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

NTE1761 (Active High) & NTE1762 (Active Low)
Integrated Circuit
Infrared Remote Control Preamp

Features:
- High Frequency Amplifier with a Control Range of 66dB
- Synchronous Demodulator and Reference Amplifier
- AGC Detector
- Pulse Shaper
- Q–Factor Killing of the Input Selectivity, which is Controlled by the AGC Circuit
- Input Voltage Limiter

Absolute Maximum Ratings:

Supply Voltage (Pin8), V_{CC} 13.2V
Output Current Pulse Shaper (Pin11), I_{11} 10mA
Voltages Between Pins (Note 1)
Pin2 and Pin15, $V_{2–15}$ 4.5V
Pin4 and Pin13, $V_{4–13}$ 4.5V
Pin5 and Pin6, $V_{5–6}$ 4.5V
Pin7 and pin10, $V_{7–10}$ 4.5V
Pin9 and Pin11, $V_{9–11}$ 4.5V
Operating Ambient Temperature Range, T_A . . . . . –25° to +125°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C

Note 1. All pins except Pin11 are short–circuit protected.

DC Electrical Characteristics: (T_A = +25°C, V_{CC} = V_8 = 5V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply (Pin8)						
Supply Voltage	V_{CC}		4.65	5.0	5.35	V
Supoply Current	$I_{CC} = I_8$		1.2	2.1	3.0	mA
Controlled High Frequency Amplifier (Pin2 and Pin15)						
Minimum Input Signal (Peak–to–Peak)	$V_{2–15(P–P)}$	f = 36kHz, Note 2	–	15	25	μV
		f = 36kHz, Note 3	–	–	5	μV
AGC Control Ragne (Without Q–Killing)			60	66	–	dB
Input Signal for Correct Operation (Peak–to–Peak)	$V_{2–15(P–P)}$	Note 3	0.02	–	200	mV
Q–Killing Inactive (Peak–to–Peak)	$V_{2–15(P–P)}$	$I_3 = I_{14} < 0.5μA$	–	–	140	μV
Q–Killing Active (Peak–to–Peak)	$V_{2–15(P–P)}$	$I_{14} = I_3$ = Max	28	–	–	mV

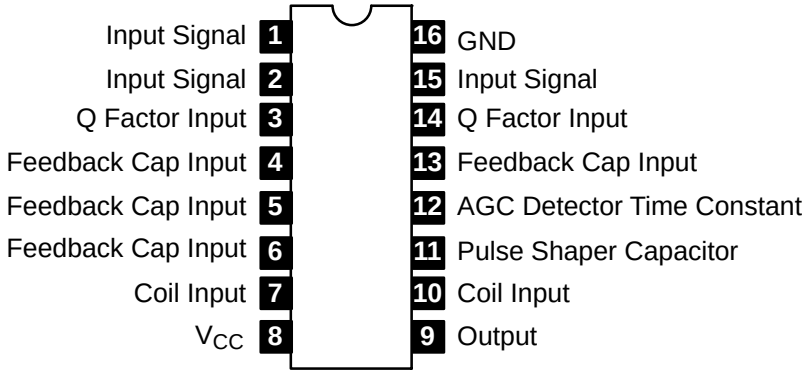
Note 2. For NTE1761, voltage at Pin9 is HIGH ($–I_9$ = 75μA).
For NTE1762, voltage at Pin9 is LOW (I_9 = 75μA).
Note 3. For NTE1761, voltage at Pin9 remains LOW. For NTE1762, voltage at Pin9 remains HIGH.

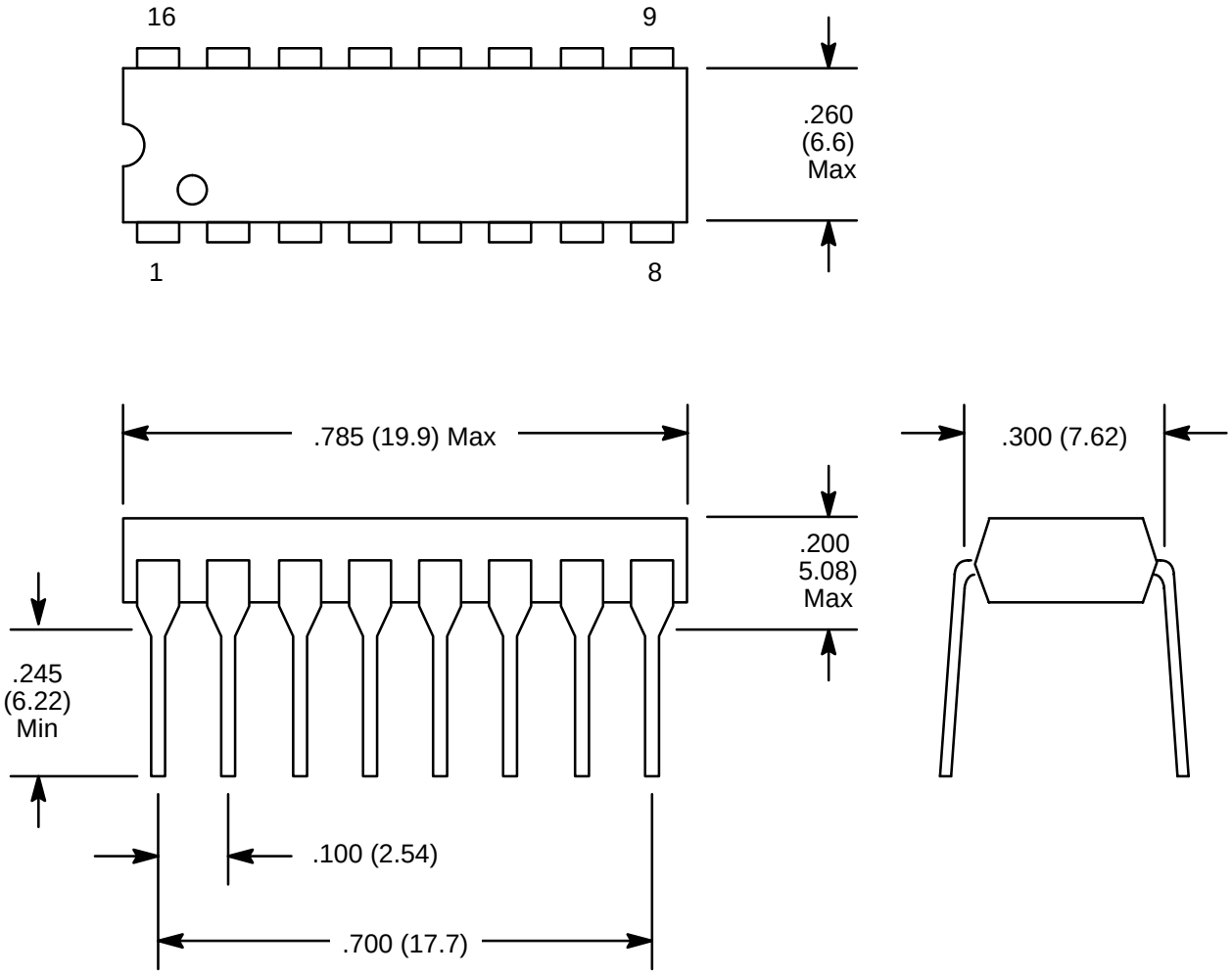
DC Electrical Characteristics (Cont'd): (T_A = +25°C, V_{CC} = V_8 = 5V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Inputs						
Pin2 Voltage	V_2		2.25	2.45	2.65	V
Pin15 Voltage	V_{15}		2.25	2.45	2.65	V
Pin2 Resistance	$R_{2–15}$		10	15	20	kΩ
Pin2 Capacitance	$C_{2–15}$		–	3	–	pF
Input Limiting, Pin1	$V_{1–16}$	I_1 = 3mA	–	0.8	0.9	V
Outputs						
Output Voltage HIGH (Pin9)	$–V_{9–8}$	$–I_9$ = 75µA	–	0.1	0.5	V
Output Voltage LOW (Pin9)	V_9	I_9 = 75µA	–	0.1	0.5	V
Output Current, Output Voltage HIGH	$–I_9$	V_9 = 4.5V	75	120	–	µA
		V_9 = 3.0V	75	130	–	µA
		V_9 = 1.0V	75	140	–	µA
Output Current, Output Voltage LOW	I_9	V_9 = 0.5V	75	120	–	µA
Output Resistance Between Pin7 and Pin10	$R_{7–10}$		3.1	4.7	6.2	kΩ
Pulse Shaper (Pin11)						
Trigger Level in Positive Direction	V_{11}	Voltage Pin9 changes from HIGH to LOW	3.75	3.9	4.05	V
Trigger Level in Negative Direction	V_{11}	Voltage Pin9 changes from LOW to HIGH	3.4	3.55	3.7	V
Hysteresis of Trigger Levels	ΔV_{11}		0.25	0.35	0.45	V
AGC Detector (Pin12)						
AGC Capacitor Charge Current	$–I_{12}$		3.3	4.7	6.1	µA
AGC Capacitor Discharge Current	I_{12}		67	100	133	µA
Q–Factor Killer (Pin3 and Pin14)						
Output Current (Pin3)	$–I_3$	$V_{12–16}$ = 2V	2.5	7.5	15	µA
Output Current (Pin14)	$–I_{14}$	$V_{12–16}$ = 2V	2.5	7.5	15	µA

Note 4. Undistorted output pulse with 100% AM input.

Pin Connection Diagram




16
9
1
8
.260
(6.6)
Max
.785 (19.9) Max
.300 (7.62)
.200
5.08)
Max
.245
(6.22)
Min
.100 (2.54)
.700 (17.7)