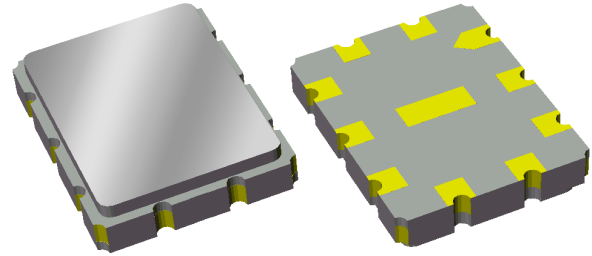


855596

320 MHz SAW Filter

Applications

- General Purpose
- For IF applications



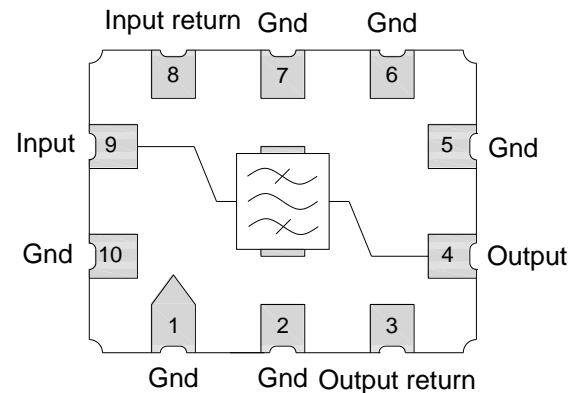
Product Features

- Typical 1dB 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**



Functional Block Diagram

Top view



General Description

The 855596 is a high-performance IF SAW filter with a center frequency of 320 MHz and a 1 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.

Pin Configuration

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

Ordering Information

Part No.	Description
855596	packaged part
855596-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	-	19.4	24	dB
Lower 1dB Band Edge ⁽⁵⁾		-	307.9	308.8	MHz
Upper 1dB Band Edge ⁽⁵⁾		332.2	332.5	-	MHz
Lower 45dB Band Edge ⁽⁵⁾		301.3	302.3	-	MHz
Upper 45dB Band Edge ⁽⁵⁾		-	337.4	338.5	MHz
Amplitude Variation	309 – 331 MHz	-	0.47	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	41	49	-	dB
	275 – 301 MHz	45	49	-	dB
	339 – 395 MHz	45	48	-	dB
	395 – 435 MHz	41	54	-	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

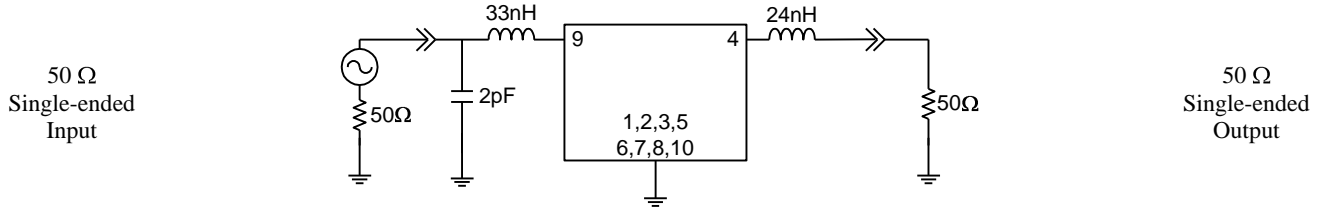
Parameter	Rating
Operating Temperature ⁽⁷⁾	-40 to +85 °C
Storage Temperature	-40 to +85 °C

- 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

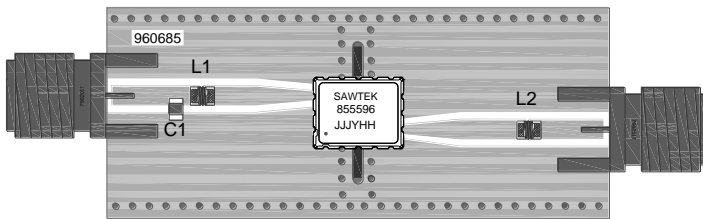
Schematic



Notes:

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

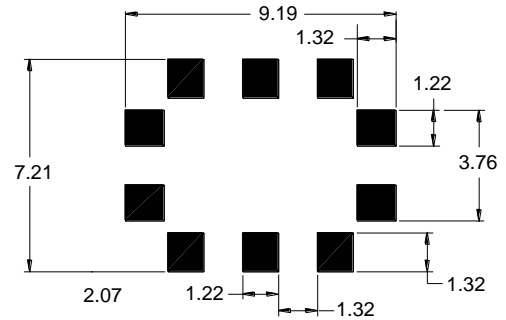
PC Board



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



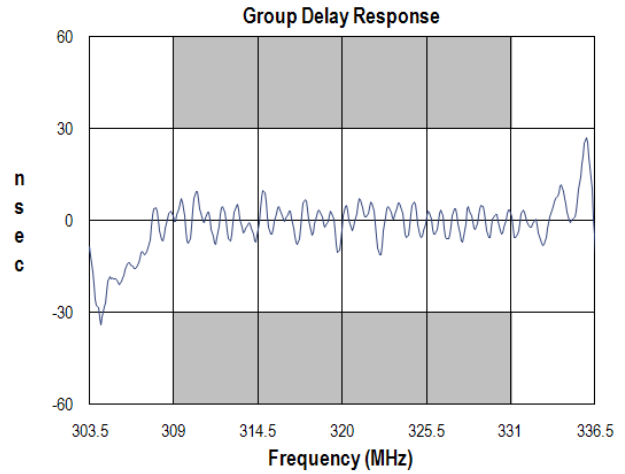
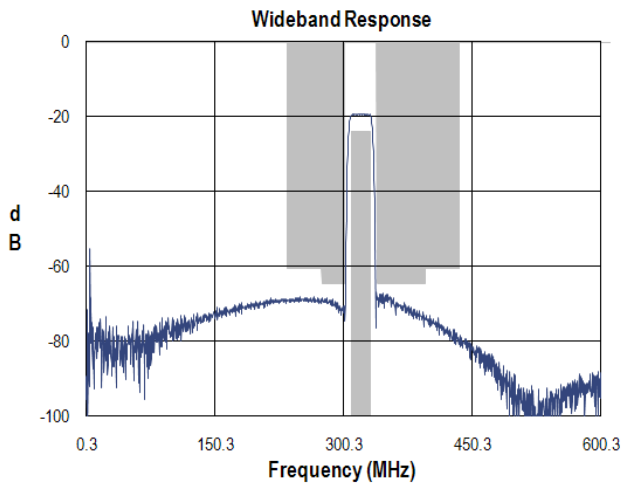
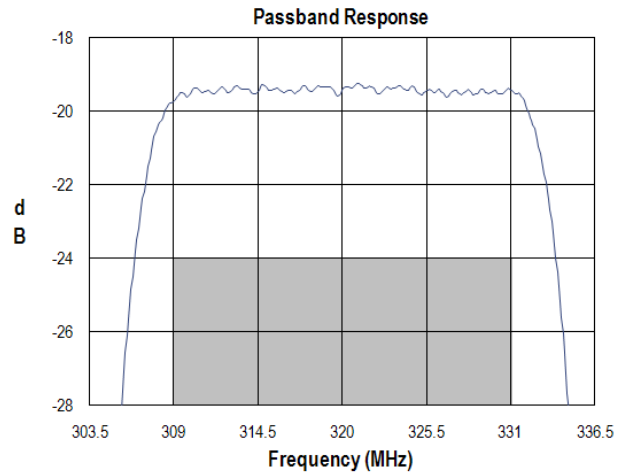
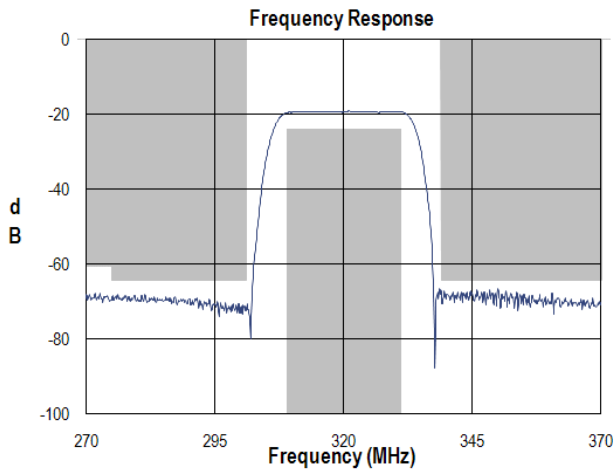
Notes:

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

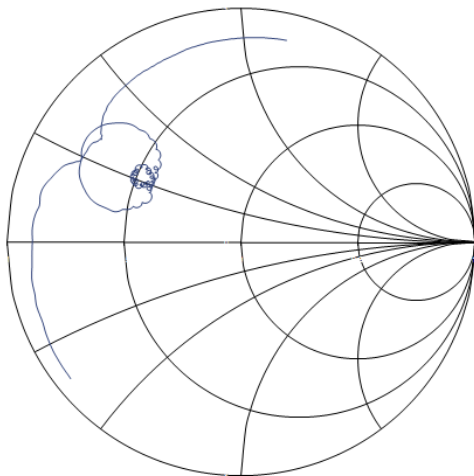
Bill of Material

Reference Desg.	Value	Description	Manufacturer	Part Number
L1	33 nH	Coil Wire-wound,0805, 5%	Coilcraft	0805CS-330XJLC
L2	24 nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-240XJLC
C1	2.0 pF	Chip Capacitor,0805, 5%	MuRata	GRM2166T1H2R0CD01
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960685

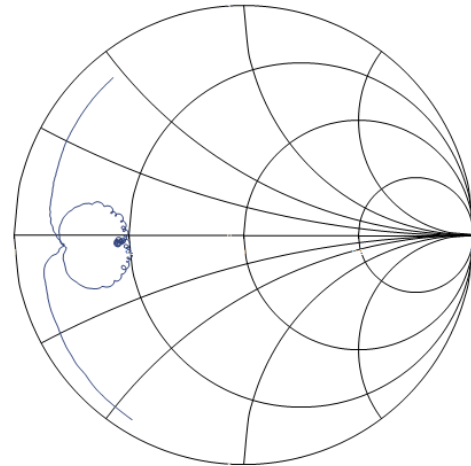
Typical Performance (at room temperature)



Input Smith Chart



Output Smith Chart

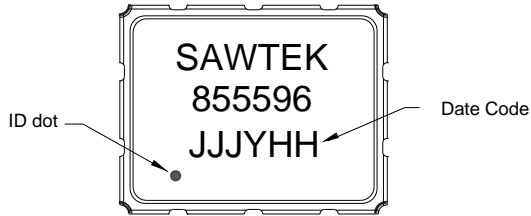


855596

320 MHz SAW Filter

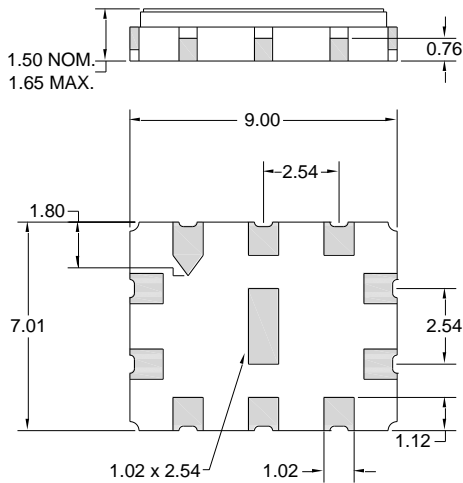
Mechanical Information

Package Information, Dimensions and Marking



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

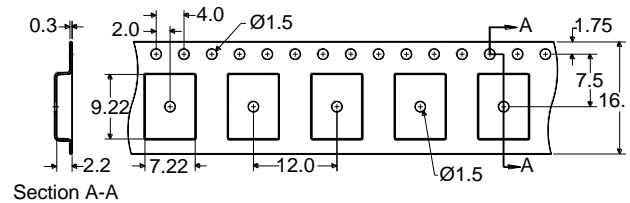
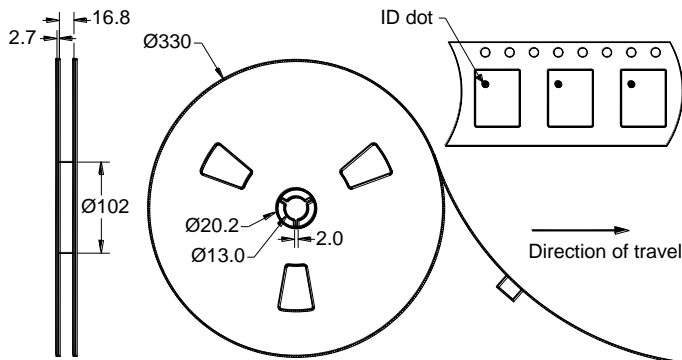


All dimensions shown are nominal in millimeters
All tolerances are ± 0.15 mm except overall length and width ± 0.10 mm

The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and 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 ≥ 150 V min.
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: A

Value: Passes ≥ 150 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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