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NTE1745 Integrated Circuit High Speed Divider 1/20, 1/100 for VCR

Description:

The NTE1745 is a semiconductor integrated circuit in an 8-Lead SIP type package consisting of a built-in 1/20 and 1/100 high-speed frequency divider featuring an ECL circuit configuration.

Features:

- High-Speed Operation ($f_{max} = 130\text{MHz}$)
- Operation at Low Input Amplitudes (180mV_{p-p} Minimum Input Amplitude)
- TTL Level Output

Applications:

FM radio prescalers, digital equipment for consumer and industrial applications

Function:

This divider is based on an ECL circuit configuration. When a frequency up to a maximum of 130MHz is applied to the T_1 input pin, 1/20-divided output is produced when the division ratio selection input pin (M) is low-level or a 1/100-divided output is produced when the division ratio selection input pin (M) is high-level. The output (T_O) is available in the TTL level open collector format.

Absolute Maximum Ratings: ($T_A = -10^\circ$ to $+75^\circ\text{C}$ unless otherwise specified)

Supply Voltage, V_{CC}	9V
Input Signal Voltage, V_I	$1.5V_{p-p}$
Output Signal Voltage, V_O	5.5V
Power Dissipation ($T_A = +25^\circ\text{C}$), P_D	1.33W
Operating Temperature Range, T_{opr}	-10° to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+125^\circ\text{C}$

Electrical Characteristics: ($T_A = -10^\circ$ to $+75^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		4.5	5	5.5	V
Low-Level Output Current	I_{OL}		-	-	5	mA
Input Frequency	f_{IN}	$T_A = +25^\circ\text{C}$	30	-	130	MHz
High Input Voltage (M Input)	$V_{IH(M)}$		2.6	-	V_{CC}	V
Low Input Voltage (M Input)	$V_{IL(M)}$		0	-	0.4	V
Input Signal Voltage	V_i	$T_A = +25^\circ\text{C}$	180	-	800	mV _{p-p}
Circuit Current	I_{CC}	$V_{CC} = 5\text{V}$	-	6.5	-	mA
Low-Level Output Voltage	V_{OL}	$V_{CC} = 4.5\text{V}, I_{OL} = 5\text{mA}$	-	-	0.5	V
Minimum Operating Frequency	f_{max}	$V_{CC} = 5\text{V}, T_A = +25^\circ\text{C}, V_{IN} = 180\text{mV}_{p-p}$	130	-	-	MHz
High Input Current (M Input)	$I_{IH(M)}$	$V_{CC} = 5\text{V}, V_{IH(M)} = 2.6\text{V}$	-	2	-	μA
Low Input Current (M Input)	$I_{IL(M)}$	$V_{CC} = 5\text{V}, V_{IL(M)} = 0.4\text{V}$	-	0.1	-	μA
Output Leakage Current	$I_{O(Leak)}$	$V_{CC} = 5\text{V}, V_O = 5.5\text{V}$	-	-	100	μA

Pin Connection Diagram
(Front View)

