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NTE1849
Integrated Circuit
Frequency Synthesizer for TV Tuning Systems

Description:

The NTE1849 is a CMOS frequency synthesizer for TV tuning systems consisting of a 13–bit programmable divider, 12–bit divider and phase comparator circuits.

Absolute Maximum Ratings: (V_{SS} = 0V, T_A = +25°C unless otherwise specified)

Supply Voltage, V_{DD} . . . . . –0.3 to +9V
Input Voltage, V_I . . . . . –0.3 to V_{DD} +0.3V
Output Voltage, V_O . . . . . –0.3 to V_{DD} +0.3V
Operating Temperature Range, T_{opr} . . . . . –20° to +70°C
Storage Temperature Range, T_{stg} . . . . . –55° to +100°C

Operating Conditions: (V_{SS} = 0V, T_A = 0° to +70°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{DD}		6.5	7.0	7.5	V

Electrical Characteristics: (V_{DD} = 7V, V_{SS} = 0V, T_A = 0° to +70°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current	I_{DD}	T_A = +25°C, V_{DD} = 7V, without load	–	–	15	mA
Total Power Dissipation	P_{tot}		–	–	105	mW
Input Terminal (LFI)						
Maximum Input Signal Frequency	$f_{i(max)}$	Input Sine Wave,	15.6	–	–	MHz
Input Voltage Swing	V_i	Free Running LFI	0.7	–	–	V_{p-p}
Input Current	$I_{I(1)}$	V_I = V_{SS} to V_{DD}	–50	–	+50	µA
Input Terminal (PI0 to PI3, LDI)						
“H” Level Input Voltage	V_{IH}		3.4	–	V_{DD}	V
“L” Level Input Voltage	V_{IL}		V_{SS}	–	0.8	V
Input Current	$I_{I(2)}$	V_I = V_{SS} to V_{DD}	–10	–	+10	µA

Electrical Characteristics (Cont'd): (V_{DD} = 7V, V_{SS} = 0V, T_A = 0° to +70°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Terminal (PDO)						
"H" Level Output Current	$I_{OH(1)}$	V_O = 5V	–0.8	–	–	mA
"L" Level Output Current	$I_{OL(1)}$	V_O = 2V	0.8	–	–	mA
Output Leakage Current	I_{Leak}	V_O = 1/2 V_{DD}	–0.03	–	+0.03	µA
OutputTerminal (TMO)						
"H" Level Output Voltage	$V_{OH(1)}$	I_{OH} = –0.05mA	6.0	–	–	V
"L" Level Output Voltage	$V_{OL(1)}$	I_{OL} = 0.1mA	–	–	0.4	V
Output Terminal (CKO)						
"H" Level Output Voltage	$V_{OH(2)}$	I_{OH} = –0.4mA	6.0	–	–	V
"L" Level Output Voltage	$V_{OL(2)}$	I_{OL} = 0.16mA	–	–	0.4	V
Oscillator Terminal (QI, QO)						
Oscillation Frequency	f_{OSC}		–	3.58	–	MHz
Capacitance						
Input Capacitance	C_I	V_I = 2V	–	5	–	pF
Output Capacitance	C_O	V_O = 2V	–	7	–	pF

Pin Connection Diagram