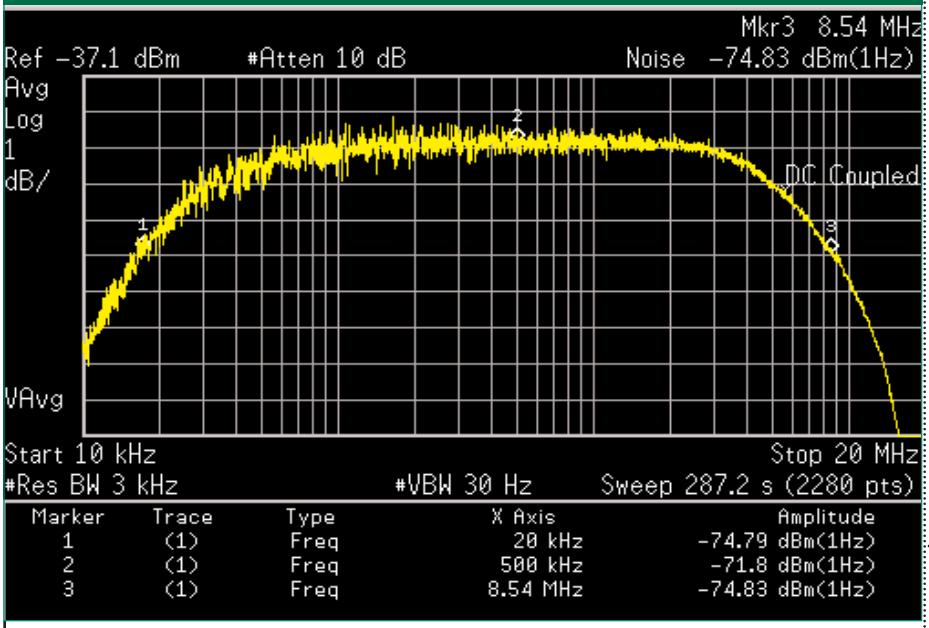
SMN7105

1/2 Inch Surface Mount Amplified Noise Source

100 kHz to 3 MHz

SMN7105 Typical Data



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	20 kHz	-74.79 dBm(1Hz)
2	(1)	Freq	500 kHz	-71.8 dBm(1Hz)
3	(1)	Freq	8.54 MHz	-74.83 dBm(1Hz)

Application Note

Common Noise Applications

1. *Barrage Jamming:* The noise source is fed into the tuning port of a VCO via a bias tee and a positive DC voltage. The random nature of noise makes the output of the VCO to hop around in a given frequency band randomly making an ideal jamming signal. Further circuitry can be used between the noise source and tuning port to shape the noise probability density function (PDF) for the desired jamming effect.

2. *Random Number Generation for Encryption:* Noise sources being truly random (not pseudorandom) give the ultimate in secure communication because of their ability to generate a truly random number pattern. This can be used to seed an encryption key for authentication. The noise signal can be fed directly into an A/D converter for sampling or a simpler techniques might use a comparator. Further shaping of the noise is often employed whether either analog if in front of the A/D converter or afterwards using DSP.

Description

The SMN7105 noise module is designed for a wide range of applications.
It features high noise output amplitude for uses ranging from encryption to jamming. All biasing and amplification circuitry is built-in making it easy to design into your system. It features a built-in voltage regulator for highly stable output even if your DC supply lines are not.

Suitable for High Volume Products:

The SMN7105 noise sources being surface mount, having a small footprint and available on tape and reel, make them ideal for production manufacturing. Traditionally packaged noise sources have been large and costly rendering them less suitable for all but the more expensive, exotic systems. Noise can now be thought of as lower cost, more reliable, smaller and an easier to implement alternative to costly microprocessor based solutions such as PN generators, arbitrary waveform generators and DSP processors.

Specifications

- Frequency: 100 kHz to 3 MHz
- Noise Power Spectral Density (No): -73 dBm/Hz (min)
- Noise Power (N): -8 dBm
- Spectral Flatness: 1 dB (total window)
- Bias: 12 Vdc Internally Regulated
- Current Draw: 35 mA Max
- Peak Factor: 5:1
- Operating Temp: -55 to +85 C
- Storage Temp: -55 to +125 C

MICRONETICS
NOISE PRODUCTS

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Useful Noise Equations

Converting ENR to noise spectral density (N_0): 0 dB ENR = -174 dBm/Hz

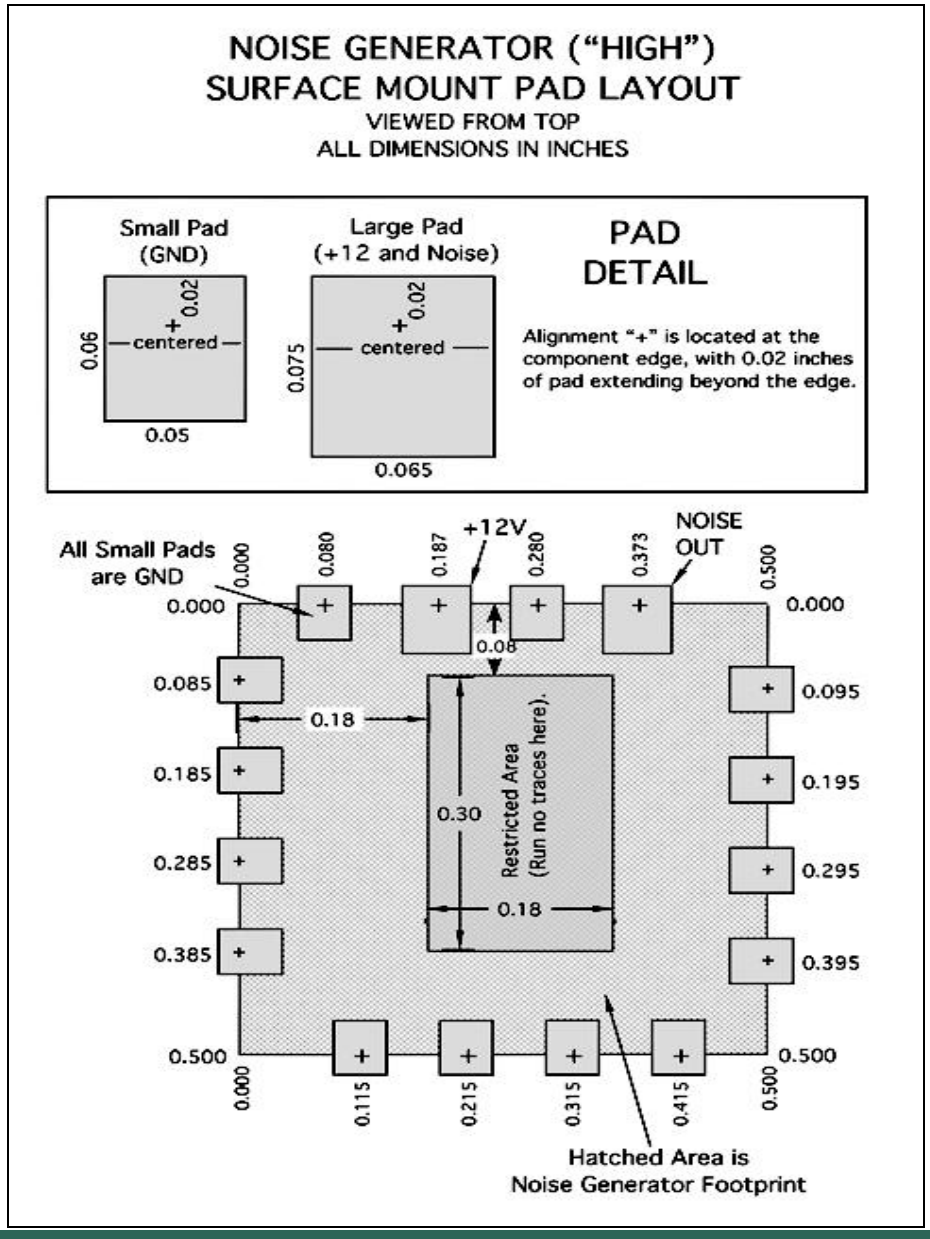
Calculating noise power in a given bandwidth (BW) from noise spectral density: Power (dBm) = N_0 + 10log(BW)

How To Order

Model # S M N 7 1 0 5- D 1 C

Indicate Bulk or Tape and Reel when ordering

Package Outline Drawing



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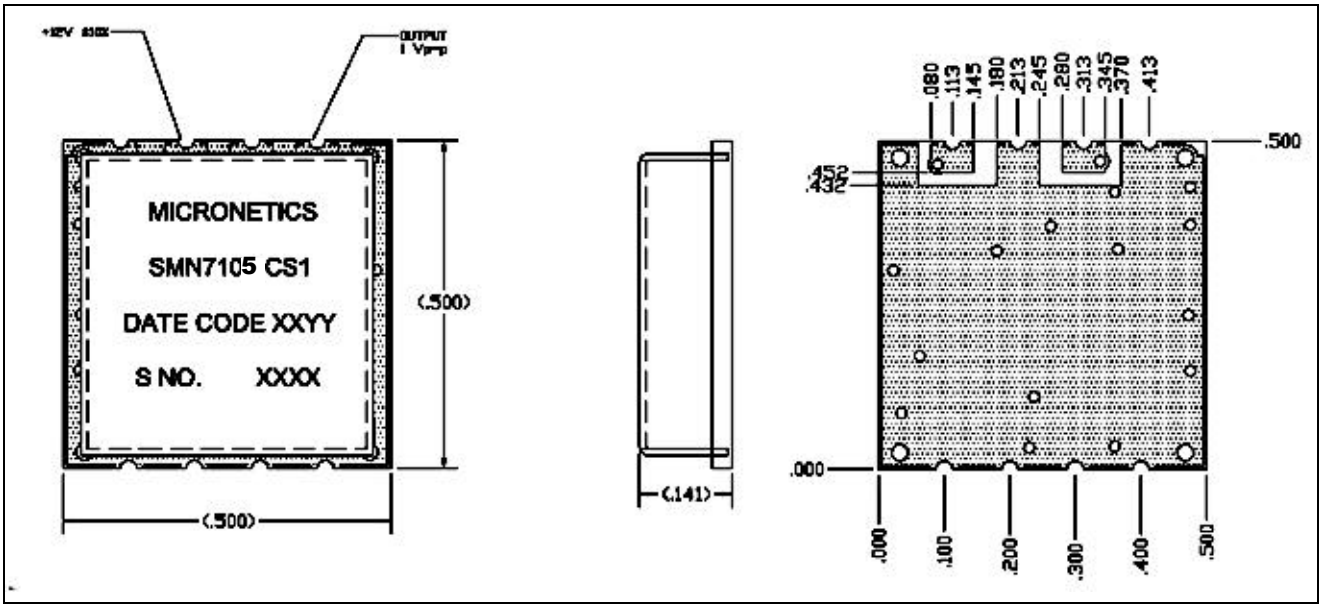

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