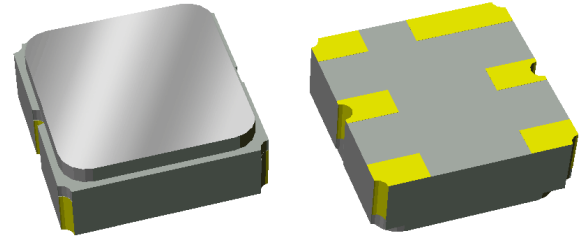


857019

835 MHz SAW Filter

Applications

- General purpose wireless
- Wireless infrastructure
- Base Stations
- 3G, 4G, Multi-standard
- Repeaters



Product Features

- Usable bandwidth 30 MHz
- Low loss
- Excellent power handling
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- No impedance matching required for operation at 50Ω
- Small Size: 3.00 x 3.00 x 1.22 mm
- Hermetically sealed
- **RoHS** compliant, **Pb**-free

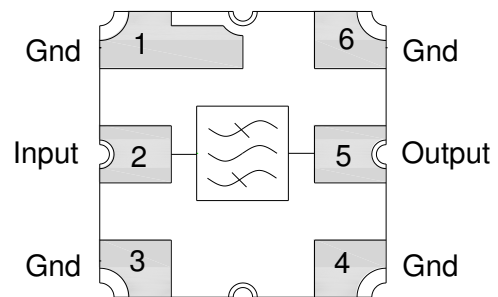
General Description

857019 is a general purpose Uplink filter for an extended band 5 (820-850MHz). This filter was specifically designed in a 3x3mm hermetic package for base station applications and is part of our wide portfolio of RF filters in the same package.

Low insertion loss, coupled with high attenuation and excellent power handling, makes this filter a natural choice for our customers' Uplink RF filtering needs.

Functional Block Diagram

Top view



Pin Configuration

Pin # SE	Description
2	Input
5	Output
1,3,4,6	Case Ground

Ordering Information

Part No.	Description
857019	packaged part
857019-EVB	evaluation board

Standard T/R size = 5000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: ⁽²⁾ -40 to +85 °C

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	835	-	MHz
Maximum Insertion Loss	820 – 850 MHz	-	2.1	3.0	dB
Amplitude Variation	820 – 850 MHz	-	0.8	1.25	dB p-p
Absolute Attenuation ⁽⁵⁾	At 763 MHz	50	60	-	dB
	865 – 869 MHz	10	19	-	dB
	869 – 895 MHz	20	24	-	dB
	At 947 MHz	50	63	-	dB
	1128 – 1158 MHz	20	47	-	dB
Input/output Return Loss	820 – 850 MHz	-	10.2	-	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 zero dB
- This is the optimum impedance in order to achieve the performance shown

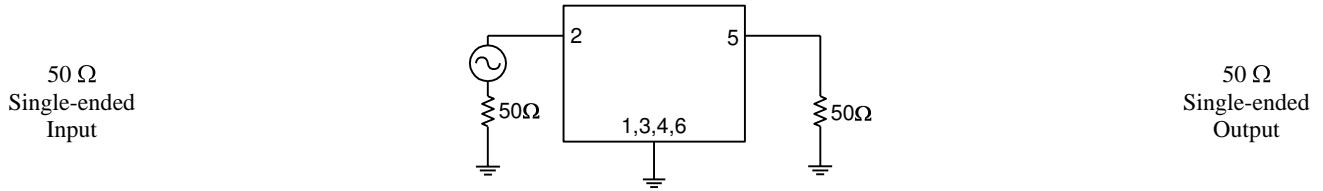
Absolute Maximum Ratings

Parameter	Rating
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +85 °C
Input Power ⁽⁷⁾	+20 dBm

- Input power is tested with an applied continuous wave RF signal for an expected lifetime of 10K hours at 85 °C
 Operation of this device outside the parameter ranges given above may cause permanent damage.

Reference Design 1 – 50Ω SE Input, 50Ω SE Output

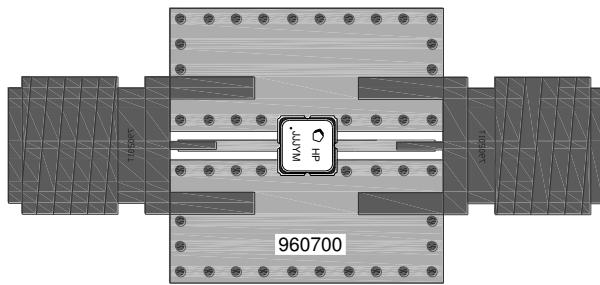
Schematic



Notes:

1. No impedance matching required
2. Actual matching values may vary due to PCB layout and parasitic

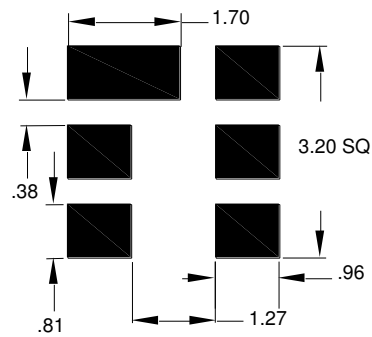
PC Board



Notes:

- Top, middle & bottom layers: 1/2 oz copper
- Substrates: FR4 dielectric .063” / Taconic TLY-5A .0075”
- Finish plating: Nickel: 3-8µm thick, Gold: .03-.2µm thick
- Hole plating: Copper min .0008µm

Mounting Configuration



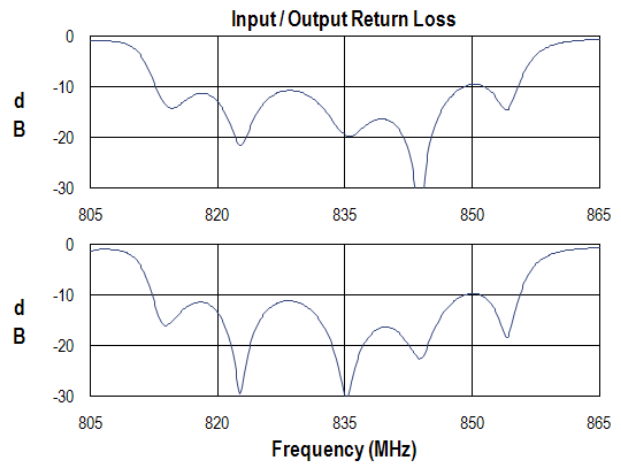
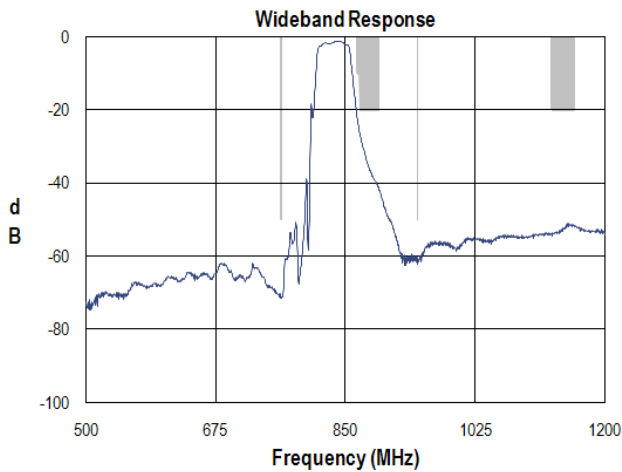
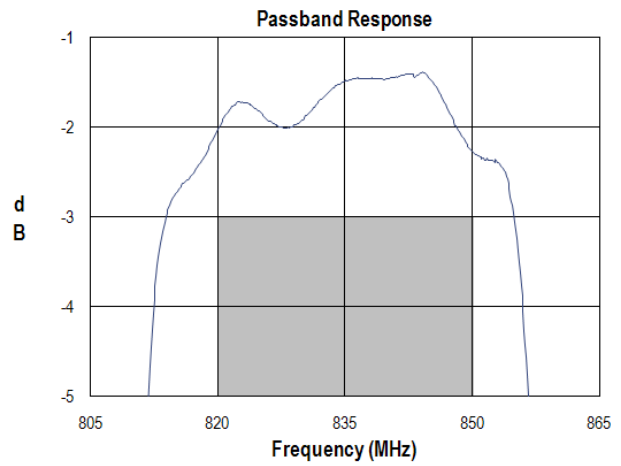
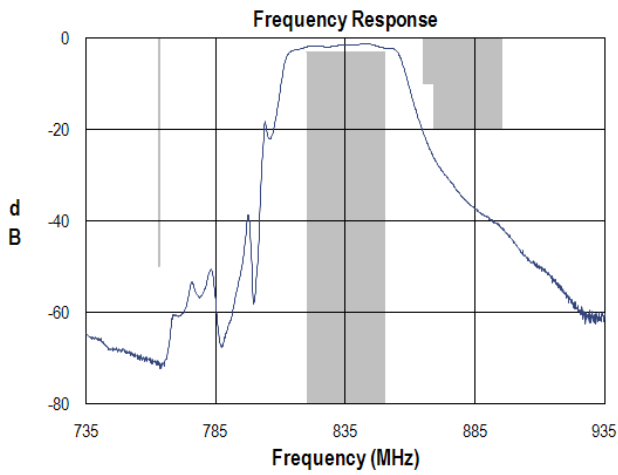
Notes:

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

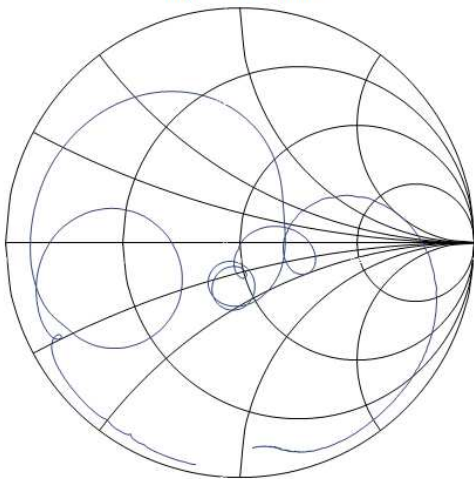
Bill of Material

Reference Desg.	Value	Description	Manufacturer	Part Number
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960700

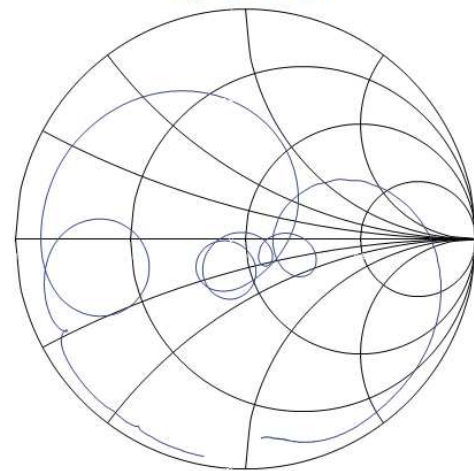
Typical Performance (at room temperature)



Input Smith Chart

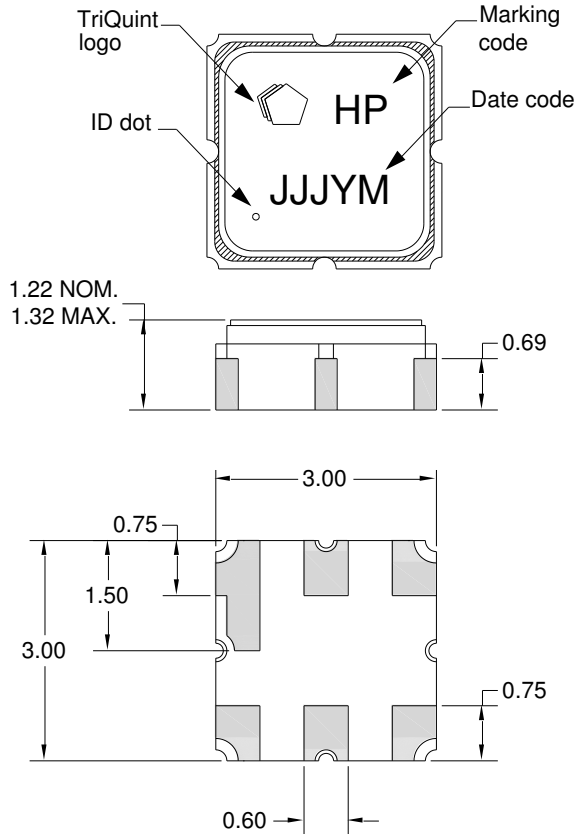


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



Package Style: SMP-12A
 Dimensions: 3.00 x 3.00 x 1.22 mm

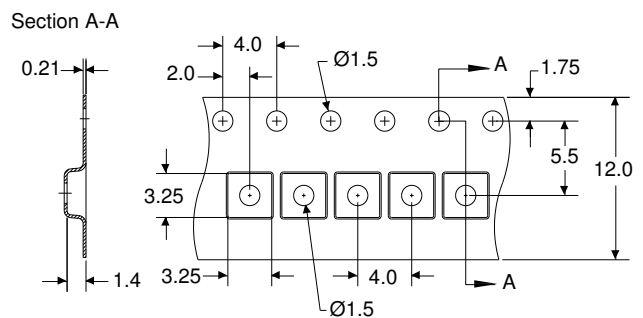
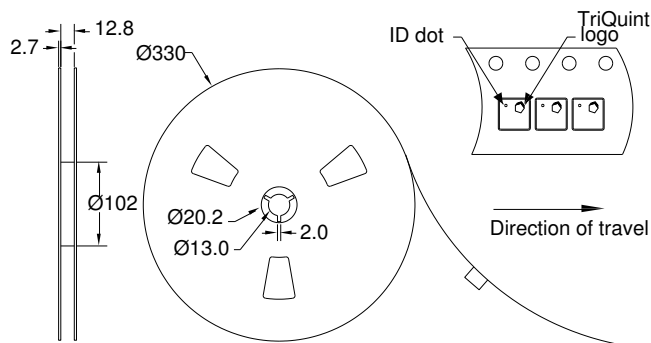
Body: Al₂O₃ ceramic
 Lid: Kovar, Ni plated
 Terminations: Au plating 0.5 - 1.0µm, over a 2-6µm Ni plating

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), Y = last digit of the year, and M = manufacturing site code

Tape and Reel Information

Standard T/R size = 5000 units/reel. All dimensions are in millimeters



Product Compliance Information

ESD Information



Caution! ESD-Sensitive Device

ESD Rating: 0

Value: Passes ≥ 200 V min.
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: B

Value: Passes ≥ 200 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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