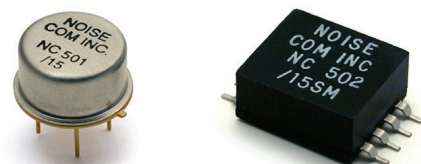


NC500 / 500SM Series

200 kHz to 5 GHz



Noise Modules for BITE

The NC500 (through hole) and NC500SM (surface mount) Series noise modules are an economical solution for built-in test requirements. They contain complete bias circuits and require no external components.

The surface mount package is suitable for mounting on microstrip. The modules produce extremely flat output power versus frequency characteristic that is insensitive to temperature and voltage variations.

The NC500 Series modules are housed in a TO-8 metal can, and require 0.2 to 10 mA, while the NC500SM Series modules are housed in a surface mount plastic package. Both typically require 5 mA and produce a minimum of 31 dB ENR of white Gaussian noise. The NC510 and NC510SM Series typically require 30 mA and have higher output with a minimum of 51 dB ENR.

Typical applications for these noise modules include built-in test equipment (BITE), signal strength meters for cellular, PCS, CATV, calibrators, spectrum analyzers, radar warning receivers (RWR), and dither A/D quantization error. Noise Com can optimize frequency range, voltage and output levels for specific applications. Most models are available from stock.

When ordering, add the suffix "SM" to the model number to denote the surface mount version. If the suffix is not included, the drop-in version (through hole) will be supplied. (Optional custom screening available). Add suffix R for RoHS compliant.

Applications

- Built-in test equipment (BITE)
- Signal strength meters for cellular, PCS and CATV
- Calibrators
- Spectrum analyzers
- Radar warning receivers (RWR)
- Dither A/D quantization error
- Gain-bandwidth product testing

| Model For +12 V Supply | Model For +15 V Supply | Model For +28 V Supply | Frequency Range | Typical Output ENR (dB) @ R _i (Ω) | | Output Flatness (dB) | I (Max) (mA) |
|---------------------------|---------------------------|---------------------------|--------------------|---|----|-------------------------|-----------------|
| NC501/12 | NC501/15 | NC501 | 200 kHz - 500 MHz | 31 | 50 | ±0.5 | 10 |
| NC502/12 | NC502/15 | NC502 | 200 kHz - 1 GHz | 31 | 50 | ±1.0 | 10 |
| NC503/12 | NC503/15 | NC503 | 200 kHz - 2 GHz | 31 | 50 | ±1.5 | 10 |
| NC504/12 | NC504/15 | NC504 | 200 kHz - 3 GHz | 31 | 50 | ±1.5 | 10 |
| NC505/12 | NC505/15 | NC505 | 200 kHz - 4 GHz | 31 | 50 | ±2.5* | 10 |
| NC506/12 | NC506/15 | NC506 | 200 kHz - 5 GHz | 31 | 50 | ±3.0* | 10 |
| NC511/12 | NC511/15 | N/A | 200 kHz - 500 MHz | 51 | 50 | ±2.0 | 30 |
| NC512/12 | NC512/15 | N/A | 200 kHz - 1 GHz | 51 | 50 | ±2.0 | 30 |
| NC513/12 | NC513/15 | N/A | 200 kHz - 2 GHz | 51 | 50 | ±2.0 | 30 |

2. Add SM for surface mount. Otherwise TO-8 is standard.

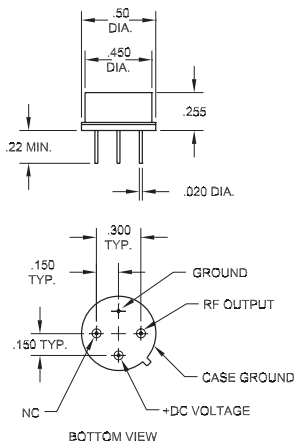
* Flatness ±4.0 for SM Series of these models.

3. Add suffix R for RoHS compliant.

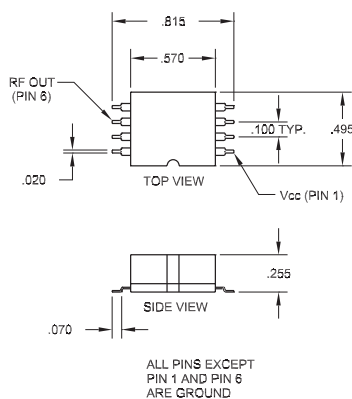
Specifications

| | |
|--------------------------------|--|
| Output | White Gaussian noise |
| Typical power output | 31 dB ENR (-143 dBm/Hz)(NC500 Series) 51 dB ENR (-123 dBm/Hz)(NC510 Series) |
| Crest factor | 5:1 |
| Supply current | 0.2 to 10 mA (NC500 Series) 10 to 30 mA (NC510 Series) |
| Temperature coefficient | 0.01 dB/°C |
| Supply sensitivity | 0.1 dB/% ΔV |
| Operating temperature | 0° C to +70° C (surface mount) -55° C to 85° C (drop-in/through-hole) |
| Storage temperature | -65° to +150° C |
| Packaging | Drop-in or surface mount |
| Power | +12, +15 V or +28 V |
| Absolute maximum input voltage | +30 V for +15 V models +40 V for +28 V models |

NC500 Series Dimensions (inches)



NC500SM Series Dimensions (inches)



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N/NC500/0416/EN
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