

NTE1814 Integrated Circuit CMOS, Color Processing Circuit for VCR

Description:

The NTE1814 is a CMOS LSI integrated circuit in an 18-Lead DIP type package designed for use in VCR color signal processing circuits for VHS system video tape recorders. This device is used in configuration with the NTE1813 for color signal processing in 2, 4, and 6Hr modes in NTSC VCR systems.

Features:

- In Recording, a Video Color Signal can be Converted into a Low-Frequency Video Color Signal by AFC and REC APC.
- In Playback, the Low-Frequency Color Signal can be Converted into the Original Video Color Signal on the Color Subcarrier Wave Frequency by PB APC and the Side Lock Detect Circuit.
- The NTE1814 Contains the Following Functions:
 - Rotary Circuit
 - DPLL (Digital Phase Locked Loop) Circuit
 - Side Lock Detect Circuit
 - Field Start Inhibit Pulse Generating Circuit
 - Burst Adjust Pulse Generating Circuit
 - Burst Gate Pulse Generating Circuit
 - Monostable Multivibrator Circuit
 - Phase Comparator
- Can be Miniaturized and Simplified with High Reliability
- Low Power Dissipation: 15mW @ 5V

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

Supply Voltage, V_{DD} -0.3 to +8.0V
 Input Voltage, V_I -0.3V to $V_{DD}+0.3\text{V}$
 Output Voltage, V_O -0.3V to $V_{DD}+0.3\text{V}$
 Operating Ambient Temperature Range, T_{opr} -10° to $+70^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^\circ\text{C}$

Recommended Operating Conditions: ($V_{SS} = 0\text{V}$, $T_A = +25^\circ\text{C} \pm 2^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{DD}		4.5	5.0	5.5	V
VCO Input Operating Frequency	f_{VCO}	NTSC	—	5.03	—	MHz
VCO Input Amplitude	V_{VCO}	C cut (C = 1000pF) Sine Wave Input	0.3	0.5	—	V_{P-P}

DC Electrical Characteristics: ($V_{DD} = 5V$, $V_{SS} = 0V$, $T_A = +25^{\circ}C \pm 2^{\circ}C$, $f_{VCO} = 5.03MHz$ (NTSC) unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current	I_{DD}	No Load	–	–	3	mA
Power Dissipation	P_{tot}	No Load	–	–	15	mW
Input Terminal 1 PGI, SYN	V_{IH1}		3.5	–	V_{DD}	V
	V_{IL1}		V_{SS}	–	1.5	V
Input Terminal 2 SCM, PN, NREC, BERR, TPB (with a Pull–Low Resistance)	V_{IH2}		3.5	–	V_{DD}	V
	V_{IL2}		V_{SS}	–	1.5	V
	I_{IH2}	$V_I = 5V$	–	–	300	μA
Input Terminal 3 NCLR (with a Pull–High Resistance)	V_{IH3}		3.5	–	V_{DD}	V
	V_{IL3}		V_{SS}	–	1.5	V
	I_{IH3}	$V_I = 0V$	–	–	–300	μA
Output Terminal 1 HP, PSSC	I_{OH1}	$V_{OH} = 3.5V$	–0.5	–	–	mA
	I_{OL1}	$V_{OL} = 1.5V$	0.5	–	–	mA
Output Terminal 2 LOC, PCO, BADJ, BGP (3–Value Output)	I_{OH2}	$V_{OH} = 2.5V$	–2.5	–5.0	–	mA
	I_{OL2}	$V_{OL} = 2.5V$	2.5	5.0	–	mA
	I_{Leak2}	$V_O = 5V, 0V$ (with a High Impedance)	–	–	± 5	μA
Output Terminal 3 FSI	I_{OH3}	$V_{OH} = 4.3V$	–0.5	–	–	mA
	I_{OL3}	$V_{OL} = 0.7V$	0.5	–	–	mA

Pin Connection Diagram



