



Surface Mount (SMT) Pin Packaged Noise Source Module,
Output ENR of 51 dB, +12 VDC, 0.2 MHz to 3 GHz

Noise Generators Technical Data Sheet

PE85NS4004

Features

- Surface Mount Packaged Noise Source module
- Frequency Range: 200 KHz to 3 GHz
- Very High Output ENR level: 51 dB
- White Gaussian Noise Output
- Minimum power level -123 dBm/Hz
- Maximum Flatness +/- 2 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 PE85NS4004 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. The design operates at +12 Vdc and features a very high output ENR level of 51 dB. The output White Gaussian Noise has a minimum power level of -123 dBm/Hz. Maximum flatness across the entire frequency band is +/- 2 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	51			dB
Flatness			±2	dB
Output Variation vs Temperature		0.01		dB/deg C
Output Power Spectral Density	-123			dBm/Hz
Bias Voltage 1		12		Volts
Input Current 1			25	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 51 dB, +12 VDC, 0.2 MHz to 3 GHz PE85NS4004](#)



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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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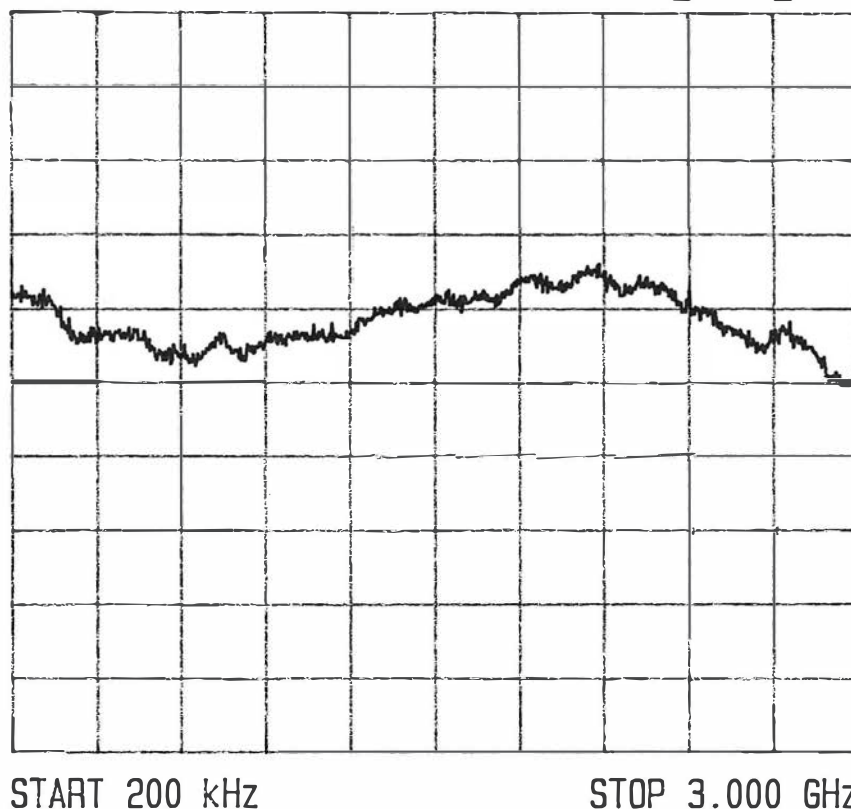
Typical Performance Data

REF -51.7 dBm
2dB/

Noise Power vs. Frequency
ATT 10 dB

Tue Mar 10 14:59:38 2020
A_view B_blank

RBW
1 MHz
VBW
300 Hz
SWP
20 s



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Surface Mount (SMT) Pin Packaged Noise Source Module, Output ENR of 51 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.

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 51 dB, +12 VDC, 0.2 MHz to 3 GHz PE85NS4004](https://www.pasternack.com/noise-source-enr-51-db-3-ghz-pe85ns4004-p.aspx)

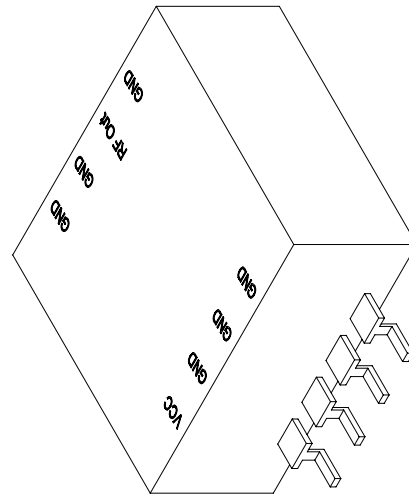
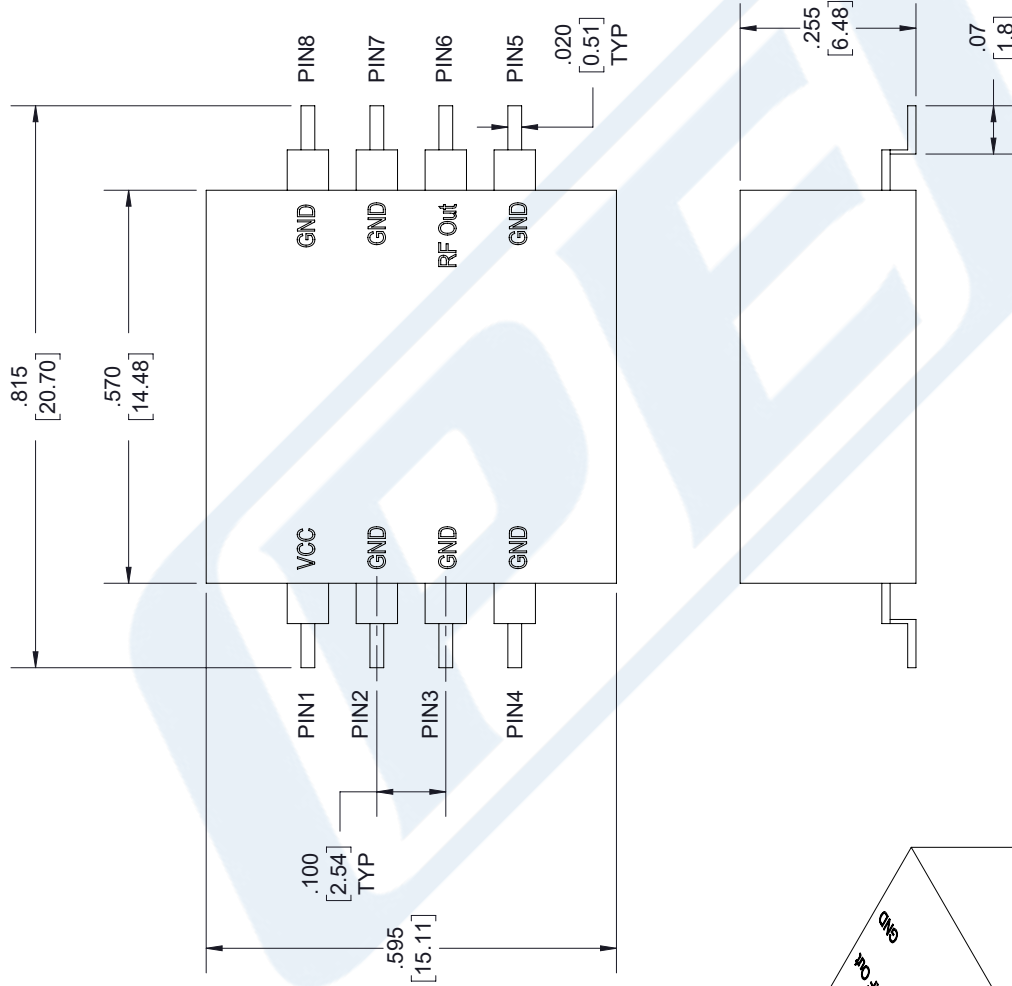
URL: <https://www.pasternack.com/noise-source-enr-51-db-3-ghz-pe85ns4004-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

PE85NS4004 CAD Drawing

Surface Mount (SMT) Pin Packaged Noise Source Module,
Output ENR of 51 dB, +12 VDC, 0.2 MHz to 3 GHz

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6/8/2020	TGALLA



LABEL:

PASTERNAK
PE85NS4004
D/C: YYYY

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

TOLERANCES:

.X = ± .2	[5.08]	FRACTIONS
.XX = ± .02	[.51]	± 1/32
.XXX = ± .005	[.13]	ANGLES ± 1°

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	± .8% / -0	

ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

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THIRD-ANGLE PROJECTION

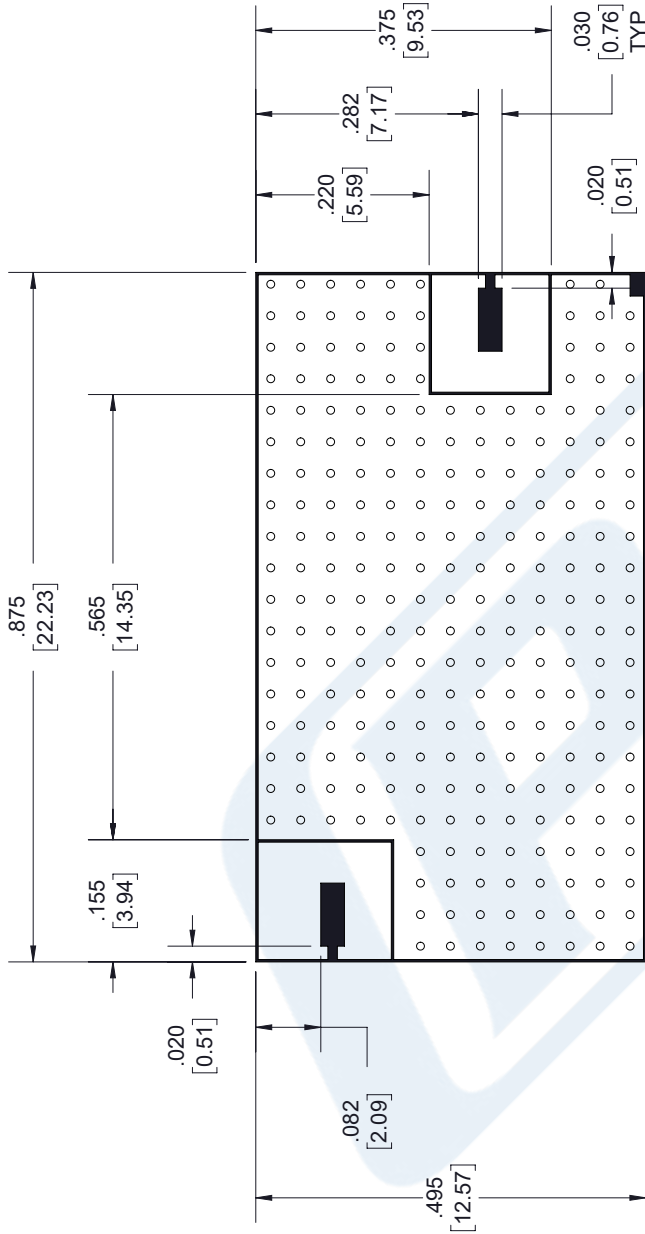
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SHEET 1 OF 2
SCALE N/A

SIZE CAGE CODE DRAWN BY ITEM NO.
A 53919 K.DANG PE85NS4004 REV A

PE85NS4004 CAD Drawing

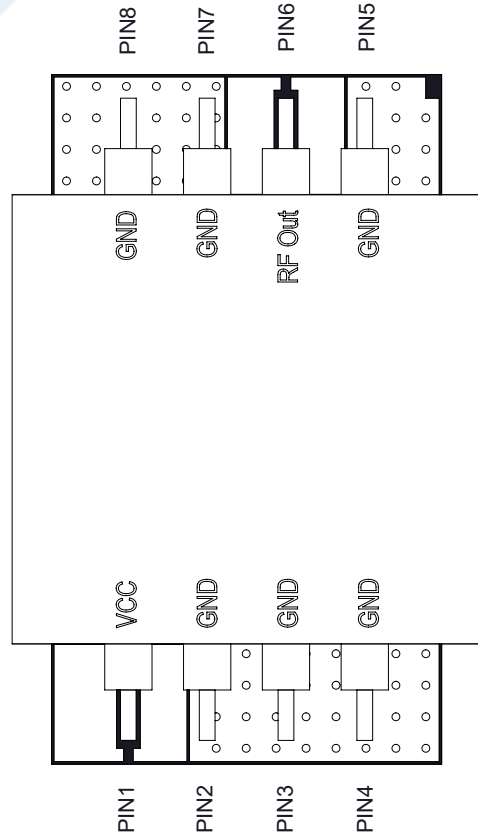
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PAD LAYOUT

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.



MODEL & PAD LAYOUT

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

TOLERANCES:
 .X = ± .2 [5.08]
 .XX = ± .02 [0.51]
 .XXX = ± .005 [0.13]
 FRACTIONS ± 1/32
 ANGLES ± 1°
 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
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THIRD-ANGLE PROJECTION

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SHEET 2 OF 2
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REV A

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