



Surface Mount (SMT) Pin Packaged Noise Source Module,  
Output ENR of 31 dB, +12 VDC, 0.2 MHz to 3 GHz

## Noise Generators Technical Data Sheet

PE85NS4002

### Features

- Surface Mount Packaged Noise Source module
- Frequency Range: 200 KHz to 3 GHz
- High Output ENR level: 31 dB
- White Gaussian Noise Output
- Minimum power level -143 dBm/Hz
- Maximum Flatness +/- 1.50 dB
- Small Package Outline with 8 gullwing leads
- DC Voltage: +12 Vdc
- -40°C to +85°C Operating Temperature
- Crest Factor: 5:1

### Applications

- Noise Figure Test & Measurement
- Built-In Test Equipment
- Dithering for Increased Dynamic Range for A/D Converters
- Source for Bit Error Rate Testing

### Description

The PE85NS4002 is a surface mount packaged noise source which operates over a frequency range from 200 KHz to 3 GHz. This module is particularly useful in circuit board applications used for built-in test equipment, dithering for increased dynamic range of A/D converters, and as a source for bit error rate testing. This module operates at +12 Vdc and features a high output ENR level of 31 dB. The output White Gaussian Noise has a minimum power level of -143 dBm/Hz. Maximum flatness across the entire frequency band is +/-1.50 dB. Operating temperature range is -40°C to +85°C with a temperature coefficient of 0.01 dB/°C. The small surface mount package outline uses 8 gull wing leads. For the circuit board layout, a through hole mounting footprint diagram is included for reference.

### Electrical Specifications

#### RF Characteristics

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.0002		3	GHz
Impedance		50		Ohms
Output ENR	31			dB
Flatness			±1.5	dB
Output Variation vs Temperature		0.01		dB/deg C
Output Power Spectral Density	-143			dBm/Hz
Bias Voltage 1		12		Volts
Input Current 1			10	mA
Crest Factor		5:1		

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Surface Mount \(SMT\) Pin Packaged Noise Source Module, Output ENR of 31 dB, +12 VDC, 0.2 MHz to 3 GHz PE85NS4002](#)



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### Mechanical Specifications

#### Size

Length	0.815 in [20.7 mm]
Width/Dia.	0.595 in [15.11 mm]
Height	0.255 in [6.48 mm]
Weight	0.01 lbs [4.54 g]
Package Type	Surface Mount

### Environmental Specifications

#### Temperature

Operating Range	-40 to +85 °C
Storage Range	-65 to +150 °C

**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

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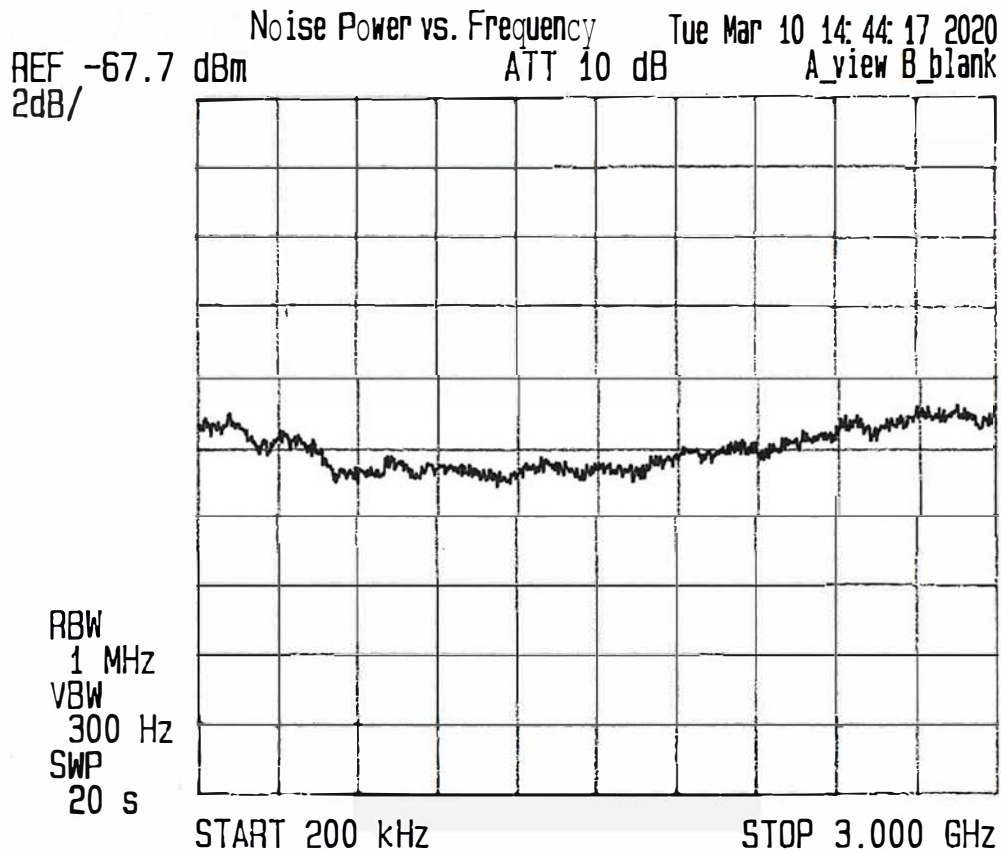


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Typical Performance Data



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Surface Mount (SMT) Pin Packaged Noise Source Module, Output ENR of 31 dB, +12 VDC, 0.2 MHz to 3 GHz from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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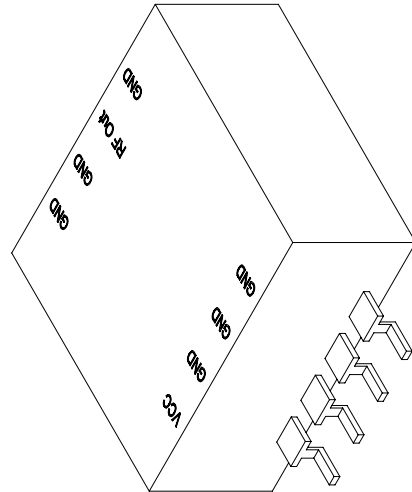
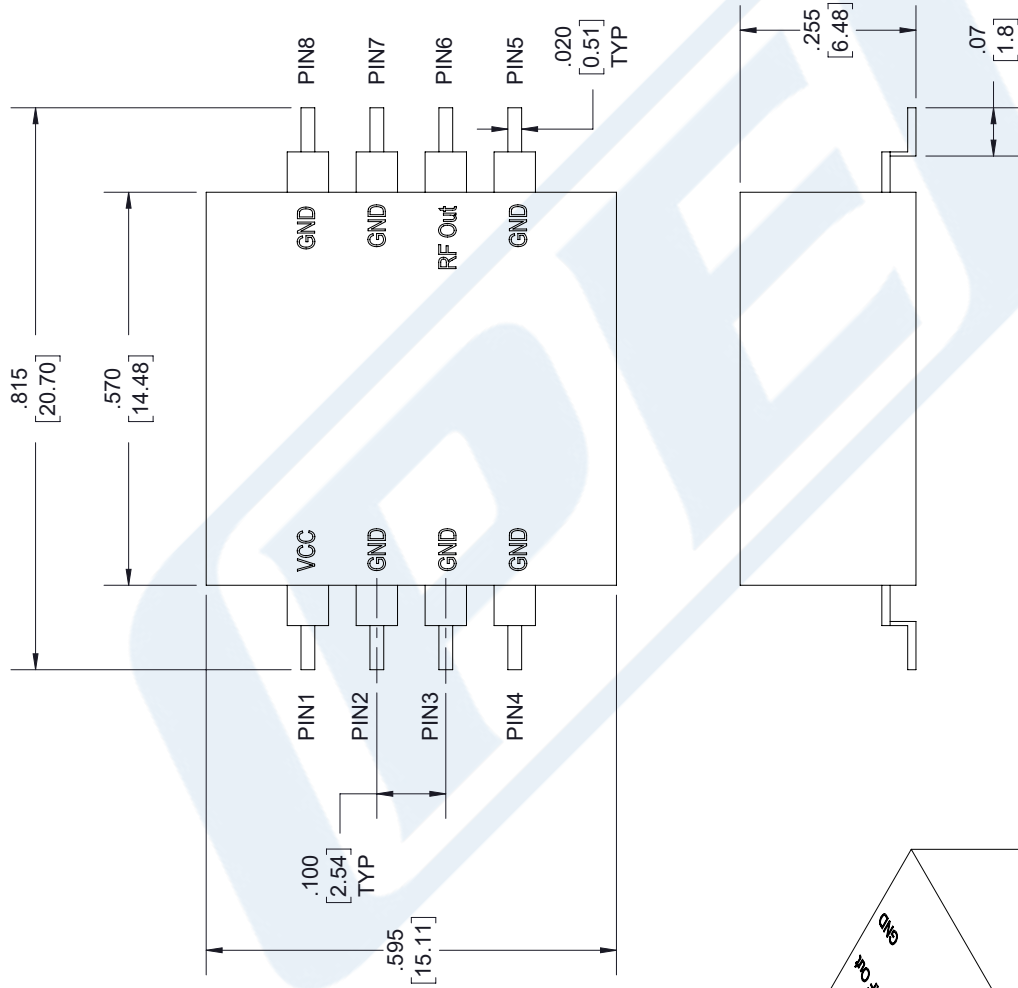
URL: <https://www.pasternack.com/noise-source-enr-31-db-3-ghz-pe85ns4002-p.aspx>

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# PE85NS4002 CAD Drawing

Surface Mount (SMT) Pin Packaged Noise Source Module,  
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6/8/2020	TGALLA



**LABEL:**  
PASTERNAK  
PE85NS4002  
D/C: YYYY

**PE PASTERNAK**  
an INFINITI<sup>®</sup> brand

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SHEET 1 OF 2  
SCALE N/A

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UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [ ] ARE MILLIMETERS

**TOLERANCES:**

.X = ±.2	[5.08]	FRACTIONS	± 1/32
.XX = ±.02	[.51]	ANGLES	± 1°
.XXX = ±.005	[.13]	CABLE LENGTH (L)	TOLERANCES:
L ≤ 12 [305] = +1 [25] / -0			
12 [305] < L ≤ 60 [1524] = +2 [51] / -0			
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0			
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0			
300 [7620] < L = +5% / -0			

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

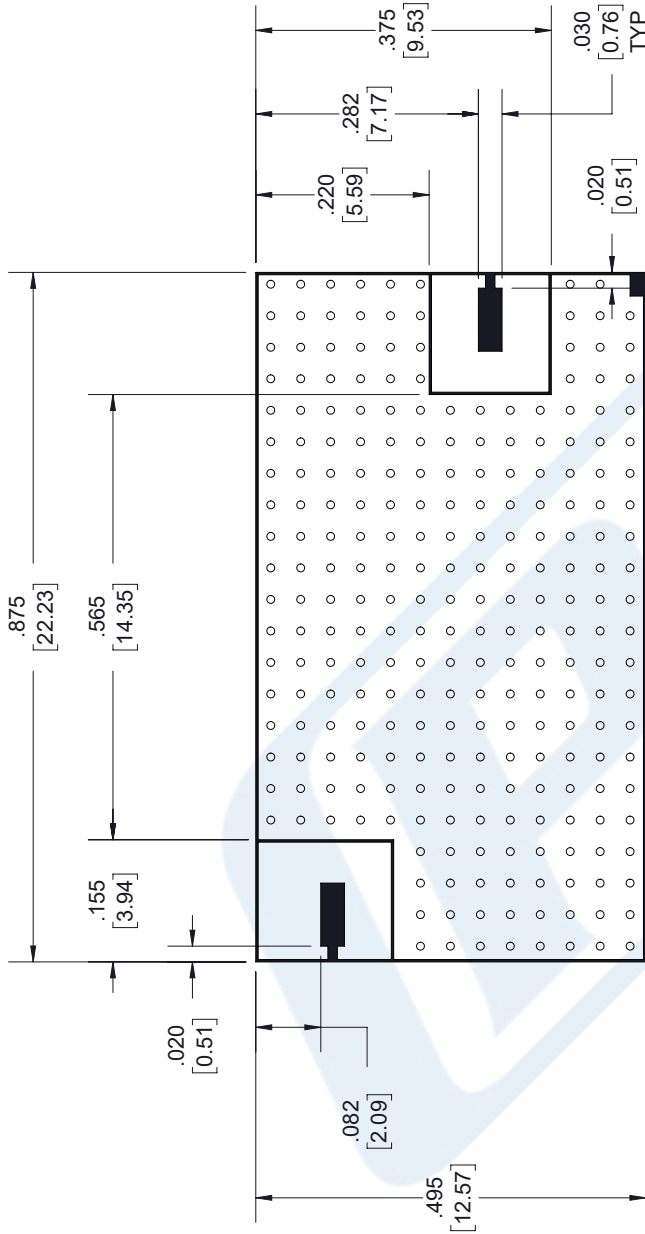
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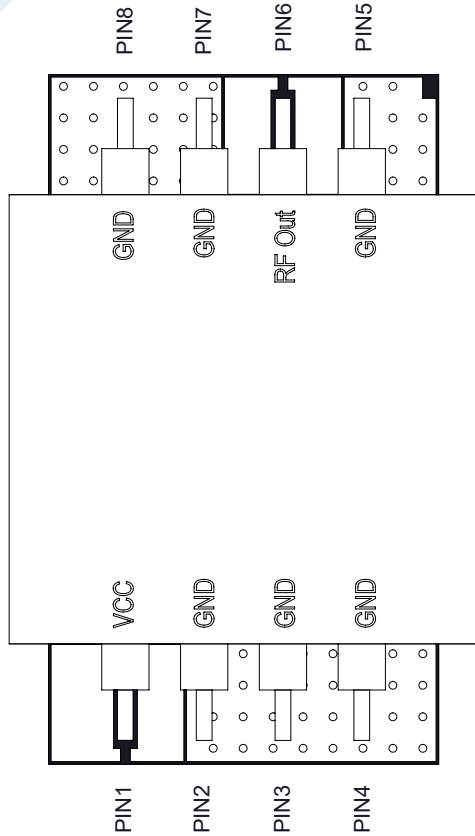
REV A

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**PAD LAYOUT**



**MODEL & PAD LAYOUT**

**NOTES:**

1. Via pattern representative only, use sufficient vias close to ground pins depending on board material and thickness to make an effective ground for the maximum frequency of operation.
2. Dimensions are for guideline use only.

UNLESS OTHERWISE SPECIFIED  
LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

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