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## NTE1192 Integrated Circuit VCO for Phase Lock Loop (PLL)

**Description:**

The NTE1192 is a Phase-Locked Loop Frequency Synthesizer packaged in a 9-lead SIP type package.

**Features:**

- Double Balanced Mixer
- Emitter Follower Circuit
- Differential Amplifier
- Wide Operating Supply Voltage Range

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

Supply Voltage, $V_{CC}$ .....	10V
Pin6 Supply Voltage, $V_6$ .....	14V
Pin1 Supply Voltage, $V_9$ .....	201
Power Dissipation, $P_D$ .....	600mW
Derated Above $25^\circ\text{C}$ .....	4.8mW/ $^\circ\text{C}$
Operating Temperature Range, $T_{opr}$ .....	$-30^\circ$ to $+75^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-55^\circ$ to $+150^\circ\text{C}$

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 7V$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current	$I_{CC}$		21.5	–	38.0	mA
Pin6 Supply Current	$I_6$		3.0	–	5.5	mA
Pin9 Maximum Supply Current	$I_{9(MAX)}$	Pin7 GND	6	–	12	mA
Output Power	$P_O$	$V_9 = 12V$	6	10	–	mW
Differential Amplifier Input Impedance		$f = 27\text{MHz}$	–	1.0	–	$k\Omega$
Pin7 Parallel Input Resistance	$R_{ip7}$					
Pin7 Parallel Input Capacitance	$C_{ip7}$		–	6.5	–	pF
Differential Amplifier Output Impedance		$V_9 = 12V, f = 27\text{MHz}$	–	4.0	–	$k\Omega$
Pin9 Parallel Output Resistance	$R_{op9}$					
Pin9 Parallel Output Capacitance	$C_{op9}$		–	4.0	–	pF

**Electrical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 7\text{V}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Doubly Balanced Mixer Input Impedance Pin4 Parallel Input Resistance	$R_{ip4}$	$f = 10\text{MHz}$	–	1.5	–	$\text{k}\Omega$
Pin4 Parallel Input Capacitance	$C_{ip4}$		–	4.3	–	$\text{pF}$
Doubly Balanced Mixer Output Impedance Pin6 Parallel Output Resistance	$R_{op6}$	$f = 27\text{MHz}$	–	3.5	–	$\text{k}\Omega$
Pin6 Parallel Output Capacitance	$C_{op6}$		–	6.0	–	$\text{pF}$

**Pin Connection Diagram**  
(Front View)

