NTE ELECTRONICS, INC.
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NTE1409 & NTE1409N
Integrated Circuit
Electronic Channel Selector

Description:

The NTE1409 is an electronic channel selector integrated circuit in a 24–Lead DIP type package capable of selecting up to 16 channels. The output terminals are design to permit direct driving of LEDs or neon tubes.

It consists of a Clock Oscillator circuit, a Channel Up and Down circuit, a Channel skip circuit, a 4 bit Up and Down Counter circuit, a 1–16 Decoder circuit and a 16 channel Output Buffer circuit.

Features:

- LED Direct Drive
- Low Power Consumption
- Up to 16 Channel Selections
- Internal Schmitt Trigger Circuit
- Power ON Initial Channel Set
- TV, Radio, etc. Channel Selection Use.
- Can be Used with NTE1758 Direct Address Remote Control System

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Supply Voltage, V_{CC} 15V
Input Current to Channel Selection Circuit, $I_{K1–11}$, $I_{K20–24}$ . . . . . –5mA to 50mA
Input Current to Control Circuit, $I_{C15–19}$ . . . . . –5mA to 10mA
Input Current to Control Circuit, I_{C13} . . . . . –5mA to 20mA
Output Voltage to Channel Selection Circuit (V_{CC} = 12V), $V_{K1–11}$, $V_{K20–24}$ . . . . . –0.5V to 50V
Output Voltage to Control Circuit (V_{CC} = 12V), V_{13} . . . . . –0.5V to 14.4V
Input Voltage to Control Circuit (V_{CC} = 12V), V_{17} . . . . . –0.5V to V_{CC}
Power Dissipation, P_D 350mW
Operating Temperature Range, T_{opt} . . . . . –20° to +75°C
Storage Temperature Range, T_{stg} . . . . . –40° to +125°C

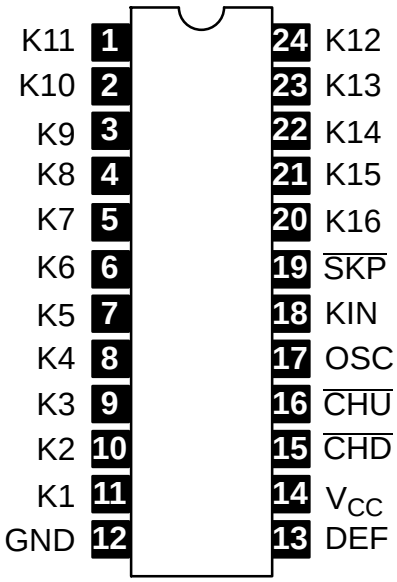
Recommended Operating Conditions: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		9.6	12.0	14.4	V
Channel Selection Input Current	I_K		–	15	–	mA
Clock Oscillation Frequency	f_{OSC}		–	2	10	kHz

Electrical Characteristics: (T_A = +25°C ±3°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current	I_{DD}	V_{CC} = 12V	7	15	22	mA
Channel Selection Saturation	$V_{OL(K)}$	V_{CC} = 9.6V, I_{OL} = 15mA	–	–	150	mV
Channel Selection Leakage Current	$I_{OH(K)}$	V_{CC} = 14.4V, V_{OH} = 35V	–	–	10	µA
AFT Defeat Output Voltage	$V_{OL(D)}$	V_{CC} = 9.6V, I_{OL} = 12mA	–	–	6	V
AFT Defeat Leakage Current	$I_{OH(D)}$	V_{CC} = 14.4V, V_{OH} = 14.4V	–	–	10	µA
Channel Input High Threshold Voltage	$V_{TH(CH)}$	V_{CC} = 12V, R_J = 15kΩ	3.5	–	7.0	V
Channel Input Low Threshold Voltage	$V_{TL(CH)}$		1.5	–	2.5	V
Channel Input Leakage Current	$I_{CH(CH)}$	V_{CC} = 14.4V, V_{IL} = 0V	–5	–	–	µA
Key Input Current	$I_{IH(KI)}$	V_{CC} = 9.6V	200	–	–	µA
Key Input Leakage Current	$I_{IL(KI)}$	V_{CC} = 14.4V, V_{IL} = 0V	–10	–	–	µA
Skip Input Current	$I_{IH(SK)}$	V_{CC} = 9.6V	50	–	–	µA
Skip Input Leakage Current	$I_{IL(SK)}$	V_{CC} = 14.4V, V_{IL} = 0V	–5	–	–	µA
OSC Input Current	$I_{IH(OSC)}$	V_{CC} = 9.6V, V_{IH} = 4V	1.5	–	3.0	mA
OSC Input Leakage Current	$I_{IL(OSC)}$	V_{CC} = 14.4V, V_{IL} = 1V	–	–	10	µA
OSC Frequency	f_{OSC}	V_{CC} = 12V, R = 68kΩ, C = 0.022µF	1.5	–	2.5	kHz

Pin Connection Diagram



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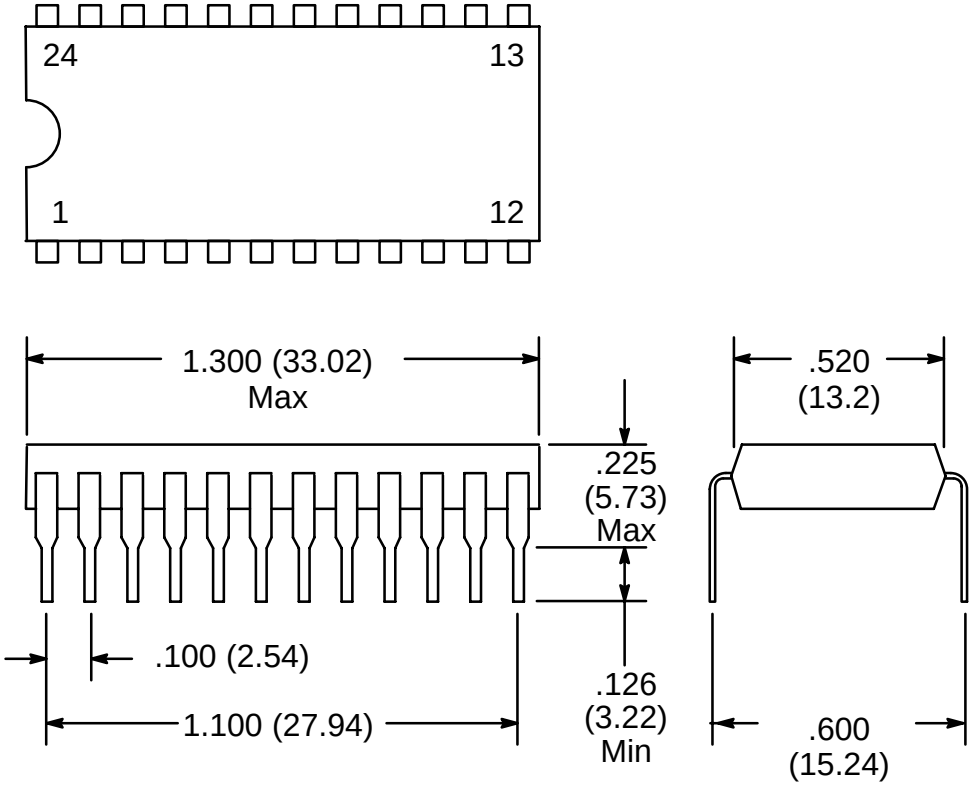

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