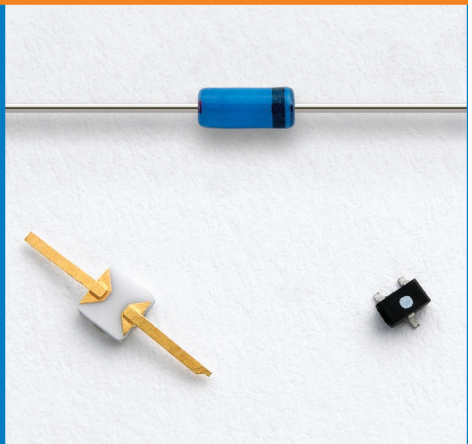




Data Sheet

***NC 100/200/300/400 Series***  
**0.1 Hz to 110 GHz**



***Count on the noise leader***

## Noise Diodes

Noisecom's noise diodes are the fundamental building blocks of all noise systems. They are hand-picked for performance characteristics that make them ideally suited to broadband noise generation with flat response.

All Noisecom noise diodes deliver symmetrical white Gaussian noise and flat output power versus frequency. The diodes are hermetically sealed and available in a wide variety of package styles. Special package configurations or screening processes are available upon request.

The NC100 and NC200 Series diodes are designed for audio and RF applications. The NC300 and NC400 Series diodes are designed for microwave applications in which a 50-ohm impedance is required.

Typical small signal impedance of the NC300 and NC400 Series is 10-20 ohms after a diode is biased. The output level is higher at low frequencies with low currents and driving the diodes with higher current results in greater output at higher frequencies.

## Audio & VHF Types

| Model | Frequency        | Operating Conditions |                 |        | Minimum Output | Package |
|-------|------------------|----------------------|-----------------|--------|----------------|---------|
|       | Range            | V <sub>b</sub> (V)   | I <sub>op</sub> | RL (Ω) | (μV/√Hz)       |         |
| NC101 | 0.1 Hz - 100 kHz | 7 - 10               | 30 - 60 μA      | 2200   | 3.0            | DO-35   |
| NC102 | 0.1 Hz - 500 kHz | 7 - 10               | 30 - 60 μA      | 2200   | 3.0            | DO-35   |
| NC103 | 0.1 Hz - 1 MHz   | 7 - 10               | 30 - 60 μA      | 2200   | 3.0            | DO-35   |
| NC104 | 0.1 Hz - 3 MHz   | 7 - 10               | 30 - 60 μA      | 2200   | 3.0            | DO-35   |
| NC201 | 0.1 Hz - 10 MHz  | 7 - 10               | 0.2 - 0.5 mA    | 2200   | 0.1            | DO-35   |
| NC202 | 0.1 Hz - 25 MHz  | 7 - 10               | 0.2 - 0.5 mA    | 2200   | 0.1            | DO-35   |
| NC203 | 0.1 Hz - 100 MHz | 7 - 10               | 0.2 - 0.5 mA    | 50     | 0.05           | DO-35   |

## RF & Microwave Types

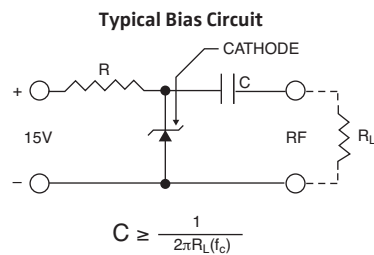
| Model    | Frequency        | Operating Conditions |                      |        | Output   | Package        |
|----------|------------------|----------------------|----------------------|--------|----------|----------------|
|          | Range            | V <sub>b</sub> (V)   | I <sub>op</sub> (mA) | RL (Ω) | ENR (dB) |                |
| NC302L   | 10 Hz - 3 GHz    | 6 - 8                | 6                    | 50     | 30 - 35  | DO-35, BL, CH1 |
| NC302    | 10 Hz - 3 GHz    | 8 - 12               | 8                    | 50     | 30 - 35  | DO-35, BL, CH1 |
| NC303    | 10 Hz - 8 GHz    | 8 - 12               | 8                    | 50     | 30 - 35  | DO-35, BL, CH1 |
| NC303SQ  | 10 Hz - 10 GHz   | 8 - 12               | 8                    | 50     | 30 - 35  | SQ             |
| NC303SOT | 10 Hz - 10 GHz   | 8 - 10               | 8                    | 50     | 30 - 35  | SOT323         |
| NC305    | 10 MHz - 11 GHz  | 8 - 12               | 10                   | 50     | 29 - 34  | BL, CH1        |
| NC401    | 100 MHz - 18 GHz | 8 - 12               | 10                   | 50     | 30 - 35  | C10, C50H, CH2 |
| NC403    | 100 MHz - 27 GHz | 8 - 12               | 12                   | 50     | 24 - 28  | C50, CH3       |
| NC404    | 18 GHz - 50 GHz  | 8 - 12               | 15                   | 50     | 20 - 25  | C50, CH3       |
| NC405    | 18 GHz - 75 GHz  | 8 - 12               | 20                   | 50     | 15 - 25  | C50, CH3       |
| NC406    | 18 GHz - 110 GHz | 8 - 12               | 25                   | 50     | 15 - 25  | C50, CH3       |
| NC407    | 1 GHz - 110 GHz  | 8 - 12               | 15                   | 50     | 15 - 25  | B              |

1. For chip configuration, add suffix "C".

2. For beam lead configuration, add suffix "BL".

## Specifications

|                       |                                                                                             |
|-----------------------|---------------------------------------------------------------------------------------------|
| Output                | White Gaussian Noise                                                                        |
| Operating temperature | 0°C to +55°C temperature for<br>DO-35 and SOT323 Packages<br>-55°C to +125°C for all others |
| Storage temperature   | -65°C to +150°C                                                                             |



For NC100 Series  
R = 150K

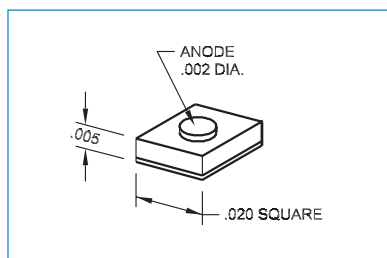
For NC200 Series  
R = 15K

For NC300/400 Series  
R = Adjust for performance

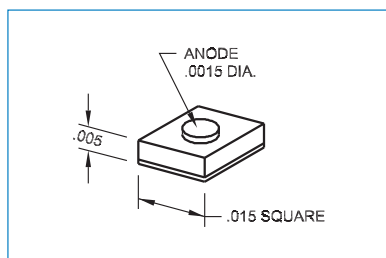
$R_L$  = Load resistor  
For recommended value,  
see charts on reverse page

$f_c$  = low frequency cut-off

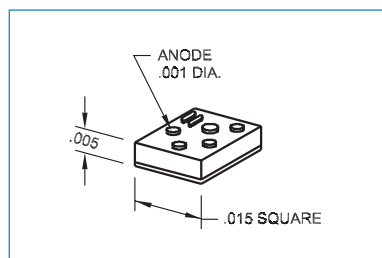
**CH1 Chip (inches)**



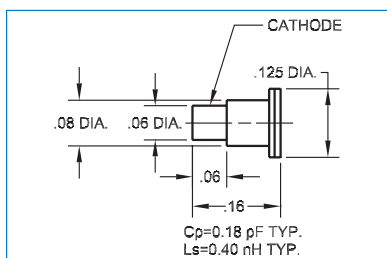
**CH2 Chip (inches)**



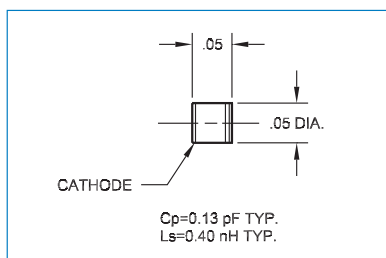
**CH3 Chip (inches)**



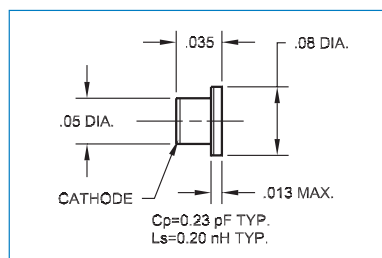
**C10 (inches)**



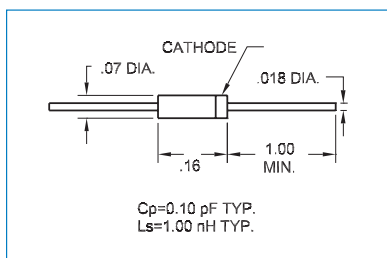
**C50 (inches)**



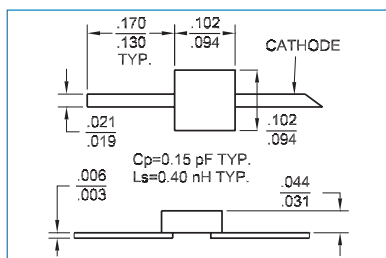
**C50H (inches)**



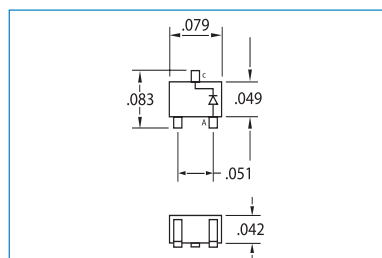
**DO-35 Package (inches)**



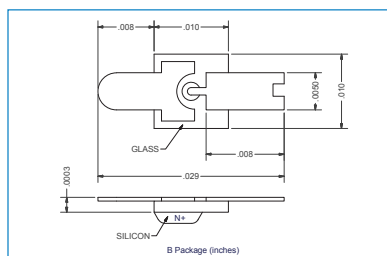
**BL Package (inches)**



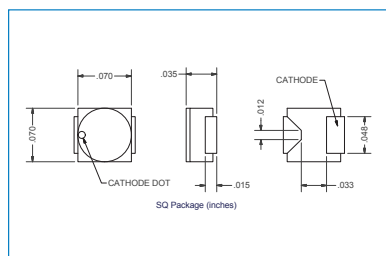
**SOT323 Package (inches)**



**B Package (inches)**



**SQ Package (inches)**



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