ELECTRONICS, INC.
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NTE1469
Integrated Circuit
Video IF & AFT

Functions:
- PIF Amplifier
- Video Detector
- AFS with Defeat
- Noise Canceller
- Forward AGC

Features:
- SAW Filter Connectable Without Preamp
- Input Sensitivity: V_{in} = 50μV_{rms} Typ.
- Output Peak–to–Peak Voltage at Video Detector Adjustable Externally.
- High S/N under Weak–Input Signal

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Supply Voltage, V_{CC} 15V
Input Voltage, V_{in} . . . . . $5V_{p–p}$
Power Dissipation (T_A = +75°C), P_T 625mW
Operating Temperature, T_{opr} . . . . . –20° to +75°C
Storage Temperature, T_{stg} . . . . . –40° to +125°C

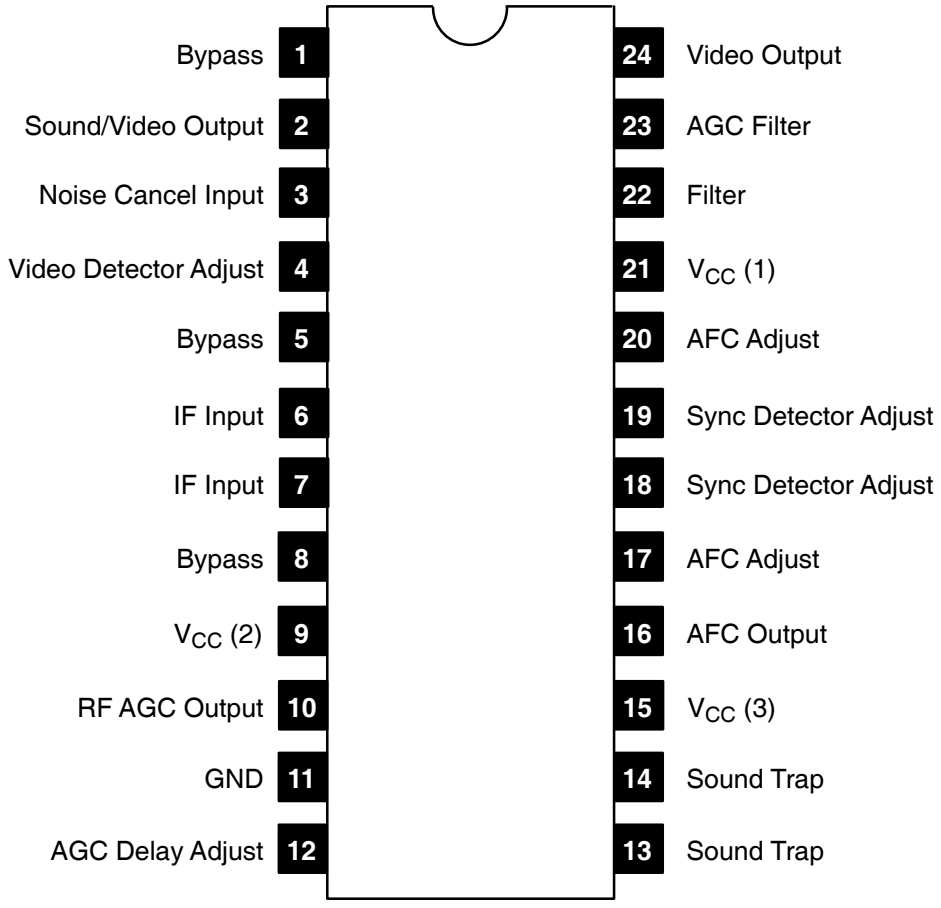
Electrical Characteristics: (V_{CC} −12V, T_A = 25°C, unless otherwise specified)

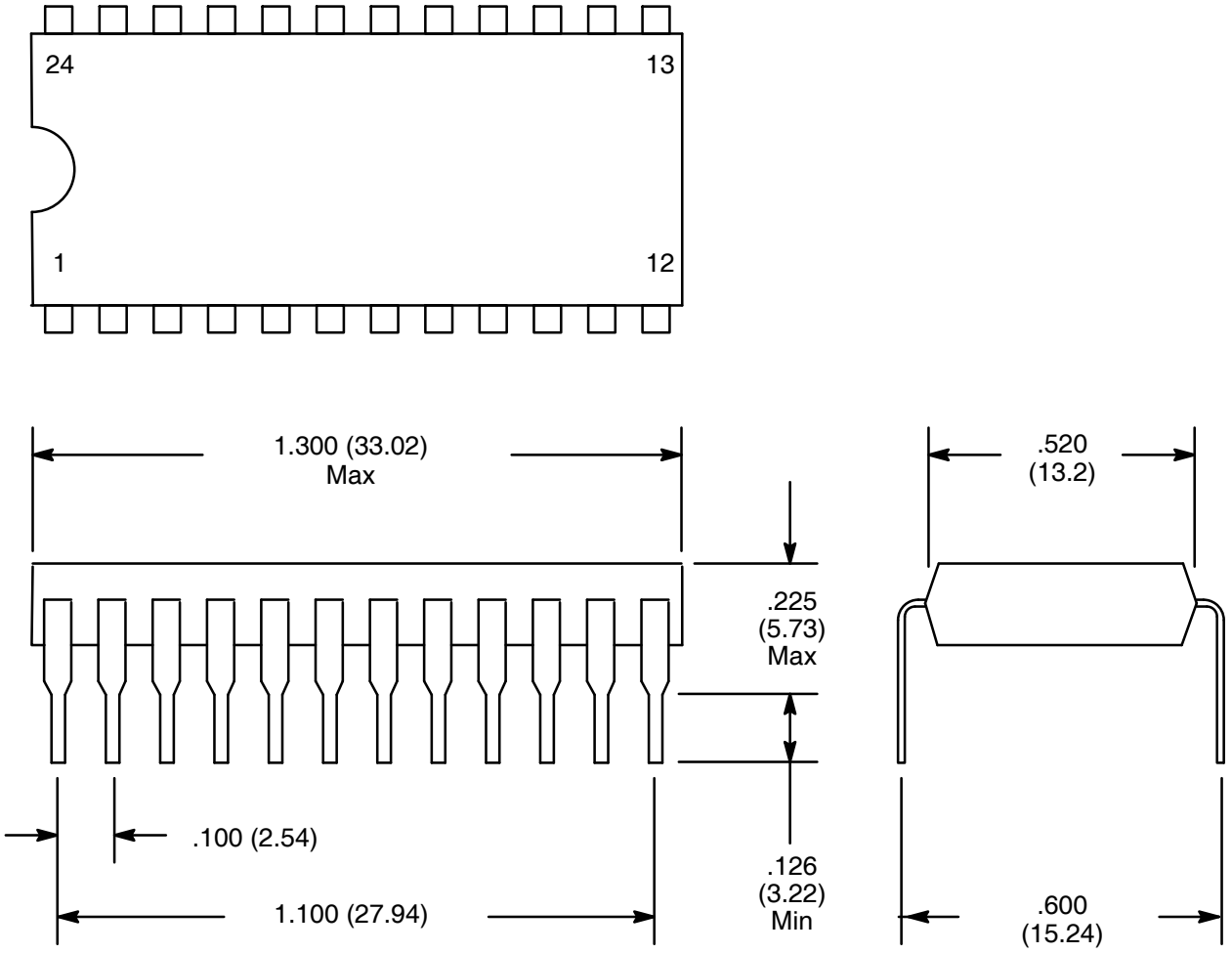
Item	Symbol	Test Conditions		Min	Typ	Max	Unit
Supply Current	I_{CC}	No signal input	Pin 21	21.0	27.0	34.5	mA
			Pin 9	22.0	25.5	28.4	
Input Sensitivity	V_{in}	V_{out} = 1.35V_{P-P} (Pin 24)		25	50	100	μV_{rms}
AFC Output Voltage at No Signal Input	V_{16}	$V_{C(AFC)}$ = 0, V_{15} = 1V		5.4	6.5	7.7	V
		$V_{in(AFC)}$ = 0, V_{15} = 0		–	4.5	–	
Signal−to−noise Ratio	S/N	V_{in} = 3mV_{rms} (no demodulation) S/N = 20log V_{out}/V_n (Pin 2)		–	53	–	V
Max. Input Voltage	V_{in} max	V_{13-14} = 80mV_{rms}, DG = 1dB		–	12	–	mV_{rms}
Output Carrier−Zero DC Voltage	V_W	V_{in} = 0, V_{22} = 1.8V		4.5	5.8	7.0	V
Sync Tip Voltage	V_p	V_{in} = 3mV_{rms}, m = 75%	Pin 2	3.9	4.1	4.3	V
			Pin 24	7.35	7.7	8.05	
Differential Voltage between Pin 14 and Pin 13	$V_{14,13}$	Input Voltage: 80μV_{rms} ~ 16mV_{rms} C.W. DC Voltage between Pin 14 and Pin 13 Measure $V_{14,13}$		−10	0	+10	mV
Max, Video Output Voltage	V_{2M}	Voltage between Pin 14 and Pin 13: 300mV_{rms} C.W. V_{22} = 1.8V, Measure DC Voltage at Pin 2		–	–	2.5	V
Video Frequency Response	f_B	V_{in}: modulation of video sweep. 3mV_{rms} Standardizing the output voltage at 100kH_Z Pin 2	2MH_Z	–	0	–	dB
			4MH_Z	–	0	–	
			6MH_Z	–	+1.5	–	
Supply Voltage for IF Block	V_9	V_{CC} = 12V, R_3 = 180Ω, DC voltage at Pin 9 connecting V_{CC} through 180Ω	V_{in} = 0	6.4	7.4	7.9	V
			V_{in} = 3mV_{rms}	5.8	6.4	7.0	
Small Signal Video Amp. Gain	A_{AC}	Input Signal at Pin 3: 10kH_Z, 0.1V_{P-P} plus 4.5V bias, Measure AC gain to Pin 24		−1.5	−0.7	0	dB
Video Amp. DC Transfer Ratio	A_{DC}	Input Voltage at Pin 3: 4V DC Voltage at Pin 24		7.25	7.6	7.95	V
Video Amp. Bandwidth	B_v	Input Signal at Pin 3: 0 ~ 20MH_Z Sweep: 0.1V_{P-P} + 4.5V, Frequency when voltage at Pin 24 goes down 3dB		8	–	–	MH_Z
Noise Canceller Threshold Voltage	V_{NS1}	Input Signal Waveform 1 is applied to Pin 3. V_{NS} means V_N at Pin 3 when the pulse peak at Pin 24 begins to rise up		0.3	0.5	0.7	V
Noise Canceller Clamp Voltage	V_{NC}	Input Signal Waveform 1 is applied to Pin 3. V_{NC} at Output Signal Waveform 1 of Pin 24 when V_N = 1V		0.45	0.7	0.95	V
AFC Detector Sensitivity	μ_{AFC}	f_o = 58.75MH_Z, $V_{in(AFC)}$ = 14mV_{rms}, V_{CC} = 12V, ΔV = 10V (1 ~ 11V)		–	–	200	$\frac{kH_Z}{10V}$

Electrical Characteristics (Cont'd): (V_{CC} −12V, T_A = +25°C, unless otherwise specified)

Item	Symbol	Test Conditions		Min	Typ	Max	Unit
AFC Output Voltage for Deviation of Input Frequency	V_{AFC}	V_{CC} = 12V, f_o = 58.75MHz, $V_{in(AFC)}$ = 5mV$_{rms}$	f_o + 2.0MHz	2.0	–	–	V
			f_o + 1.5MHz	1.0	–	–	
			f_o + 0.7MHz	–	–	1.0	
			f_o ± 0MHz	–	6.0	–	
			f_o – 0.7MHz	11.0	–	–	
			f_o – 1.5MHz	–	–	11.0	
			f_o – 2.0MHz	–	–	10.0	
Noise Figure	F_I	Voltage at Pin 12 is fixed, V_{in} = 3mV$_{rms}$		–	6.0	–	dB
IF Input Impedance	Z_{in}	Either Pin 6 or Pin 7 is grounded, Pin 12: 8.0V	C_{in}	30	40	50	pF
			R_{in}	70	100	140	Ω

Pin Connection Diagram




24
13
1
12
1.300 (33.02)
Max
.225
(5.73)
Max
.100 (2.54)
1.100 (27.94)
.126
(3.22)
Min
.520
(13.2)
.600
(15.24)