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NTE715
Integrated Circuit
TV Chroma IF Amp

Description:

The NTE715 is a combined two–stage chroma amplifier and functional control circuit. The input signal is received from the video amplifier and applied to Pin2 of the input amplifier stage. The first amplifier stage is part of the ACC system and is controlled by differential adjustment from the ACC input Pin1 and Pin14. The output of the 1st amplifier is directed to Pin6 from where the signal may be applied to the ACC detection system of the NTE714 or an equivalent circuit. The output at Pin6 is also applied to Pin7 which is the input to the 2nd amplifier stage. Another output of the 1st amplifier at Pin13 is directed to the killer adjustment circuit.

The DC voltage level at Pin13 rises as the ACC differential voltage decreases with a reduction in the burst amplitude. At a pre–set conditions determined by the killer adjustment resistor the killercircuit is activated and causes the 2nd chroma amplifier stage to be cut off. The 2nd chroma amplifier stage is also gain controlled by the adjustment of DC voltage at Pin10. The output of the 2nd chroma amplifier stage is available at Pin9. Both amplifier outputs utilize emitter–followers with short–circuit protection.

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

DC Supply Voltage (Pin8 to Pin4) 30V
Device Dissipation (Up to T_A = +70°C), P_D 530mW
Derate Above 70°C . . . . . 6.7mW/°C
Operating Ambient Temperature Range, T_{opr} . . . . . –40° to +85°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Lead Temperature (During Soldering, 1/32” (3.17mm) from seating plane, 10s max), T_L . . +265°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Voltages Bias Reference Terminal	V_{12}	S_1 Open, S_2 Open	–	17.3	–	V
Amplifier No. 1 Chroma Input	V_2	S_1 Open, S_2 Open	–	1.75	–	V
Amplifier No. 1 Chroma Output Balanced	V_6	S_1 Open, S_2 Open	–	20	–	V
Unbalanced		S_1 Open, S_2 Closed	–	13.5	–	V
Amplifier No 2 Chroma Input	V_7	S_1 Open, S_2 Open	–	1.5	–	V
Amplifier No 2 Chroma Output	V_9	S_1 Closed, S_2 Open	–	20.6	–	V
Supply Current	I_T	S_1 Open, S_2 Open	17	24.5	31	mA

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Amplifier No. 1 Voltage Gain	A_{V1}	E_g = 30mV$_{RMS}$ Measure V_6	14	–	–	dB
Amplifier No. 2 Voltage Gain	A_{V2}	V_g = 1.0V(RMS) Measure V_7	–	14	–	dB
Maximum Chroma Output Voltage	V_9		–	2	–	V_{RMS}
10% Chroma Gain Control Reference Voltage	V_8–V_{10}	E_g = 50mV$_{rms}$, adjust Chroma Gain Control to Change V_g to 10% of Maximum Chroma Output	2.1	3.8	6.8	V
Output Voltage, Killer Off	V_9	S_1 in Position 2, E_g = 50mV$_{RMS}$, adjust "Killer Adjust" for an abrupt decrease in V_9	–	–	12	mV$_{RMS}$
Output Voltage, Chroma	V_9	E_g = 50mV$_{RMS}$, adjust Chroma control to min. Chroma Output	–	–	12	mV$_{RMS}$
Bandwidth Amplifier No. 1	BW		–	12	–	MHz
Amplifier No. 2			–	30	–	MHz
Amplifier No. 1 Input Impedance	r_i 1		–	2	–	kΩ
Amplifier No. 1 Input Capacitance	c_i 1		–	4	–	pF
Amplifier No. 1 Output Impedance	r_o 1		–	85	–	Ω
Ampl. No. 2 Input Impedance	r_i 2		–	2.1	–	kΩ
Ampl. No. 2 Output Impedance	r_o 2		–	85	–	Ω

Pin Connection Diagram