ELECTRONICS, INC.
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NTE1580
Integrated Circuit
IF Amp & Detector

Description:

The NTE1580 is an IF amplifier in a 14–Lead DIP type package with a symmetrical FM demodulator and an AF amplifier with adjustable output voltage. The AF amplifier is also provided with an output for volume control and an input for VCR operation.

The input and output of the NTE1580 are especially designed for LC–circuits, but the input can also be used with a ceramic filter.

Absolute Maximum Ratings:

Maximum Supply voltage (Pin11, Note 1), $V_p = V_{11–1}$ 18V
Maximum Adjustment Voltage (Pin5), $V_{5–1}$ 6V
Maximum Total Power Dissipation, P_{tot} 400mW
Bypass Resistance, $R_{13–14}$ 1kΩ
Operating Ambient Temperature Range, T_A . . . . . –15° to +70°C
Storage Temperature Range, T_{stg} . . . . . –40° to +125°C

Note 1. Supply voltage operating range is 10V to 18V

Electrical Characteristics: (V_P = 12V, T_A = +25°C, f = 5.5MHz unless otherwise specified)

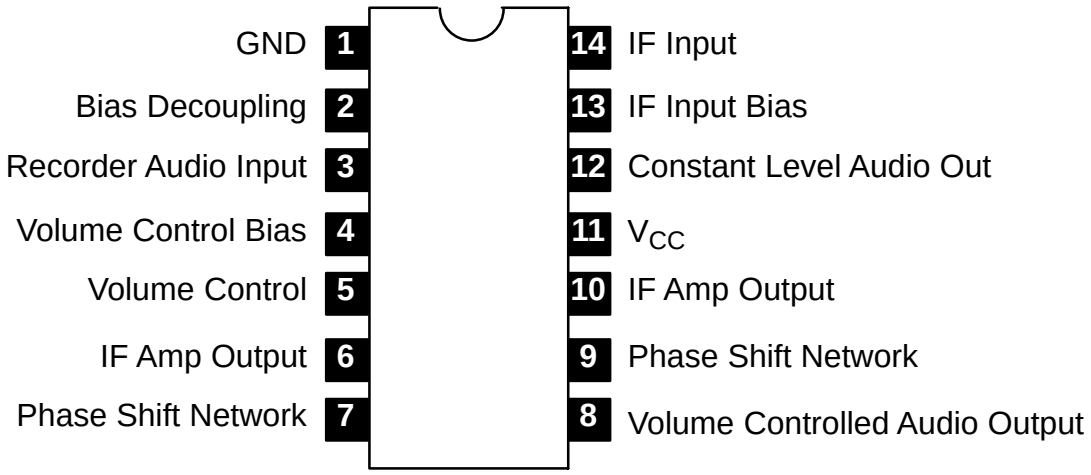
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
IF Voltage Gain	$G_{V\ IF6–14}$		–	68	–	dB
Input Voltage Starting Limiting	V_i	$\Delta f = \pm 50kHz$, f_m = 1kHz	–	30	60	μV
IF Output Voltage at Limiting (Peak–to–Peak)	$V_{O\ IF(p–p)}$		–	250	–	mV
AM Suppression	α	$\Delta f = \pm 50kHz$, V_i = 500μV, f_m = 1kHz, m = 30%	50	60	–	dB
IF Residual Voltage Without De–Emphasis Pin12	V_{IF12}		–	30	–	mV
Pin8	V_{IF8}		–	20	–	mV
AF Voltage Gain	$G_{V\ AF8–3}$		–	7.5	–	
AF Adjustment	$\Delta V_{O(AF)}$	$R_{4–5}$ = 5kΩ, $R_{5–1}$ = 13kΩ	20	28	36	dB
AF Output Voltage Control Range	$\Delta V_{O(AF)}$		70	85	–	dB
Adjustment Resistor	$R_{4–5}$	Note 2	1 to 10			kΩ
DC Voltage Portion at the AF Outputs Pin12	$V_{12–1}$		–	5.6	–	V
Pin8	$V_{8–1}$		–	4.0	–	V

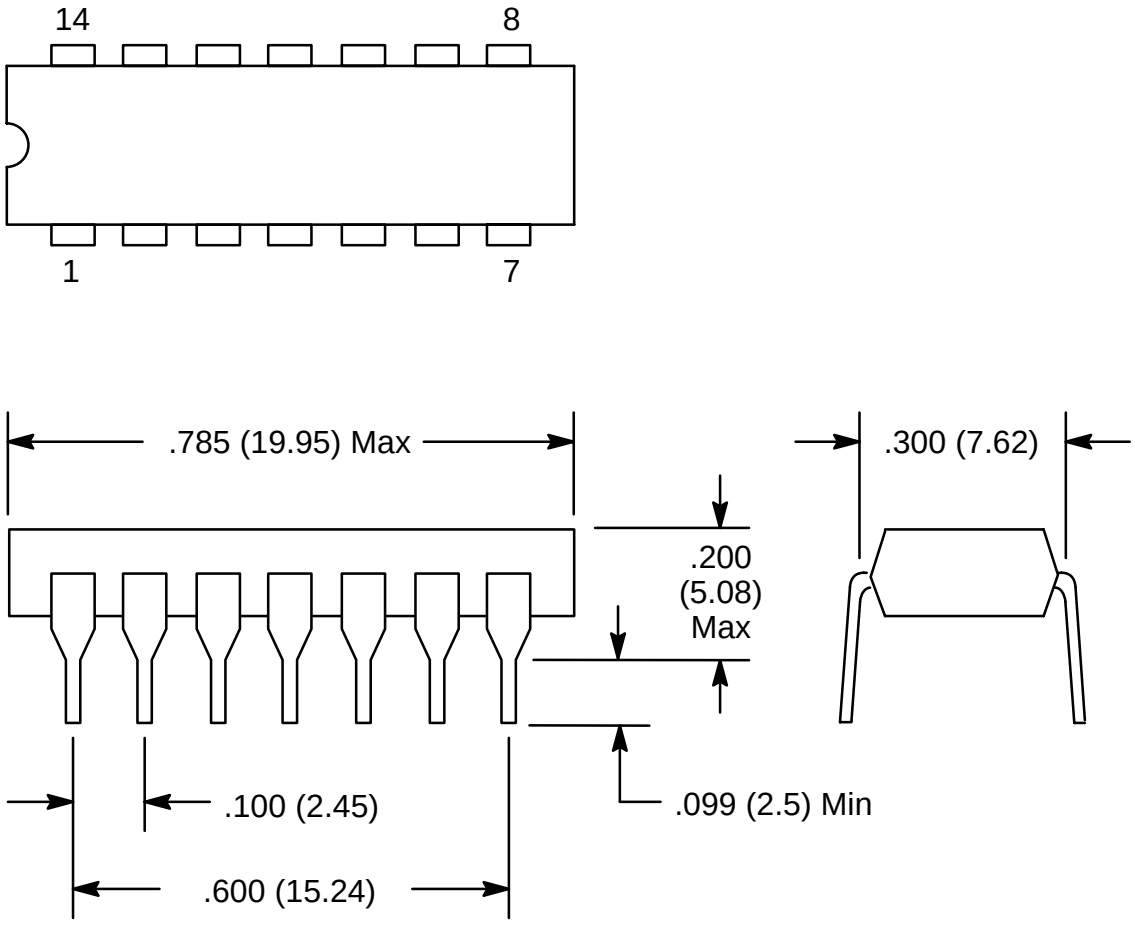
Note 2. Pin5 must be connected to Pin4, when volume control adjustment is not applicable.

Electrical Characteristics (Cont'd): (V_P = 12V, T_A = +25°C, f = 5.5MHz unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Resistance of the AF outputs Pin12	R_{O12-1}		–	1.1	–	kΩ
Pin8	R_{O8-1}		–	1.1	–	kΩ
Input Resistance of the AF Input	R_{I3-1}		–	2.0	–	kΩ
Stabilized Reference Voltage	$V_{4-1} = V_{ref}$		4.2	4.8	5.3	V
Source Resistance of Reference Voltage Source	R_{4-1}		–	12	–	Ω
Hum Suppression Pin12	V_{12}/V_{11}		–	30	–	dB
Pin8	V_8/V_{11}		–	35	–	dB
Supply Current (Pin11)	$I_P = I_{11}$		9.5	13.5	17.5	mA
IF Input Impedance	$\|Z_i\|$	4.5pF	–	40	–	kΩ
		6.0pF	15	–	–	kΩ
AF Output Voltage Pin12	$V_{OAF(rms)}$	$\Delta f = \pm 50kHz$, $V_i = 10\mu V$, $f_m = 1kHz$, $Q_O = 45$	–	1.0	–	V
Pin8			–	1.2	–	V
Distortion	d_{tot}	$\Delta f = \pm 50kHz$, $V_i = 10\mu V$, $f_m = 1kHz$, $Q_O = 20$	–	1.0	–	%

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)