

NE602A Double-Balanced Mixer & Oscillator

Description:

The NE602A is a low-power VHF monolithic double-balanced mixer with input amplifier, on-board oscillator, and voltage regulator in a SOP-8 package designed for use in high performance, low power communication systems. The gain, intercept performance, low-power and noise characteristics make the NE602A a superior choice for high-performance battery operated equipment.

Features:

- Low Current Consumption
- Excellent Noise Figure
- High Operating Frequency
- Excellent Gain, Intercept and Sensitivity
- Low External Parts Count; Suitable for Crystal/Ceramic Filters
- Pin2pin compatible NE602A/NE612A/SA602A/SA612A

Applications:

- Cellular Radio Mixer/Oscillator
- Portable Radio
- VHF Transceivers
- RF Data Links
- HF/VHF Frequency Conversion
- Instrumentation Frequency Conversion

Absolute Maximum Ratings:

| | |
|--|----------------|
| Maximum Operating Voltage, V_{CC} | 9V |
| Operating Ambient Temperature Range, T_A | -40° to +85°C |
| Storage Temperature Range, T_{stg} | -65° to +150°C |

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 6\text{V}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-----------------------------|-----------|--|-----|-----|-----|------------|
| Power Supply Voltage Range | V_{CC} | | 4.5 | - | 8.0 | V |
| DC Current Drain | | | - | 2.4 | 2.8 | mA |
| Input Signal Frequency | f_{IN} | | - | 500 | - | MHz |
| Oscillator Frequency | f_{OSC} | | - | 200 | - | MHz |
| Noise Figure at 45MHz | | | - | 5.0 | 6.0 | dB |
| Third-Order Intercept Point | | $RF_{IN} = -45\text{dBm}$: $f_1 = 45.0$, $f_2 = 45.06$ | - | -16 | -17 | dBm |
| Conversion Gain at 45MHz | | | 13 | 16 | - | dB |
| RF Input Resistance | R_{IN} | | 1.5 | - | - | k Ω |
| RF Input Capacitance | C_{IN} | | - | 3.0 | 3.5 | pF |
| Mixer Output Resistance | | Pin4 or Pin5 | - | 1.5 | - | k Ω |

