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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} = 130MHz)
- Operation at Low Input Amplitudes (180m$V_{p–p}$ 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_I 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° to +75°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°C), P_D 1.33W
Operating Temperature Range, T_{opr} . . . . . –10° to +75°C
Storage Temperature Range, T_{stg} . . . . . –55° to +125°C

Electrical Characteristics: (T_A = –10° to +75°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°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°C	180	–	800	$mV_{p–p}$
Circuit Current	I_{CC}	V_{CC} = 5V	–	6.5	–	mA
Low–Level Output Voltage	V_{OL}	V_{CC} = 4.5V, I_{OL} = 5mA	–	–	0.5	V
Minimum Operating Frequency	f_{max}	V_{CC} = 5V, T_A = +25°C, V_{IN} = 180$mV_{p–p}$	130	–	–	MHz
High Input Current (M Input)	$I_{IH(M)}$	V_{CC} = 5V, $V_{IH}(M)$ = 2.6V	–	2	–	µA
Low Input Current (M Input)	$I_{IL(M)}$	V_{CC} = 5V, $V_{IL}(M)$ = 0.4V	–	0.1	–	µA
Output Leakage Current	$I_{O(Leak)}$	V_{CC} = 5V, V_O = 5.5V	–	–	100	µA

Pin Connection Diagram
(Front View)