

NTE1167 Integrated Circuit Phase Lock Loop (PLL) Frequency Synthesizer

Description:

The NTE1167 consists of a crystal oscillator, 10 bit divider, phase comparator, and a programmable divide-by-N 9-bit counter in a single CMOS 16-Lead DIP type integrated circuit.

This device is designed for use in frequency synthesizers and phase locked loop applications for CB transceivers since it includes a reference frequency selector pin.

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Supply Voltage, $V_{DD} - V_{SS}$ -0.3V to $+7\text{V}$
 Input Voltage, V_{IN} $V_{SS} \leq V_{IN} \leq V_{DD}$
 Power Dissipation, P_D 250mW
 Operating Temperature Range, T_{opr} -30° to $+70^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^\circ\text{C}$
 Lead Temperature (During Soldering, 5sec Max), T_L $+260^\circ\text{C}$

Electrical Characteristics: ($V_{DD} - V_{SS} = 6\text{V}$, $-30^\circ \leq T_A \leq +70^\circ\text{C}$, $f_{in} \bullet Q_{in} = 10.24\text{MHz}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage (All Inputs) Low Level	V_{IL}	Note 1	–	–	0.5	V
High Level	V_{IH}		5.5	–	–	V
Pull-Up Resistance	$R_{UP} \bullet F_S$		–	2.0	0	$\text{M}\Omega$
Pull-Down Resistance	$R_{DN} \bullet P_0 - P_8$		15	75	–	$\text{k}\Omega$
Supply Current	I_{DD}	$V_{DD} = 5.5\text{V}$, $V_{in} \bullet F_{in} = 1V_{P-P}$ Exclude sink current of preset pin	–	5.0	9.0	mA
Output Voltage High Level	$V_{OH} \bullet LD$	$I_{OH} = 0.1\text{mA}$	5.5	–	–	V
Low Level	$V_{OL} \bullet LD$	$I_{OL} = 0.1\text{mA}$	0	–	0.5	V
Output Current High Level	$I_{SAT} \bullet H \bullet D_0$	$V_O = 0\text{V}$	400	–	–	μA
Low Level	$I_{SAT} \bullet L \bullet D_0$	$V_O = 0\text{V}$	400	–	–	μA
Output Voltage	$V_{IF} \bullet F_{in}$	$V_{DD} = 5\text{V}$	1.7	2.2	2.8	V
	$V_{IF} \bullet F_S$		5.5	–	–	V
	$V_{IF} \bullet P_0 - P_8$		–	–	0.5	V
Max Input Frequency	$f_{IN} \bullet \text{Max } Q_{in}$		11	–	–	MHz
	$f_{IN} \bullet \text{Max } F_{in}$		3.3	–	–	MHz
Max Free Running Frequency	$f_{FR} \bullet \text{Max } F_{IN}$		3.5	–	–	MHz
Operating Voltage	V_{DD}		5.0	–	6.5	V

Note 1. All inputs refers to pins P_0 to P_8 , F_S , F_{in} , and Q_{in} . This parameter defines their input levels at DC coupling.

Pin Connection Diagram

