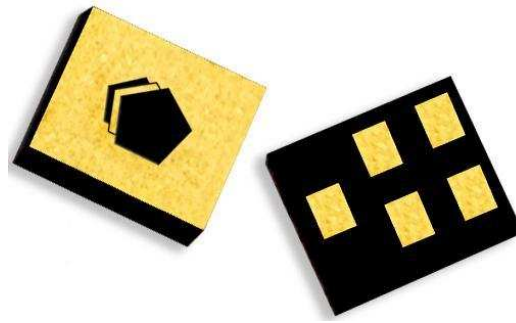


857005

2437 MHz SAW Filter

Applications

- For ISM/WLAN applications
- For high-power WLAN access points



Product Features

- Usable bandwidth 66 MHz
- Low loss through ISM/WiFi band
- Steep rolloff to provide rejection in the FCC restricted bands
- Single-ended operation
- Ceramic chip-scale Package (CSP)
- Small Size: 1.40 x 1.20 x 0.46 mm
- Hermetically Sealed
- **RoHS** compliant, **Pb**-free

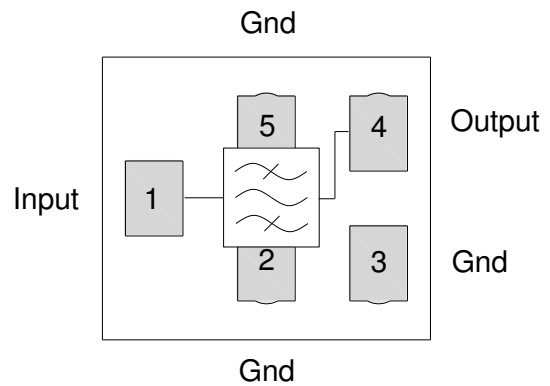
General Description

857005 is specifically designed for steep rolloff to provide rejection in the FCC restricted bands above and below the WiFi passband. This provides designers of access points the capability to increase output power and improve range.

857005 uses advanced and inexpensive packaging techniques to achieve an extremely small 1.40 x 1.20 x 0.46 mm hermetically sealed package.

Functional Block Diagram

Top view



Pin Configuration

Pin #	Balanced	Description
1		Input
4		Output
2,3,5		Ground

Ordering Information

Part No.	Description
857005	packaged part
857005-EVB	evaluation board

Standard T/R size = 10000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: ⁽²⁾ -10 to +75 °C

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	2437	-	MHz
Maximum Insertion Loss	2412 – 2462 MHz	-	2.1	4	dB
Amplitude Variation (any 16 MHz Channel)	2404 – 2470 MHz	-	1.8	3.2	dB p-p
Group Delay Variation	2404 – 2470 MHz	-	10	25	ns p-p
Group Delay Variation (any 16 MHz Channel)	2404 – 2470 MHz	-	6.0	15	ns p-p
Absolute Attenuation ⁽⁵⁾	300 – 2100 MHz	20	32	-	dB
	2380 – 2390 MHz (25 to 55°C)	4	8.0	-	dB
	2483.5 – 2500 MHz (25 to 55°C)	4	8.0	-	dB
	2550 – 3000 MHz	25	34	-	dB
	3000 – 6000 MHz	15	32	-	dB
Temperature coefficient of frequency	lower 4 dB band edge ⁽⁵⁾	-	-32	-	ppm/ °C
	upper 4 dB band edge ⁽⁵⁾	-	-56	-	ppm/ °C
Input Return Loss	2404 – 2470 MHz	8	12	-	dB
Output Return Loss	2404 – 2470 MHz	8	12	-	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

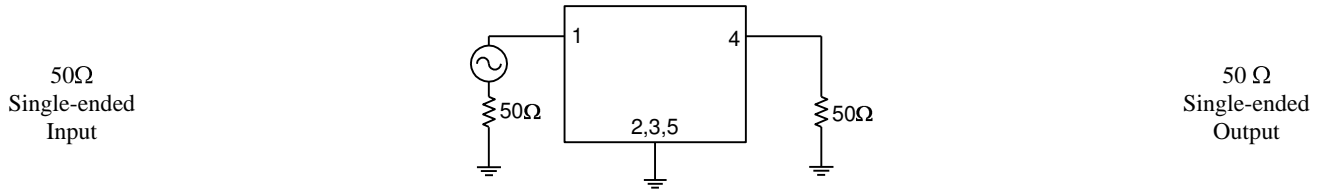
Parameter	Rating
Operating Temperature ⁽⁷⁾	-40 to +85 °C
Storage Temperature	-40 to +85 °C
Input Power ⁽⁸⁾	+9dBm

- Device may operate over this range with degraded Electrical Specifications
- Device is measured for equivalent 10K hours @ +55 °C [CW Signal]

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

Reference Design

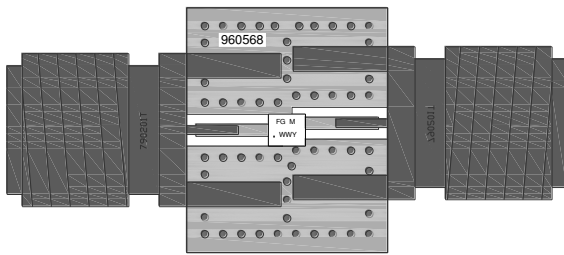
Schematic



Notes:

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

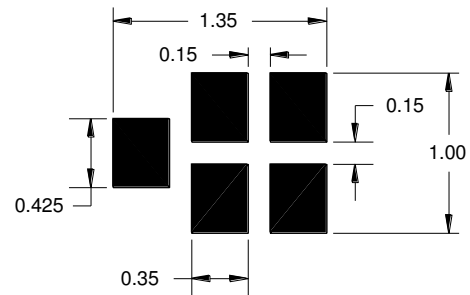
PC Board



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



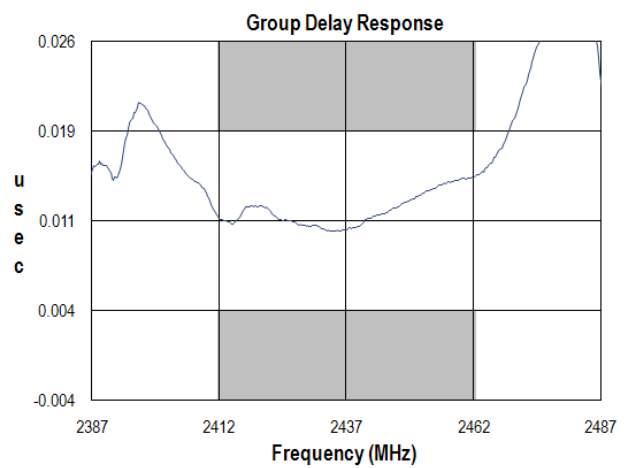
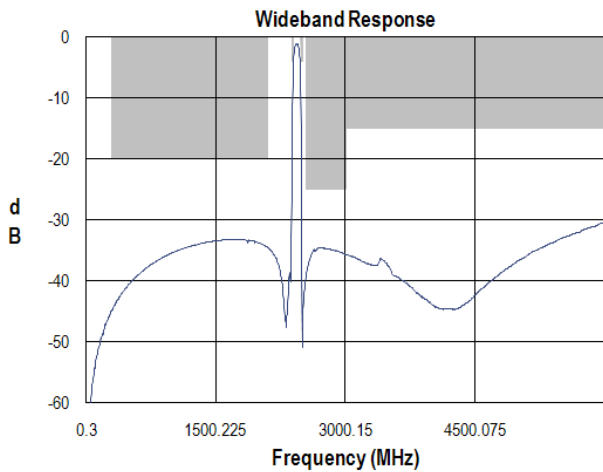
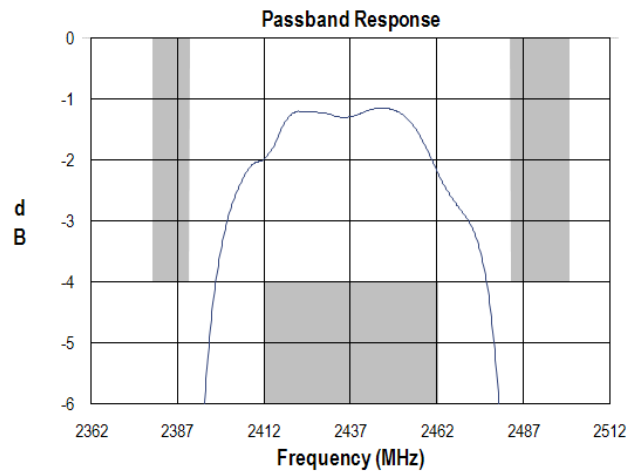
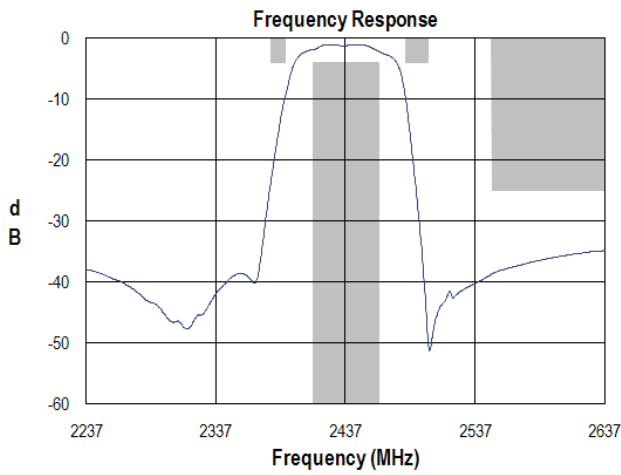
Notes:

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

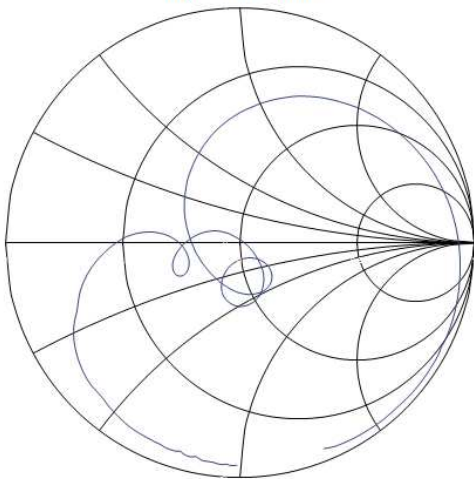
Bill of Material

Reference Desg.	Value	Description	Manufacturer	Part Number
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960568

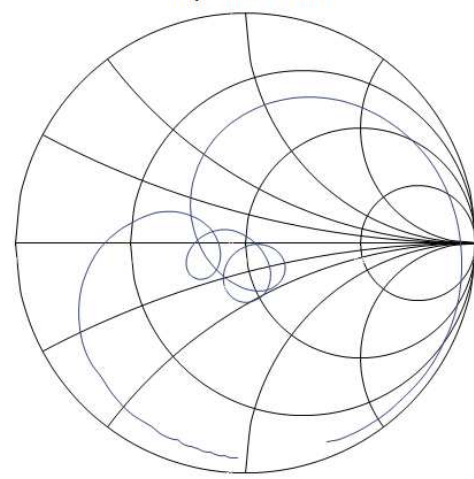
Typical Performance (at room temperature)



Input Smith Chart

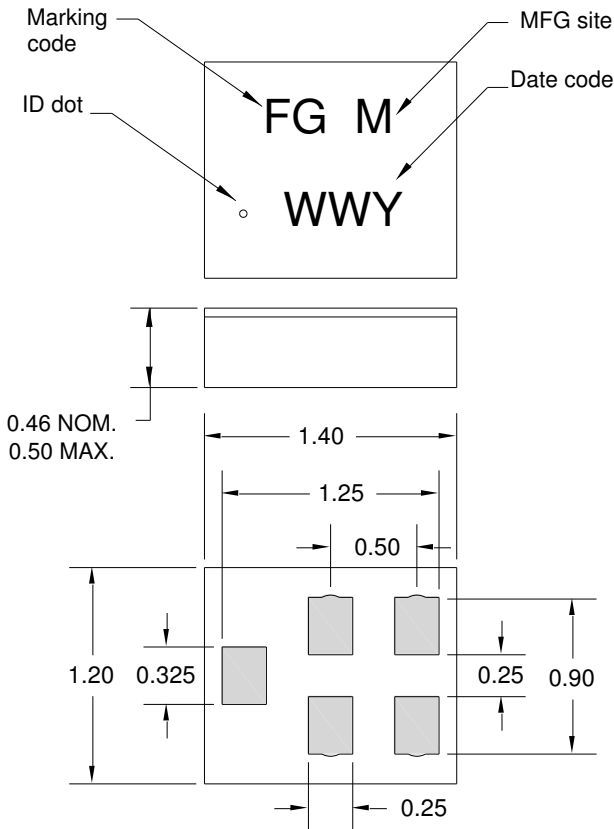


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



Package Style: CSP-5BT
 Dimensions: 1.40 x 1.20 x 0.46 mm

Body: Al₂O₃ ceramic
 Lid: Kovar or Alloy 42, Au over Ni plated

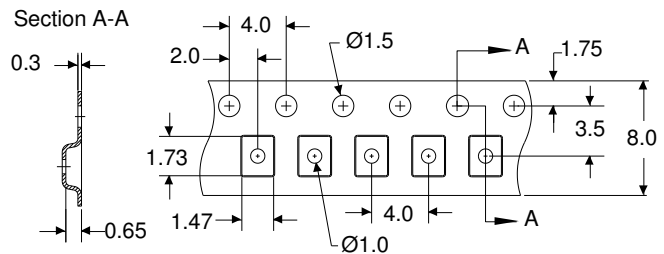
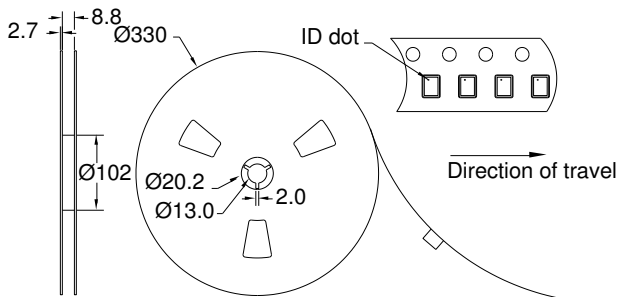
Terminations: Au plating 0.5 - 1.0µm, over a 2-6µm Ni plating

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

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

Tape and Reel Information

Standard T/R size = 10000 units/reel. All dimensions are in millimeters



Product Compliance Information

ESD Information



Caution! ESD-Sensitive Device

ESD Rating: 1B

Value: Passes ≥ 550 V min.
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: B

Value: Passes ≥ 250 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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