ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE941D
Integrated Circuit
Operational Amplifier

Description:

The NTE941D is a general purpose operational amplifier in a 14–Lead DIP type package and offers many features which make its application nearly foolproof: overload protection on the input and output, no latch–up when the common mode range is exceeded, as well as freedom from oscillators.

Absolute Maximum Ratings:

Supply Voltage, V_S . . . . ±18V
Differential Input Voltage, V_{ID} . . . . ±30V
Common Mode Input Voltage (Note 2), V_{ICM} . . . . ±15V
Power Dissipation (Note 1), P_D 500mW
Output Short–Circuit Duration, t_S . . . . Continuous
Operating Temperature Range, T_{opr} . . . . 0° to +70°C
Storage Temperature Range, T_{stg} . . . . –65° to +150°C
Junction Temperature, T_J . . . . +100°C
Lead Temperature (During Soldering, 10sec), T_L . . . . +260°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . +100°C/W

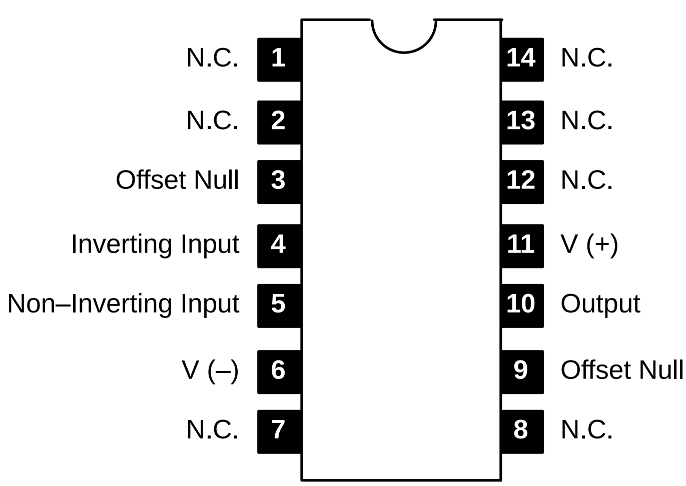
Note 1. For operation at elevated temperatures, these devices must be derated based on thermal resistance, and T_J Max ($T_J = T_A + (R_{thJA}\ P_D)$).

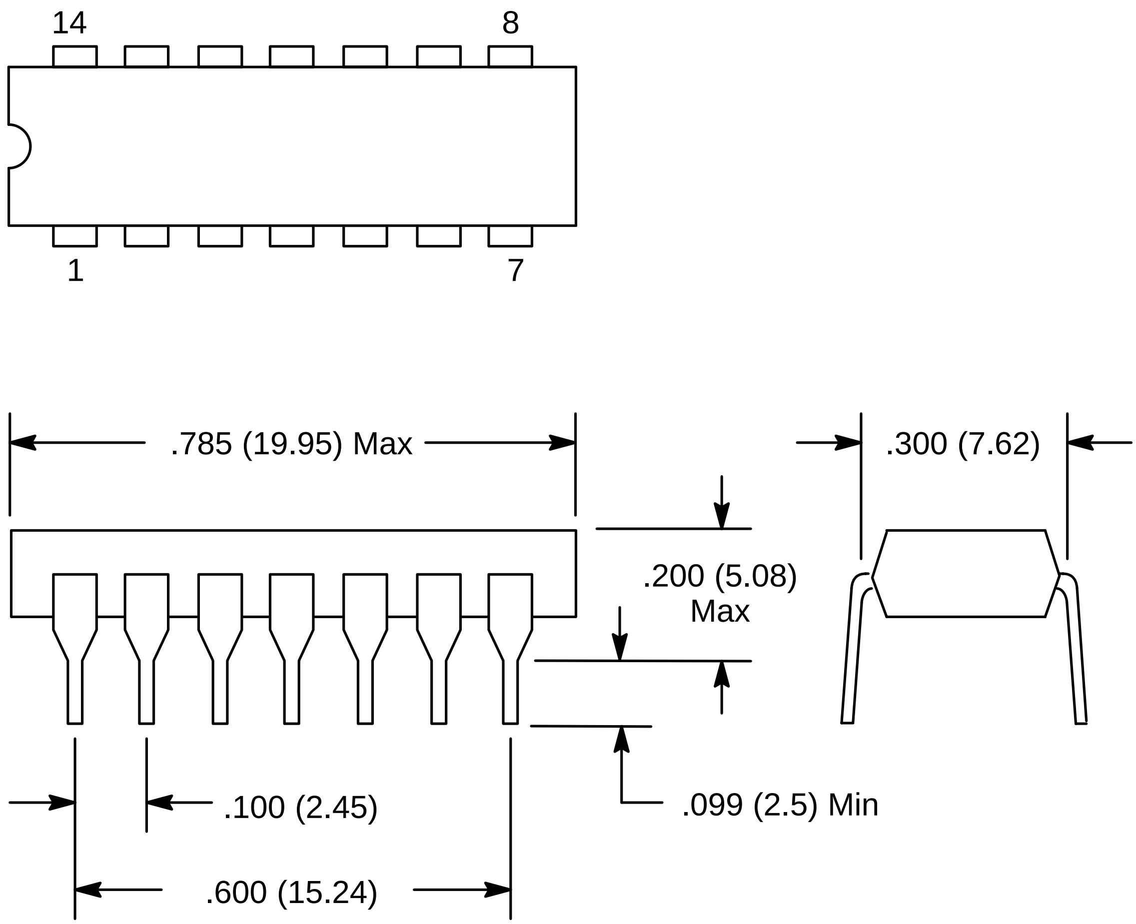
Note 2. For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

Electrical Characteristics: (V_S = ±15V, 0° ≤ T_A ≤ +70°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Input Offset Voltage	V_{IO}	R_S ≤ 10kΩ	T_A = +25°C	–	2.0	6.0	mV
				–	–	7.5	mV
Input Offset Voltage Adjustment Range	V_{IOR}	V_S = ±20V, T_A = +25°C		–	±15	–	V
Input Offset Current	I_{IO}	T_A = +25°C		–	20	200	nA
				–	–	300	nA
Input Bias Current	I_{IB}	T_A = +25°C		–	80	500	nA
				–	–	0.8	µA
Input Resistance	r_i	V_S = ±20V, T_A = +25°C		0.3	2.0	–	MΩ
Common Mode Input Voltage Range	V_{ICR}	T_A = +25°C		–	±12	±13	V
Large Signal Voltage Gain	A_V	V_O = ±10V, R_L ≥ 2kΩ	T_A = +25°C	20	200	–	V/mV
				15	–	–	V/mV
Output Voltage Swing	V_O	R_L ≥ 10kΩ		±12	±14	–	V
		R_L ≥ 2kΩ		±10	±13	–	V
Output Short–Circuit Current	I_{OS}	T_A = +25°C		–	25	–	mA
Common–Mode Rejection Ratio	CMRR	R_S ≤ 10kΩ, V_{CM} = ±12V		70	90	–	dB
Supply Voltage Rejection Ratio	PSRR	V_S = ±20V to ±5V, R_S ≤ 10kΩ		77	96	–	dB
Transient Response Rise Time	t_{TLH}	T_A = +25°C, Unity Gain		–	0.3	–	µs
Transient Response Overshoot	os			–	5	–	%
Transient Response Slew Rate	SR			–	0.5	–	V/µs
Supplu Current	I_D	T_A = +25°C		–	1.7	2.8	mA
Power Consumption	P_C	T_A = +25°C		–	50	85	mW

Pin Connection Diagram




14
8
1
7
.785 (19.95) Max
.300 (7.62)
.200 (5.08)
Max
.100 (2.45)
.099 (2.5) Min
.600 (15.24)