimum Insertion Loss	At Center Frequency	-	19.3	24	dB
Lower 1dB Band Edge ⁽⁵⁾		-	308.1	308.8	MHz
Upper 1dB Band Edge ⁽⁵⁾		332.2	332.4	-	MHz
Lower 45dB Band Edge ⁽⁵⁾		301.08	302.4	-	MHz
Upper 45dB Band Edge ⁽⁵⁾		-	337.7	338.5	MHz
Amplitude Variation	309 – 331 MHz	-	0.67	1.0	dB p-p
Group Delay Variation	309 – 331 MHz	-	32	60	ns p-p
Group Delay	309 – 331 MHz	-	0.56	-	µs
Relative Attenuation ⁽⁵⁾	235 – 275 MHz	40	53	-	dB
	275 – 301 MHz	45	55	-	dB
	339 – 395 MHz	45	51	-	dB
	395 – 435 MHz	40	49	-	dB
	435 – 570 MHz	30	49	-	dB
Source Impedance (single-ended) ⁽⁶⁾		-	50	-	Ω
Load Impedance (single-ended) ⁽⁶⁾		-	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 loss at center frequency
- This is the optimum impedance in order to achieve the performance shown

Absolute Maximum Ratings

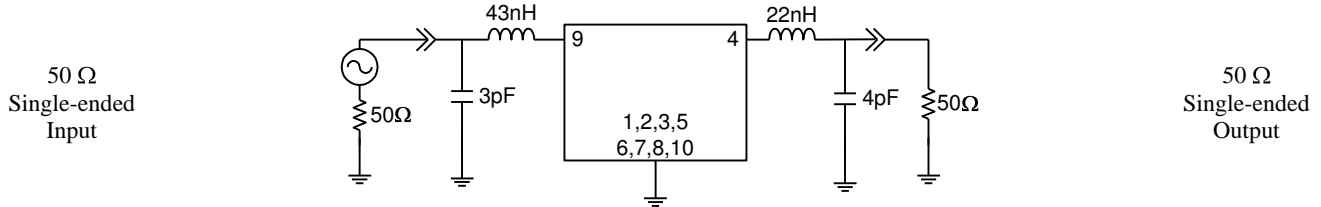
Parameter	Rating
Operating Temperature ⁽⁷⁾	-40 to +85 °C
Storage Temperature	-40 to +85 °C

- 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

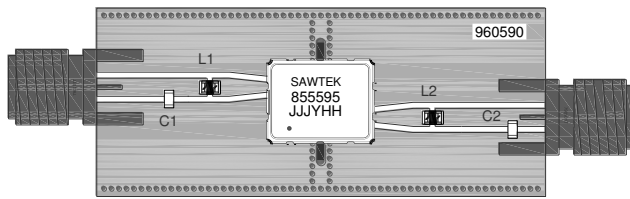
Schematic



Notes:

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

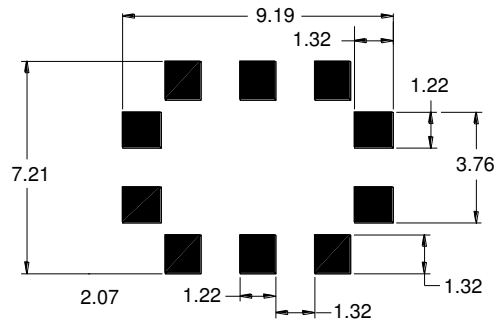
PC Board



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



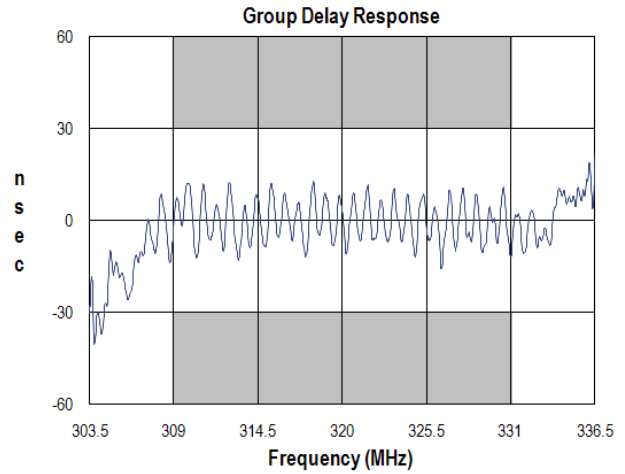
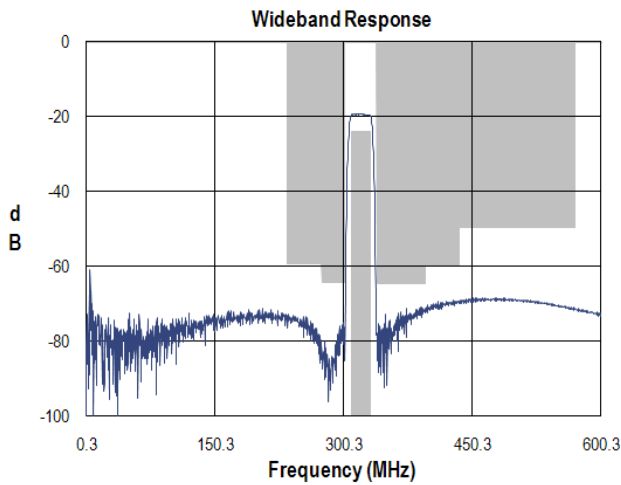
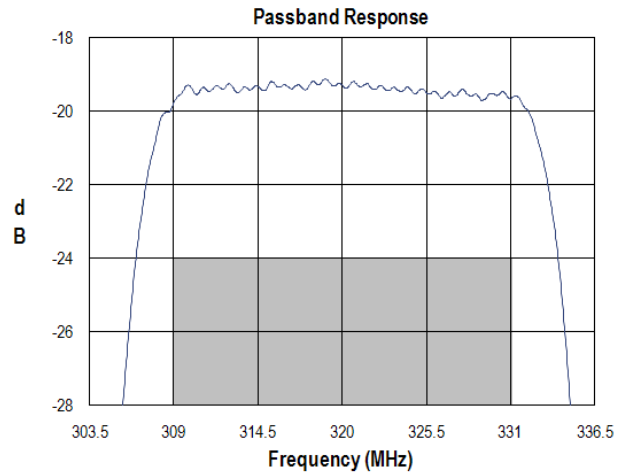
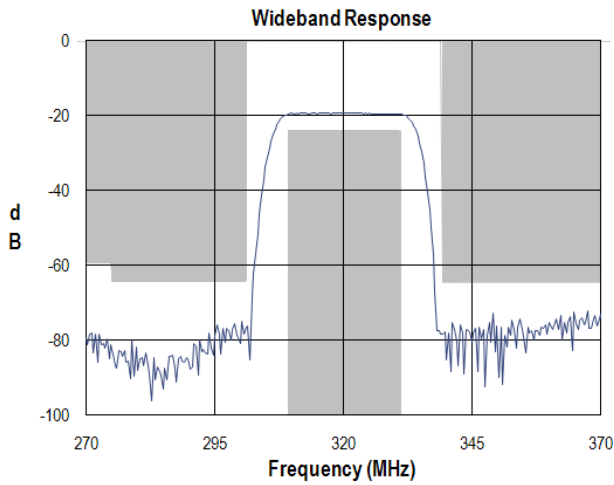
Notes:

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

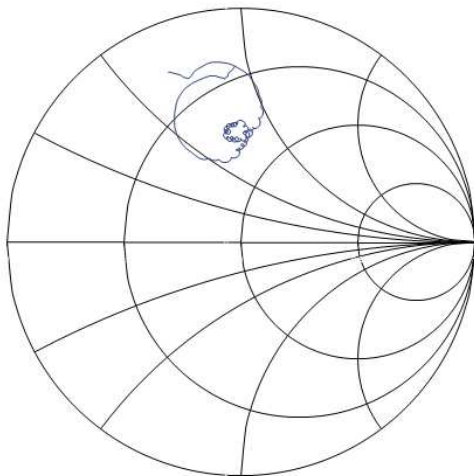
Bill of Material

Reference Desg.	Value	Description	Manufacturer	Part Number
L1	43nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-430XJLC
L2	22nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-220XJLC
C1	3pF	Chip Capacitor, 0805, 5%	MuRata	GRM40C0G030C050BL
C2	4pF	Chip Capacitor, 0805, 5%	MuRata	GRM40C0G040C050BL
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960590

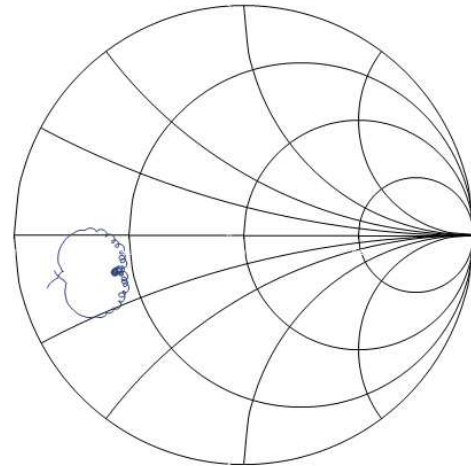
Typical Performance (at room temperature)



Input Smith Chart

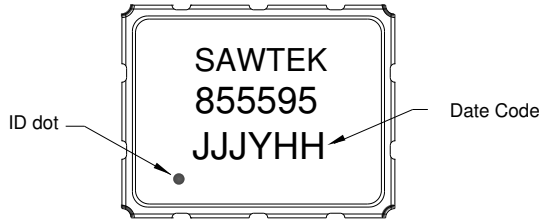


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking

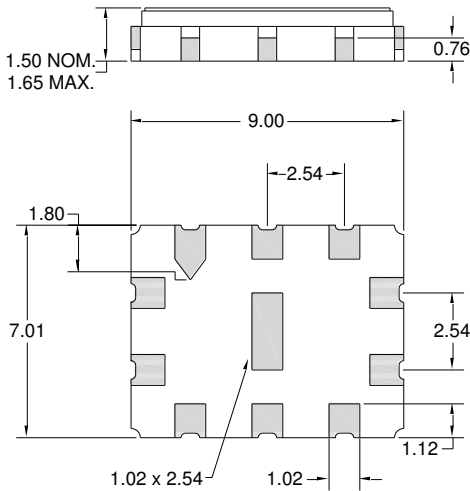


Package Style: SMP-35B
 Dimensions: 9.00 x 7.01 x 1.50 mm

Body: Al₂O₃ ceramic
 Lid: Kovar, Ni plated
 Terminations: Au plating 0.5 - 1.0µm, over a 2-6µm Ni plating

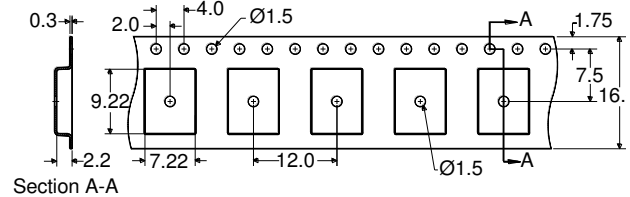
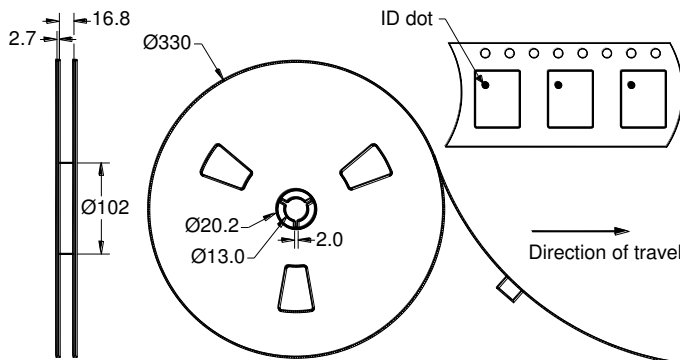
All dimensions shown are nominal in millimeters
 All tolerances are ±0.15mm except overall length and width ±0.10mm

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: 0

Value: Passes ≥ 100 V min.
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: A

Value: Passes ≥ 100 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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