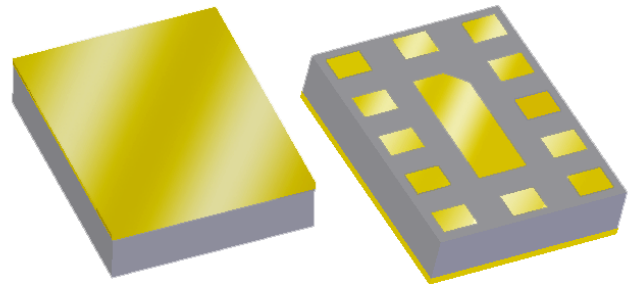


857061

782 MHz Notch Filter

Applications

- B13 notch filter for SVLTE applications
- Applicable passbands: 836.5 MHz cell band, 881.5 MHz cell band, 751 MHz B13 LTE.
- Handsets

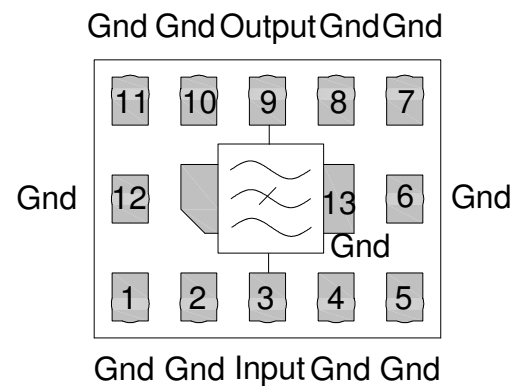


Product Features

- High linear notch filter
- Usable reject band 10 MHz
- Low loss in 824-849 MHz/869-894 MHz and 746-756 MHz
- High B13 attenuation
- Ceramic chip-scale Package (CSP)
- Small Size: 2.5 x 2.0 x 0.56 mm
- Hermetic **RoHS** compliant, **Pb-free**

Functional Block Diagram

Top view



General Description

The 857061 is a high performance Surface Acoustic Wave (SAW) Notch Filter designed to reject emissions in the B13 band while passing Band 5 cell band.

857061 is specifically designed to enable simultaneous voice and LTE for Band 5 application. It is specified to support Band 5 requirements in the entire 824 - 894 MHz band.

The 857061 uses advanced packaging techniques to achieve an industry-leading 2.5 x 2.0 x 0.56 mm package. The filter exhibits excellent power handling capabilities.

Pin Configuration

Pin #	SE-Balanced	Description
3		Input
9		Output
1,2,4,5,7,8,10,11		Ground
6,12,13		Case Ground

Ordering Information

Part No.	Description
857061	packaged part
857061-EVB	evaluation board

Standard T/R size = 10,000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: ⁽²⁾ -30 to +85 °C

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	782	-	MHz
Maximum Insertion Loss	746 – 756 MHz	-	1.0	1.5	dB
	824 – 849 MHz	-	0.6	1.0	dB
	869– 894 MHz	-	0.6	1.0	dB
Amplitude Variation ⁽⁶⁾	746 – 756 MHz	-	0.25	0.5	dB p-p
	824 – 849 MHz	-	0.1	0.2	dB p-p
	869– 894 MHz	-	0.1	0.2	dB p-p
Absolute Attenuation	777 – 787 MHz	20	24	-	dB
	1564 – 1574 MHz	3	4	-	dB
	1574 – 1577 MHz	3	4	-	dB
	2331 – 2361 MHz	5	7	-	dB
	2400 – 2484 MHz	5	7	-	dB
Input /Output Return Loss	746 – 756 MHz	10	14	-	dB
	824 – 849 MHz	13	18	-	dB
	869– 894 MHz	13	18	-	dB
IMD3 product ⁽⁵⁾		-	-105		dBm
Source Impedance (single-ended) ⁽⁵⁾		-	50	-	Ω
Load Impedance (single-ended) ⁽⁵⁾		-	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
- All power levels are referenced to the antenna port. Two CW tones are applied at frequencies f1 and f2, and the resultant intermodulation product in the 746-756 MHz band is measured. The first tone (f1 = 824-832 MHz, 24 dBm referenced to the antenna port) is applied at the output port (Duplexer). The second tone (f2 =f1-45 MHz, 13 dBm referenced to the antenna port) is applied at the input port (Antenna). The intermodulation product is measured at f1+45 MHz
- Over a sliding 1.25 MHz window, in-band

Absolute Maximum Ratings ⁽⁷⁾

Parameter	Rating
Operating Temperature	-30 to +85 °C
Storage Temperature	-40 to +85 °C
Input Power ⁽⁸⁾	+29 dBm

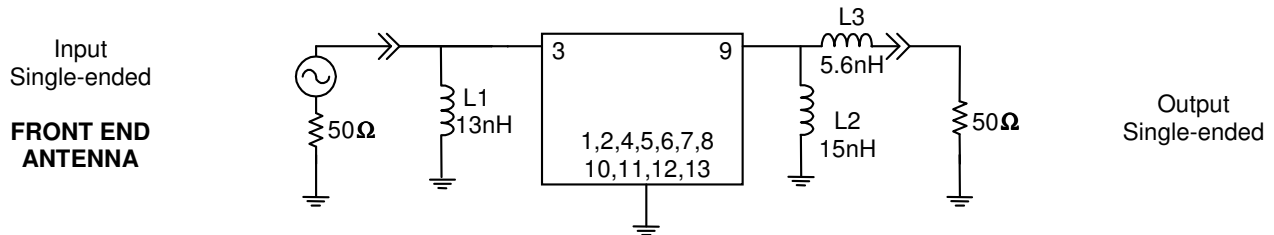
- Operation of this device outside the parameter ranges given above may cause permanent damage.
- All ports matched to 50 Ohms. (55°C, equivalent 5000 hours).

857061

782 MHz Notch Filter

Reference Design 50Ω SE In, 50Ω SE Out

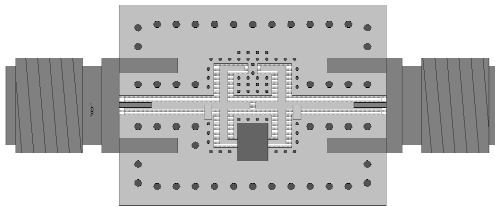
Schematic



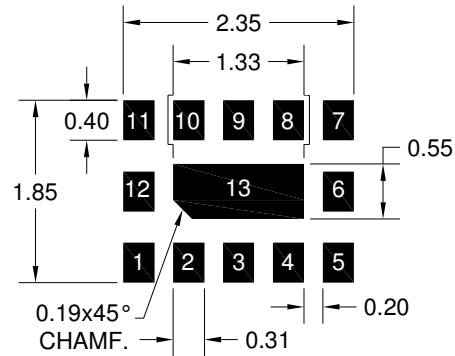
Notes:

Actual matching values may vary due to PCB layout and parasitic

PC Board



Mounting Configuration



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

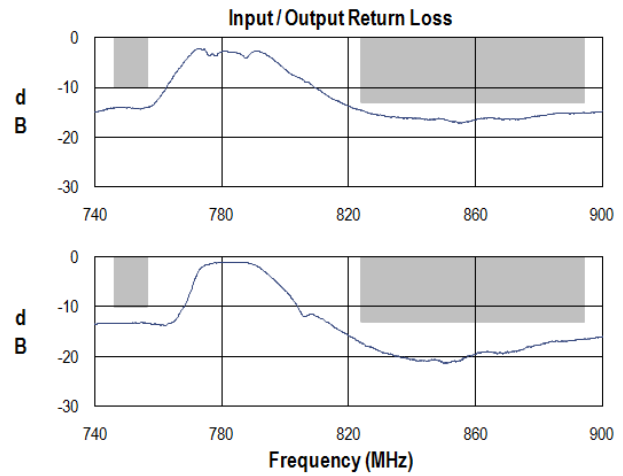
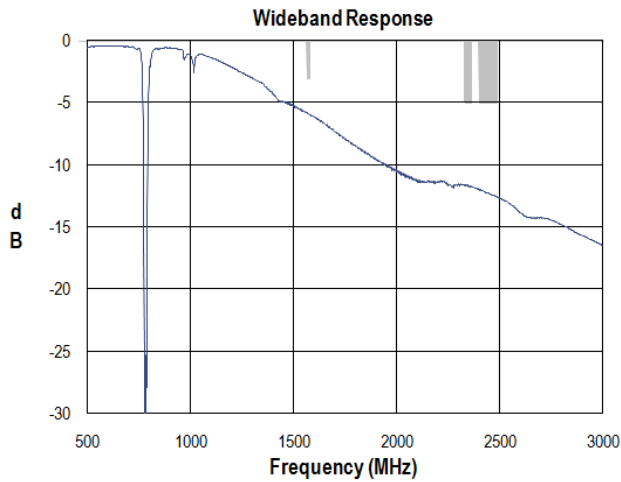
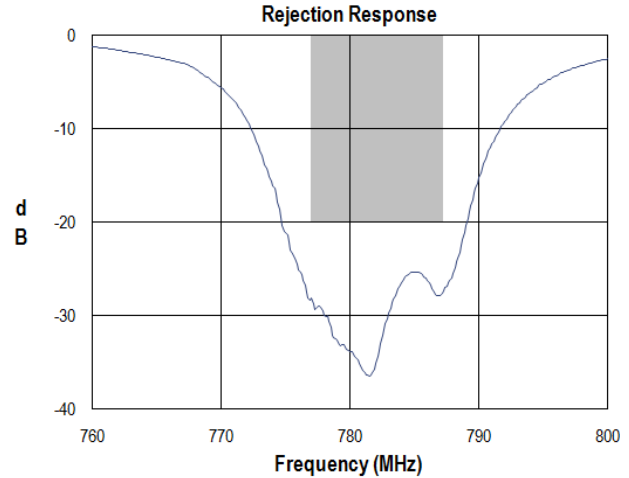
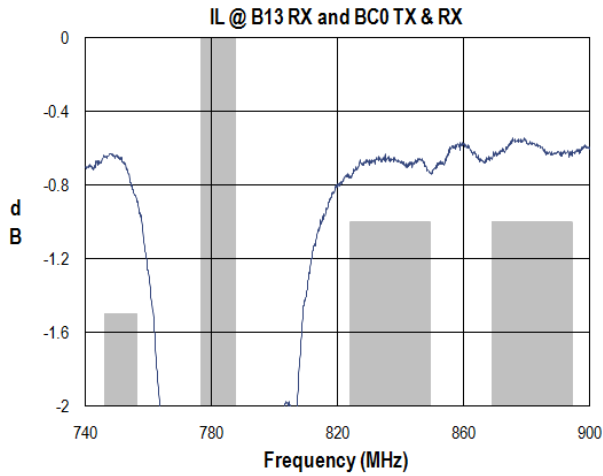
Notes:

1. Top view of the product.
2. All dimensions are in millimeters.
3. This footprint represents a recommendation only.

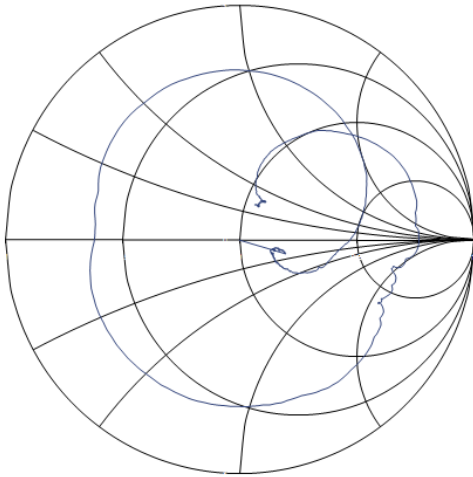
Bill of Material

Reference Desg.	Value	Description	Manufacturer	Part Number
L1	13 nH	Coil Wire-wound, 0402, y%	MuRata	LQW15AN13NH00
L2	15 nH	Coil Wire-wound, 0402, y%	MuRata	LQW15AN15NH00
L3	5.6 nH	Coil Wire-wound, 0402, y%	MuRata	LQW15AN5N6B00
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	Multiple	960930

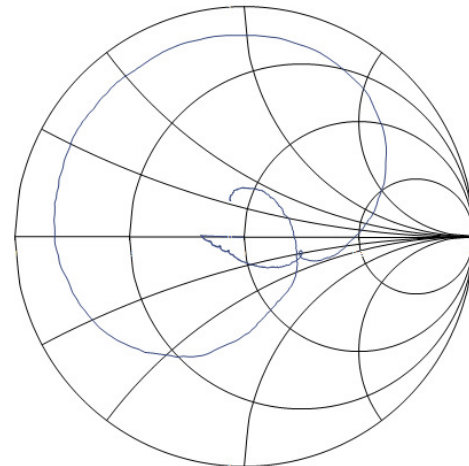
Typical Performance (at room temperature)



Input Smith Chart

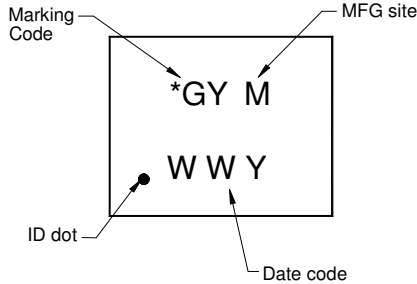


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking

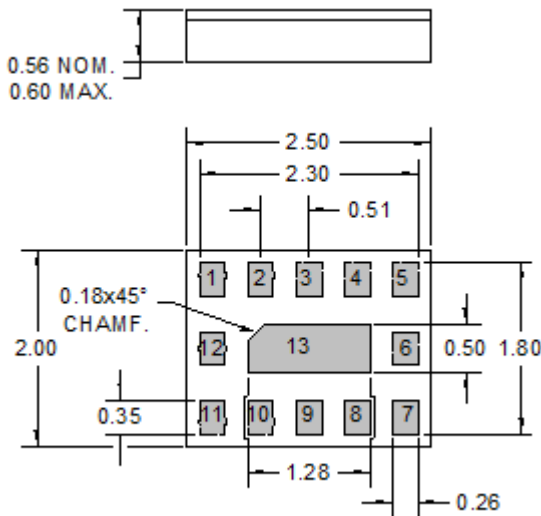


Package Style: CSP-10GT
Dimensions: 2.5 x 2.00 x 0.56 mm

Body: Al_2O_3 ceramic
Lid: Kovar or Alloy 42, Au over Ni plated
Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

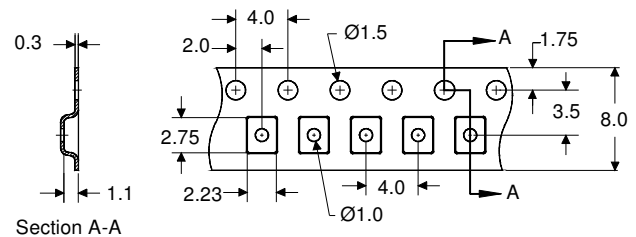
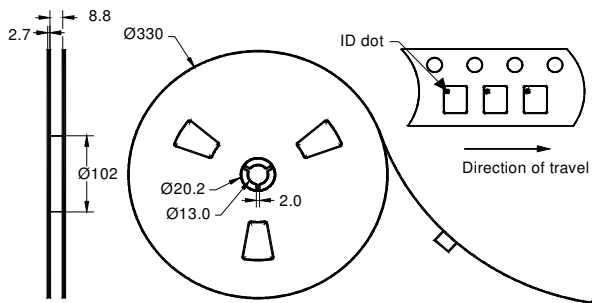
All dimensions shown are nominal in millimeters
All tolerances are ± 0.15 mm except overall length and width ± 0.10 mm

The date code consists of: WW = 2 digit week,
Y = last digit of year, M = manufacturing site code



Tape and Reel Information

Standard T/R size = 10,000 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: M1

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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