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NTE725
Integrated Circuit
Dual Low Noise Preamp/OP Amp

Description:

The NTE725 consists of two identical high−gain operational amplifiers constructed on a single chip. These 3−stage amplifiers use Class A PNP transistor output stages with uncommitted collectors. This enables a variety of loads to be employed for general purpose applications from DC to 10MHz, where two high performance operation amplifiers are required. In addition, the outputs may be wired−OR for use as a dual comparator or they may function as diodes in low thershold rectifying circuits such as absolute value amplifiers, peak detectors, etc.

Features:

- Single or Dual Supply Operation
- Low Power Consumption
- High Gain
- Large Common Mode Range: +11V, −13V
- Excellent Gain Stability vs. Supply Voltage
- No Latch−Up
- Output Short Circuit Protected

Absolute Maximum Ratings:

Supply Voltage	±18V
Internal Power Dissipation	650mW
Differential Input Voltage	±5V
Input Voltage (Note 1)	±15V
Output Short Circuit Duration (T_A = +25°C, Note 2)	30sec
Operating Temperature Range	0° to +70°C
Storage Temperature Range	−55° to +125°C
Lead temperature (During Soldering, 60sec)	+260°C

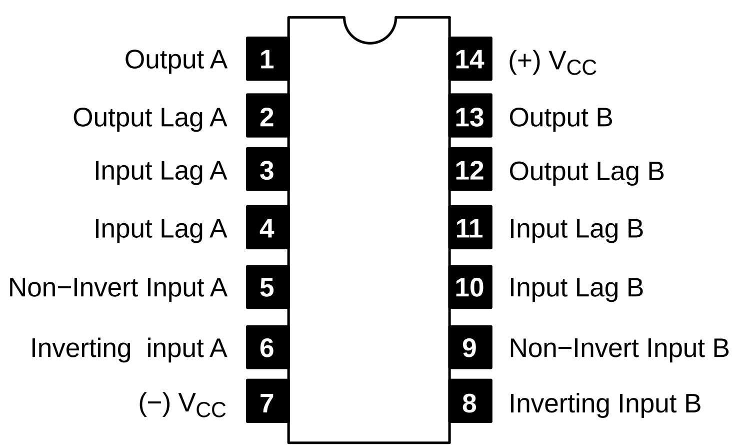
Note 1. For supply voltages less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

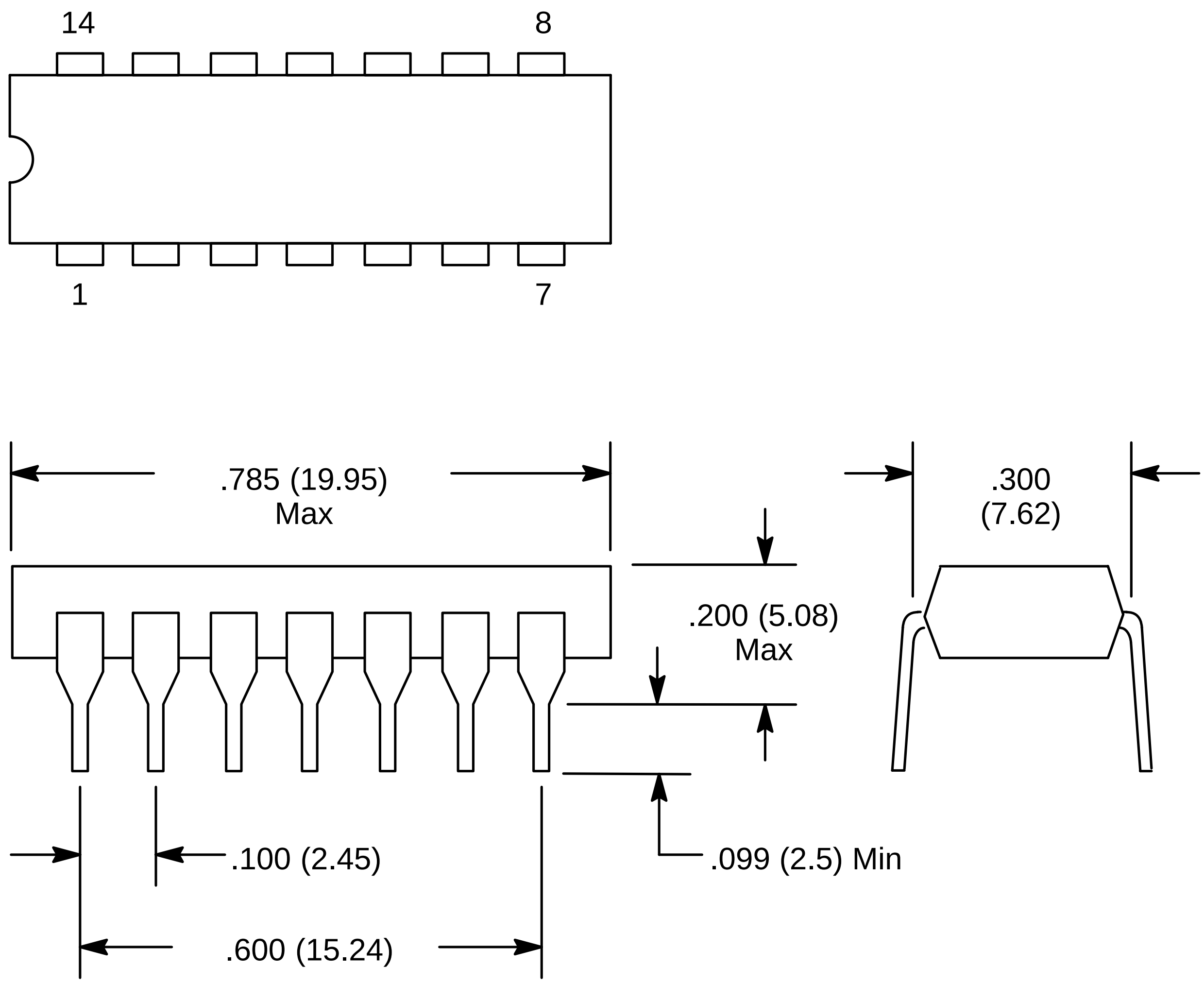
Note 2. Short circit may be to GND or either supply.

Electrical Characteristics: (T_A = +25°C, V+ = ±15V, R_L = 5kΩ to Pin7 unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Input Offset Voltage	R_S = 200Ω	–	1.0	6.0	mV
	V+ = ±4V, R_L = 10kΩ to Pin7, R_S = 200Ω	–	1.0	6.0	mV
Input Offset Current		–	50	1000	nA
	V+ = ±4V, R_L = 10kΩ to Pin7	–	50	1000	nA
Input Bias Current		–	0.3	2.0	µA
	V+ = ±4V, R_L = 10kΩ to Pin7	–	300	–	µA
Input Resistance		37	150	–	kΩ
Large Signal Voltage Gain	V_{OUT} = ±10V	6.5k	20k	–	V/V
	V+ = ±4V, R_L = 10kΩ to Pin7, V_{OUT} = ±2V	2.5k	15k	–	V/V
Positive Output Voltage Swing		+12	+13	–	V
	V+ = ±4V, R_L = 10kΩ to Pin7	+2.5	+2.8	–	V
Negative Output Voltage Swing		−14	−15	–	V
	V+ = ±4V, R_L = 10kΩ to Pin7	−3.6	−4.0	–	V
Output Resistance	f = 1kHz	–	5.0	–	kΩ
Common Mode Rejection Ratio	R_S = 200Ω, V_{IN} = +11.5v to −13.5V	70	90	–	dB
Supply Voltage Rejection Ratio	R_S = 200Ω	–	50	–	µV/V
Input Voltage Range		−10	–	+11	V
Internal Power Dissipation	V+ = ±4V, R_L = 10kΩ to Pin7, V_{OUT} = 0	–	20	–	mW
Supply Current	V_{OUT} = 0	–	9	14	mA
	V+ = ±4V, R_L = 10kΩ to Pin7, V_{OUT} = 0	–	2.5	–	mA
Broadband Noise Figure	R_S = 10kΩ, BW = 10Hz to 10kHz	–	2.0	–	dB
Turn−On Delay	Open Loop, V_{IN} = ±20mV	–	0.2	–	µs
Turn−Off Delay	Open Loop, V_{IN} = ±20mV	–	0.3	–	µs
Slew Rate (Unity Gain)	C_1 = 0.02µF, R_1 = 33Ω, C_2 = 10pF	–	1.0	–	V/µs
Channel Separation	R_S = 1kΩ, f = 10kHz	–	140	–	dB

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)