

NTE1813 Integrated Circuit Color Signal Processor for VCR

Description:

The NTE1813 is an integrated circuit in a 22-Lead DIP type package. When combined with the NTE1814, this device provides the functions which process VCR color signals at the 2H/4H/6H mode is NTSC systems.

Features:

- Low Operating Supply Voltage: $V_{CC} = 5V$
- Low Power Consumption: 110mW
- AFC and APC System in Recording Mode. APC System Only During Playback Mode.
- Better S/N Ratio by Chroma ACC (2H/6H Mode).

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

Supply Voltage, V_{CC} 6V
 Power Dissipation ($T_A = +70^\circ C$), P_D 250mW
 Operating Ambient Temperature Range, T_{opr} -20° to $+70^\circ C$
 Storage Temperature Range, T_{stg} -40° to $+150^\circ C$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Circuit Current	I_{tot}		15	—	32	mA
REC Output Amplitude (Burst ACC)	V_{O14-R}	Pin22 Input Burst $0.1V_{P-P}$	0.5	—	1.2	V_{P-P}
REC ACC Control Sensitivity (Burst ACC)	β_{AGC-B}	+6dB to -15dB	—	—	3	dB
Chroma ACC	β_{AGC-C}		0.5	—	4.5	dB
Main BM Amp Gain	G_{V-16}	Pin20 Input $0.5V_{P-P}$	4	—	9	dB
Main BM carrier Leak	CL_{16}		—	—	-33	dB
Burst Emphasis Amount	G_{E11}	Pin20 Input $0.25V_{P-P}$	5	—	7	dB
REC Current Up Rate	G_{REC}	Pin20 Input $0.25V_{P-P}$	0.5	—	2.5	dB
PB Output Amplitude (2H)	V_{O14-P}	Pin1 Input $0.2V_{P-P}$	0.2	—	0.55	V_{P-P}
Burst De-Emphasis Amount	G_{DE}	Pin1 Input $0.2V_{P-P}$	-6.5	—	-4.5	dB

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
PB/REC Crosstalk	CT_{14-P}		–	–	–40	dB
REC Control Voltage	S_{1-REC}		4.6	–	–	V
Sub BM Amp Gain	G_{V-7}	Pin9 Input $0.65V_{P-P}$	1	–	5	dB
Sub BM Carrier leak	CL_7		–	–	–35	dB
Killer Sensitivity (ON)	K_{gate1}	Pin20 Input $0\text{dB} = 0.25V_{P-P}$	–22	–	–	dB
Killer Sensitivity (OFF)	K_{gate2}	Pin20 Input $0\text{dB} = 0.25V_{P-P}$	–	–	–10	dB
Killer Output (LOW)	V_{14-L}		–	–	0.5	V
VCO FREE Frequency	f_{OSC}		3	–	7	MHz
VCO Control Sensitivity	β_2		1.5	–	3.5	kHz/mV
VCO Output Amplitude	V_{O11}		0.4	–	–	V_{P-P}
REC Pull-In Range (H)	f_{APC-H}		500	–	–	Hz
REC Pull-In Range (L)	f_{APC-L}		–	–	–500	Hz
2H Mode Range	S_{10-1}		–	–	0.6	V
4H Mode	S_{10-2}		1.6	–	2.0	V
6H Mode	S_{10-3}		3.2	–	3.6	V

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

Pin Connection Diagram