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NTE7164 **Integrated Circuit** **Double-Balanced Mixer & Oscillator**

Description:

The NTE7164 is a low-power VHF monolithic double-balanced mixer with input amplifier, on-board oscillator, and voltage regulator in an 8-Lead DIP type package designed for use in high performance, low power communication systems. The gain, intercept performance, low-power and noise characteristics make the NTE7164 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

Applications:

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

Absolute Maximum Ratings:

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

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Noise Figure at 45MHz			–	5.0	6.0	dB
Third-Order Intercept Point		$\text{RF}_{\text{IN}} = -45\text{dBm}$: $f_1 = 45.0$, $f_2 = 45.06$	–	–15	–17	dBm
Conversion Gain at 45MHz			14	18	–	dB
RF Input Resistance	R_{IN}		1.5	–	–	$\text{k}\Omega$
RF Input Capacitance	C_{IN}		–	3.0	3.5	pF
Mixer Output Resistance		Pin4 or Pin5	–	1.5	–	$\text{k}\Omega$

Pin Connection Diagram

