

NTE1805 Integrated Circuit Recording Video Signal Processing Circuit

Description:

The NTE1805 is an integrated circuit in a 28-Lead DIP type package designed for use in VCR recording video signal processing.

Features:

- Dynamic Emphasis Characteristics: 5.5dB (at $f = 1\text{MHz}$, input level = -20dB)
- Built-In Carrier Interleaving Circuit
- Built-In Low Pass Filter (Sync-Separation Circuit)
- Supply Voltage: $V_{CC} = 5\text{V}$

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

Supply Voltage, V_{CC} 6V
 Power Dissipation ($T_A = +70^\circ\text{C}$), P_D 250mW
 Operating Ambient Temperature Range, T_{opr} -20° to $+70^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+150^\circ\text{C}$

Electrical Characteristics: ($V_{CC} = 5\text{V}$, $T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	I_{20}	Pin12 High (Record)	14.5	—	35.5	mA
		Pin12 Open (Playback)	14.5	—	35.5	mA
AGC Output Amplification	v_8	Pin12 High, Video Input $1V_{P-P}$	0.4	—	0.8	V_{P-P}
AGC Control Sensitivity	Δv_8	Pin12 High, Video Input 0.5 to $2V_{P-P}$	—	—	1.5	dB
Playback Amp Gain	G_{6-8}	Pin12 Open	6.8	—	9.9	dB
12dB Amp Gain	G_{15-16}		10.4	—	13.4	dB
FM Oscillation Frequency	f_o	Pin12 High, $C_O = 39\text{pF}$, $R_O = 12\text{k}\Omega$	2.9	—	3.9	MHz
FM Output 2 nd High Frequency	$2f_o$		—	—	-33	dB
FM Oscillation Output Amplification	v_{28}		0.65	—	1.35	V_{P-P}
Frequency Control Sensitivity FM Oscillation	β_{28}	Pin12 High, $C_O = 39\text{pF}$, $R_O = 8.2$ to $15\text{k}\Omega$	11.4	—	14.5	$\text{kHz}/\mu\text{A}$

Note 1. Operating Supply Voltage Range: $V_{CC} = 4.5\text{V}$ to 5.5V .

Electrical Characteristics (Cont'd): ($V_{CC} = 5V$, $T_A = +25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Sync Separator Input Sensitivity	S_{19}	Video Input V/S = 5/2	0.45	–	–	V_{P-P}
Sync Separator Output Amplification	v_2	Video Input V/S = 5/2	4.3	–	–	V_{P-P}
NL Limiter Gain	v_{17-21}	Pin12 High	20	–	40	mV_{P-P}
NL Limiter Output Amplification	v_{21}	Pin12 High	26	–	64	mV_{P-P}
		Pin12 High, Pin18 Low	6.0	–	2.6	mV_{P-P}
NC Limiter Gain	v_{14-10}	Pin12 Open	30	–	70	mV_{P-P}
NC Limiter Output Amplification	v_{10}	Pin12 Open	65	–	125	mV_{P-P}
EE Amp Gain	G_{8-10}	Pin12 High	9.7	–	11.6	dB
VV Amp Gain	v_{19-10}	Pin12 Open	1.65	–	2.15	V_{P-P}
Chroma Amp Gain	G_{12-10}		5.3	–	8.8	dB
EE/VV Crosstalk	CT_{19-10}	E □ 4V	–	–	–40	dB
Mute Crosstalk	CT'_{19-10}	Pin12 Low, Pin11 High	–	–	–40	dB
EE/VV Changeover Sensitivity	S_{12}		4	–	–	V
FM Oscillation Carrier Interleave	Δf_0	Pin12 High	5.9	–	9.9	kHz
V Offset	Δv_{19-10}	Pin12 Low	30	–	110	mV

Note 1. Operating Supply Voltage Range: $V_{CC} = 4.5V$ to $5.5V$.

Pin Connection Diagram

Sync Tip Level Detect	1	28	FM Output
Sync Output	2	27	White Clip Level Adjustment
EE Level Adjust	3	26	Mod
Video Signal Input During Recording	4	25	Mod
AGC Detector	5	24	Dark Clip Level Adjustment
Video Signal Input During Playback	6	23	Mod Input
Sub Clamp Detector	7	22	FB Amp Input
Sub Clamp Output	8	21	Main Emphasis Output
GND	9	20	V_{CC}
EE/VV Output	10	19	Main Clamp Input
Dummy Sync Pulse Input	11	18	PG Input & 2/4/6 Hour Select
PB Chroma Input	12	17	Non-Linear Emphasis Sub-Side Input
Noise Canceller L.P.F.	13	16	12dB Amp Output
Noise Canceller H.P.F. Side Input	14	15	12dB Amp Input

