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NTE7069 Integrated Circuit 2 Modulus High Speed Divider ^w/ECL Output for Phase-Lock Loop (PLL) Synthesized TV Tuner

Description:

The NTE7069 is an integrated circuit consisting of a 1/128, 1/136 prescaler, high speed frequency divider using an ECL (emitter-coupled logic) circuit configuration in an 8-Lead SIP type package. When the clocks are applied to the pulse swallow control input terminal, M, the dividing ratio is 1/136, and when M is stable ("H" or "L"), the ratio is 1/128. This device operates in the frequency range of 80MHz to 1000MHz. Typical applications for the NTE7069 include prescalers for PLL (Phase Lock Loop) TV tuners and general use in consumer and industrial digital equipment.

Features:

- High-Speed Operation: $f_{max} = 1\text{GHz}$
- Operates at Low Input Amplitudes: -20dB Min
- ECL Level Output: $1.30V_{P-P}$ Typ

Absolute Maximum Ratings: ($T_A = -20^\circ$ to $+75^\circ\text{C}$ unless otherwise specified)

Supply Voltage, V_{CC} -0.3 to $+7V$
 Input Voltage (T, $\bar{T}_{(REF)}$), V_I 0 to V_{CC}
 Power Dissipation ($T_A = +25^\circ\text{C}$), P_D $1.15W$
 Operating Temperature Range, T_{opr} -20° to $+75^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^\circ\text{C}$

Recommended Operating Conditions: ($T_A = -20^\circ$ to $+75^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		4.5	5.0	6.6	V
Input Amplitude	V_{IN}	$f_{IN} = 80$ to 1000MHz	-20	-	4	dBm

Electrical Characteristics: ($V_{CC} = 5V \pm 10\%$, $T_A = -20^\circ$ to $+75^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Supply Current	I_{CC}	$V_{CC} = 5.5V$, $T_A = +25^\circ C$	–	33	50	mA	
Input Sensitivity	V_{IN}	$f_{IN} = 80$ to $1000MHz$	–20	–	4	dBm	
Output Amplitude	V_O	$V_{CC} = 4.5V$, $f_{IN} = 80$ to $1000MHz$	0.9	1.3	1.7	V_{P-P}	
High Level Input Voltage	V_{IH}	M Terminal, Note 2	$0.7V_{CC}$	–	–	V	
Low Level Input Voltage	V_{IL}		–	–	$0.3V_{CC}$	V	
High Level Input Current	I_{IH}		$V_{CC} = -5V$, $V_{IH} = 3.5V$	–	–	50	μA
Low Level Input Current	I_{IL}		$V_{CC} = -5V$, $V_{IL} = 1.5V$	–	–	–160	μA

Note 1. Typical values are at $V_{CC} = 5V$, $T_A = +25^\circ C$.

Note 2. Input conditions of pulse swallow control input terminal M:

Dividing Ratio	Input Conditions	Description
1/136		When the clocks are applied to M terminal as shown in the left figure, the dividing ratio changes from 1/128 to 1/136
1/128	$V_{IL} = 0V$, $V_{IN} = V_{CC}$ or $V_{IN} = OPEN$	M terminal is stable at GND or V_{CC} , or opened

