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NTE911
Integrated Circuit
Dual Voltage Comparator

Description:

The NTE911 is a dual, differential voltage comparator in a 10–Lead Metal Can type package featuring high accuracy, fast response times, large input voltage range, low power consumption and compatibility with practically all integreated logic forms. When used as a sense amplifier, the threshold voltage can be adjusted over a wide range, almost independent of the integrated circuit characteristics. Independent strobing of each comparator channel is provided, and pulse stretching on the output is easily accomplished. Other applications of the dual comparator include a window discriminator in pulse height detectors and a double–ended limit detector for automatic Go/No–Go test equipment.

Features:

- Fast Response Time – 40ns Typical
- 5mV Maximum Offset Voltage
- 10μA Maximum Offset Current
- Independent Comparator Strobing

Absolute Maximum Ratings:

Positive Supply Voltage . . . . . +14V
Negative Supply Voltage . . . . . –7.0V
Peak Output Current 50mA
Differential Input Voltage . . . . . ±5.0mA
Input Voltage . . . . . ±7.0V
Strobe Voltage . . . . . 0 to +6.0V
Internal Power Dissipation ($T_A \leq +70°C$) 500mW
Derate Linearly Above +70°C . . . . . 6.3mW/°C
Operating Temperature Range . . . . . 0° to +70°C
Strobe Temperature Range . . . . . –65° to +150°C
Lead Temperature (During Soldering, 10sec) . . . . . +260°C

Electrical Characteristics: (T_A = 25°C, V+ = 12V, V– = –6.0V unless otherwise specified)

Parameter	Test Conditions		Min	Typ	Max	Unit
Input Offset Voltage	V_{OUT} = +1.4V, $R_S \leq 200\Omega$	V_{CM} = 0	–	1.0	5.0	mV
			–	1.0	7.5	mV
	$R_S \leq 200\Omega$, T_A = 0° to +70°C Note 1	V_{CM} = 0	–	–	6.0	mV
			–	–	10	mV

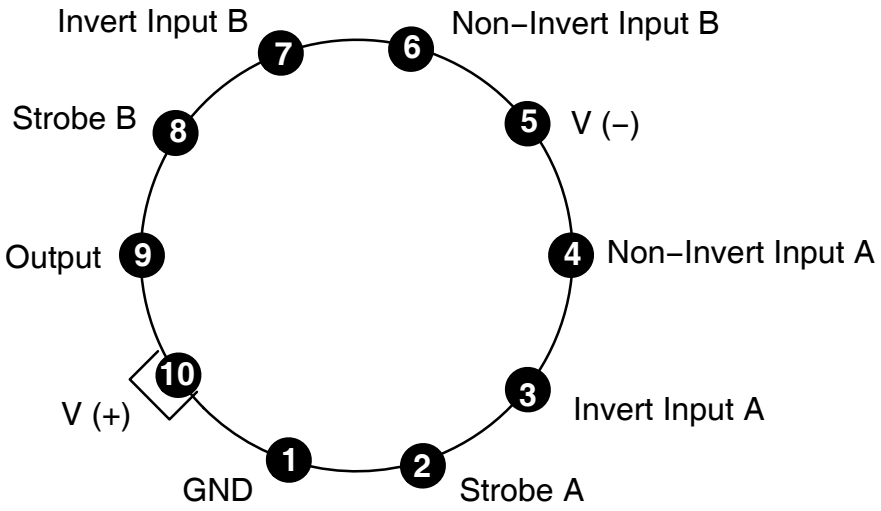
Note 1 The input offset voltage is specified for a logic threshold as follows:
1.5V at 0°C, 1.4 at +25°C, 1.2V at +70°C

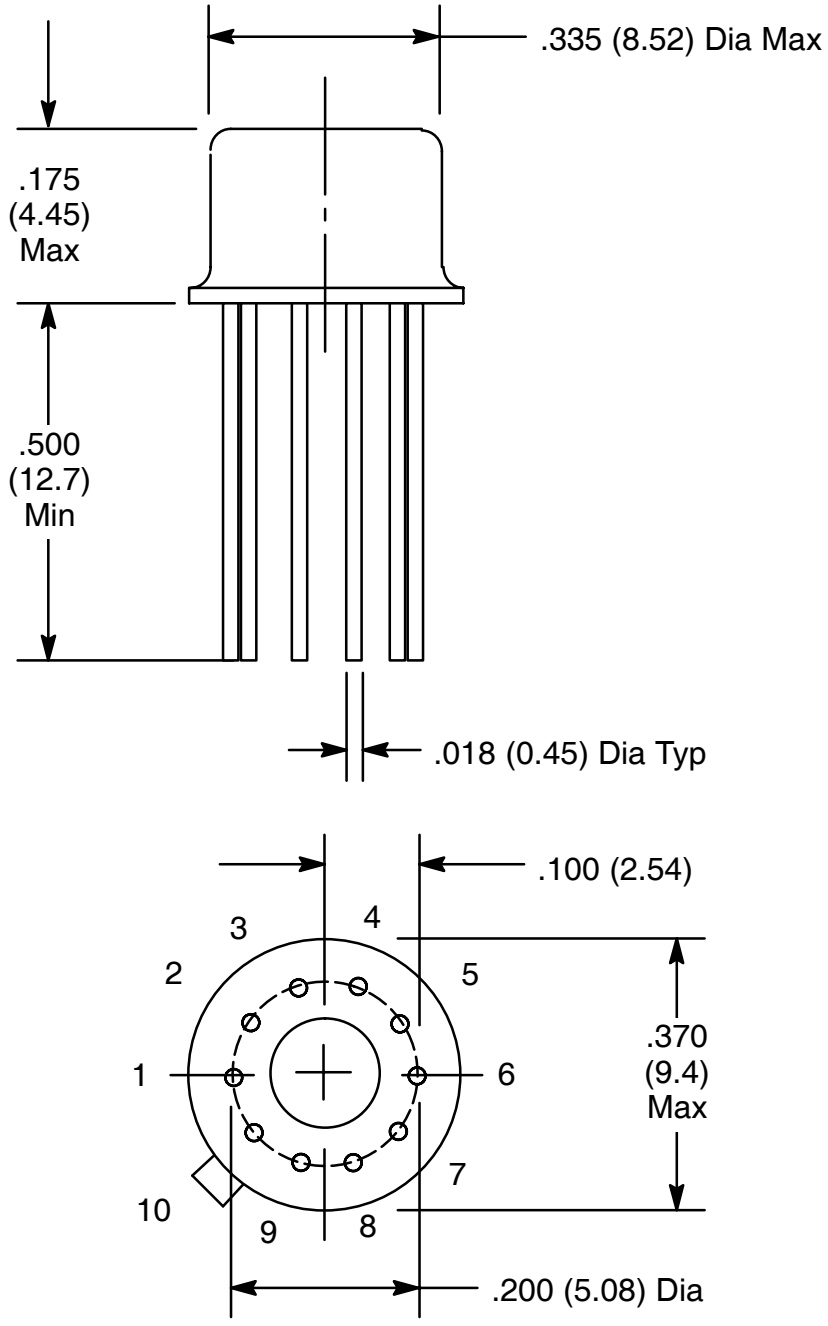
Parameter	Test Conditions		Min	Typ	Max	Unit
Input Offset Current	Note 1	V_{OUT} = +1.4V	–	0.5	15	µA
	Note 1	T_A = 0° to +70°C	–	–	25	µA
Input Bias Current			–	25	100	µA
	T_A = 0° to +70°C		–	–	150	µA
Voltage Gain			700	1500	–	
	T_A = 0° to +70°C		500	–	–	
Response Time	Note 2		–	40	–	ns
Strobe Release Time			–	12	–	ns
Input Voltage Range	V = –7V		±5	–	–	V
Differential Input Voltage Range			±5	–	–	V
Output Resistance			–	200	–	Ω
Output HIGH Voltage	$V_{IN} \geq$ 10mV		–	4.5	5.0	V
Loaded Output HIGH Voltage	$V_{IN} \geq$ 10mV, I_O = 5mA		2.5	3.5	–	V
Output LOW Voltage	$V_{IN} \geq$ 10mV		–1.0	–0.5	0	V
Strobed Output Level	$V_{STROBE} \leq$ 0.3V		–1.0	–	0	V
Output Sink Current	$V_{IN} \geq$ 10mV, $V_{OUT} \geq$ 0		0.5	0.8	–	mA
Strobe Current	V_{STROBE} = 100mV		–	1.2	2.5	mA
Positive Supply Current	V_{OUT} = GND, Inverting Input = +10mV			8.6	–	mA
Negative Supply Current	V_{OUT} = GND, Inverting Input = +10mV		–	3.9	–	mA
Power Consumption			–	130	230	mW
Temperature Coefficient of Input Offset Voltage	T_A = 0° to +70°C		–	5.0	–	µV/°C

Note 1 The input offset voltage is specified for a logic threshold as follows: 1.5V at 0°C, 1.4 at +25°C, 1.2V at +70°C

Note 2. The response time specified is for a 100mV step input with 5mV overdrive.

Pin Connection Diagram
(Top View)




.335 (8.52) Dia Max
.175
(4.45)
Max
.500
(12.7)
Min
.018 (0.45) Dia Typ
.100 (2.54)
1
2
3
4
5
6
7
8
9
10
.370
(9.4)
Max
.200 (5.08) Dia