

NTE1764 Integrated Circuit Infrared Preamplifier

Description:

The NTE1764 is an infrared preamplifier in a 14-Lead DIP type package and contains four main parts: the gain-controlled amplifier I, the amplifier II, the pulse-separating amplifier III, and the inverter IV. The amplifier I has a wide dynamic range and thus ensures interference free operation, also at bright ambient light, 50Hz modulated light originating from fluorescent lamps, or at intensive infrared light, e.g. produced by infrared sound transmission. It is also possible, to approach almost directly the remote-control transmitter to the receiver without producing misfunction by overdriving the receiver.

The amplifier II further amplifies the signal, and amplifier III separates the pulse-shaped intelligence signal from noise and other unwanted parts. The inverter IV provided additionally inverts the output signal available at Pin7 as negative pulse, and thus delivers positive output pulses at Pin8. If an additional resistor is inserted between Pin6 and GND, the noise-immunity is increased, but the input sensitivity decreased. Pin10 serves as test pin and must not be connected.

The capacitor connected from Pin2 to GND influences the automatic gain control of amplifier I contained in the NTE1764. A capacitance of less than 1 μ F will cause misfunction in the distance range of 0.2, to 2m.

Absolute Maximum Ratings: (Note 1)

Supply Voltage, V_3 6V
Ambient Operating Temperature Range, T_A -20° to +65°C
Storage Temperature Range, T_S -30° to +125°C

Recommended Operating Conditions: (Note 1)

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_3	4.5	5.0	5.5	V

Electrical Characteristics: ($V_3 = 5V$, $T_A = +25^\circ C$, Note 1)

Parameter	Symbol	Min	Typ	Max	Unit
Current Consumption	I_2	–	1	2	mA
Gain Between Pin14 & Pin7	G	70	–	–	dB
Output Resistance Pin7 & Pin8, formed by the Pull-Up of an NPN Transistor	R_O	–	20	–	k Ω
Output Low Voltage Pin7 & Pin8 at $I_{OL} = 1.6mA$	V_{OL}	–	0.4	0.8	V
IR Transmission Range using the SAA1250 IR Transmitter IC and a Transmission Current Amplitude of 1.5A, and One Transmitter Diode (NTE3017)	L1	–	12	–	m
Two Transmitter Diodes (NTE3017)	L2	–	19	–	m
Three Transmitter Diodes (NTE3017)	L3	–	20	–	m

Note 1. All voltages are referred to GND (Pin1, Pin9, and Pin13).

Pin Connection Diagram

