

SAW Filters for GPS Applications



General Description

ICS offers a range of surface acoustic wave (SAW) devices to be used in GPS applications. Designed with low loss and excellent rejection characteristics, the ICS product offering includes front-end RF bandpass filters, intermediate frequency (IF) filters, and a delay line to provide a complete system solution. The GPS SAW filters are lead-free and RoHS-compliant.

Front-End RF Bandpass Filters

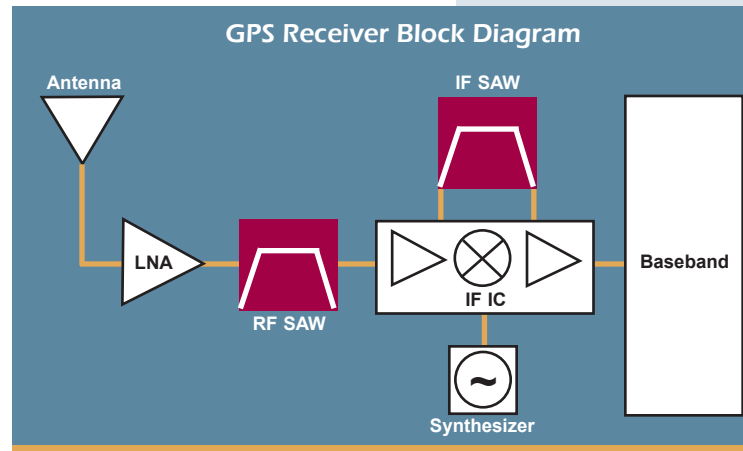
The SF1575BA02505S and SF157BA02056S are 1575.42-MHz bandpass filters that offer low loss, excellent rejection, and miniature surface-mount packaging to meet the needs of small form-factor GPS receivers.

IF Filter

Designed for IF-stage filtering, the SF0185BA02302S is centered at 185.76 MHz with a bandwidth of 4.48 MHz. This part offers tight rejection, low-amplitude ripple, and low-phase ripple.

Delay Line

The SF1575DL03104S is a 1575-MHz SAW delay line designed for use in GPS, satellite, and other high-end communications applications.



RF Filters

| Part Number | F_C | Min. Bandwidth | Max. Insertion Loss | Rejection | Amplitude Ripple | Package |
|----------------|-------------|----------------|---------------------|------------------------------------|------------------|---------------------------|
| SF1575BA02505S | 1575.42 MHz | 2.4 MHz | 1.8 dB | 30 dB @ -75 MHz 30 dB @ +50 MHz | 1.0 dB | SMP0303 (3.0 x 3.0 mm) |
| SF1575BA02506S | 1575.42 MHz | 2.4 MHz | 2.0 dB | 30 dB @ -75 MHz 30 dB @ +50 MHz | 1.0 dB | SMP0202 (2.4 x 2.0 mm) |

IF Filters

| Part Number | F_C | Min. Bandwidth | Max. Insertion Loss | Rejection | GD Ripple | Package |
|----------------|------------|----------------|---------------------|--|-----------------|---------------------------|
| SF0185BA02302S | 185.76 MHz | 4.48 MHz | 25 dB | 42 dB @ -9.54 MHz 42 dB @ +9.46 MHz | 2.0 ns p-p max. | SMP0907 (9.1 x 7.1 mm) |

Delay Lines

| Part Number | F_C | Min. Bandwidth | Max. Insertion Loss | Average Group Delay | GD Ripple | Package |
|-----------------|----------|----------------|---------------------|---------------------|-----------|---------------------------|
| SF01575DL03104S | 1575 MHz | 20 MHz | 23 dB | 230 ns max. | 2.0 dB | SMP0505 (5.0 x 5.0 mm) |

ICS also offers custom and semi-custom devices to match your frequency plan and requirements. Please contact the ICS representative nearest you with your details.



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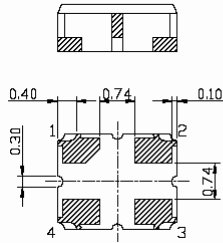
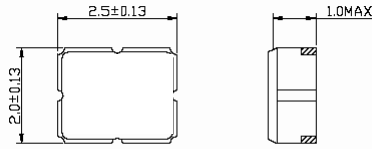
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Package Diagrams (All dimensions in millimeters)

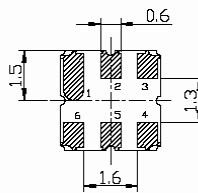
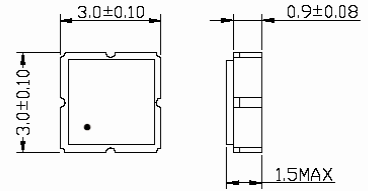
SMP0202



Units: mm

Pad Configuration:
Input: 1
Output: 3
Ground: 2, 4

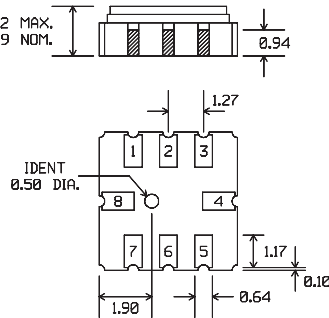
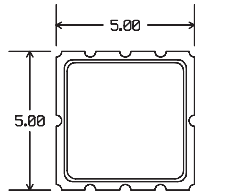
SMP0303



Units: mm

Pad Configuration:
Input: 2
Output: 5
Ground: 1, 3, 4, 6

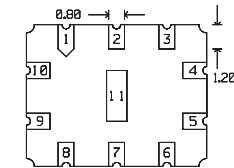
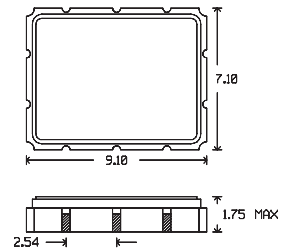
SMP0505



Units: mm

Pad Configuration:
Input: 3
Input Return: 2
Output: 7
Output Return: 6
Ground: 1, 4, 5, 8

SMP0907



Units: mm

Pad Configuration:
Input: 9
Input Return: 8
Output: 4
Output Return: 3
Ground: 1, 2, 5, 6, 7, 10, 11