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NTE1551 Integrated Circuit TV Video IF Amp

Features:

- High density one chip integration of vide IF amplifier, video detector, video preamplifier, AGC and AFC circuits. With this IC, compact set designing is possible.
- High performance by built-in phase compensation type synchronous detector circuit.
- As AFC using double balanced phase comparator, the influence to video detection is little.
- Forward RF AGC and reverse RF AGC output pins are attached

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Supply Voltage, V_{CC}	13.8V
Circuit Voltage. V_{3-Fin} , V_{5-Fin} , V_{6-Fin} , V_{7-Fin}	V_{11-Fin} to 0V
Circuit Current, I_{12}	+1 to -10mA
Circuit Current, I_4	0 to -10mA
Power Dissipation, P_D	1100mW
Operating Temperature Range, T_{opt}	-20° to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

Note *. “+” and “-” are flow-in and flow-out currents to/from the circuit.

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Detector Output (Video)	V_O	Mod. = 87.5%	1.7	2.0	2.3	V_{p-p}
Input Sensitivity	$S_{(IN)}$	$V_O = -3\text{dB}$	-	46	-	$\text{dB}\mu$
Input Voltage (Max.)	V_I		-	110	-	$\text{dB}\mu$
Differential Gain	DG		0	4	-	%
Differential Phase	DP		0	5	5	degrees
Frequency Characteristics	f_c	$V_O = -3\text{dB}$	6.5	9	15	MHz
Output Voltage (SIF)	V_O	P/S = 20dB	120	160	200	mV_{rms}
Input Resistance, Pin 1	R_i	$f = 58.75\text{MHz}$	0.7	1.0	1.3	$\text{k}\Omega$
Input Capacitance, Pin 1	C_i					
Voltage Gain (RF AGC)	$G_{V(F)}$	$R_L = 3.9\text{k}\Omega$	24	30	36	dB
	$G_{V(R)}$	$R_L = 10\text{k}\Omega$	27	33	39	dB
AFC Center Voltage	V_6	$V_{CC} = 12\text{V}$	5.0	6.5	7.1	V
AFC Defeat-SW Operating Voltage	$V_{(AFC)}$	$R_L = 68\text{k}\Omega/82\text{k}\Omega$, $R_S = 18\text{k}\Omega$	0.5	1.5	2.5	V
Phase Detector Sensitivity	μ	$R_L = 68\text{k}\Omega/82\text{k}\Omega$	60	100	130	mV/kHz
Circuit Current	I_{11}	$V_{CC} = 12\text{V}$	39	56	71	mA

Pin Connection Diagram

