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NTE15039 Integrated Circuit VHS/VCR Chroma Signal Processor for NTSC/PAL/SECAM Systems

Description:

The NTE15039 is a multifunctional IC in a 24-Lead DIP type package that contains VHS VCT chroma signal processing circuitry. Since the package is small and a minimum number of external components are required, the NTE15039 occupies much less space on the PC board thus facilitating VCR design. The chroma section is made adjustment-free (except REC chroma level) thus streamlining the manufacture of VCRs

Features:

- Designed for NTSC/PAL/MESECAM Systems
- Adjustment-Free Chroma Section (Except REC Chroma Level)
- Few External Components Required
- LPF Usable for REC/PB
- Multifunctional:
 - 2f_{SC} Generator for CCD Drive
 - Function to Select APC Loop Input Signal Passed/Not Passed Through Comb Filter
 - 3_{rd} Lock Protector of VXO

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

Maximum Supply Voltage, V_{CCmax} 7V
 Allowable Power Dissipation (T_A ≤ +65°C), P_{Dmax} 850mW
 Operating Temperature Range, T_{opg} -10° to +65°C
 Storage Temperature Range, T_{stg} -40° to +125°C

Recommended Operating Conditions: (T_A = +25°C unless otherwise specified)

Recommended Supply Voltage, V_{CC} 5V
 Operating Voltage Range, V_{CCop} 4.8 to 5.5V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
REC Current Dissipation	I _{CC(R)}		49	62	75	mA
REC Output Level	V _{O(R)}		75	110	145	mV _{P-P}
REC ACC Characteristics	ΔV _{O(R)}	Input ± 6dB	-0.5	±0.1	+0.5	dB

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
ACC Killer Input Level	V_{ACK}		-25	-22	-19	dB
VXO Control Sensitivity	S_{VXO}		3.1	4.6	6.9	Hz/mV
VXO OSC Level	$V_{VXO(R)}$		0.77	1.01	1.19	V_{P-P}
Subconverter Output Level	V_{SUB}		97	122	147	mV_{P-P}
BGP Delay Time	t_D		-	3.35	-	μs
BGP Width	t_W		-	4.9	-	μs
REC APC Pull-in Range	Δf_{APC}		± 350	-	-	Hz
REC AFC Pull-in Range	Δf_{AFC}		± 1.0	-	-	kHz
160f _H VCO Control Sensitivity	S_{VCO}		0.75	1.06	1.38	kHz/mV
PB Current Dissipation	$I_{CC(P)}$		51	64	77	mA
PB Output Level	$V_{O(P)}$		340	390	450	mV_{P-P}
PB ACC Characteristic	$\Delta V_{O(P)}$	Input $\pm 6\text{dB}$	-0.5	-	+0.5	dB
PB Main Converter Carrier Leak	$CL_{(p)}$	5.06MHz component	-	-38	-33	dB
PB XO Output Level	$V_{XO(P)}$		540	680	840	mV_{P-P}
PB XO Free-Running Frequency	$f_{XO(f)}$	Difference from 4433619Hz	-9	0	+9	Hz
2f _{SC} Output Amplitude	V_{2fsc}		300	430	560	mV_{P-P}
Burst Emphasis Amount	G_{BE}	NTSC Mode	5.5	6.0	6.5	dB
Burst De-Emphasis Amount	G_{BD}	NTSC Mode	-5.8	-5.55	-5.3	dB
PAL/NTSC Select Voltage	$V_{P/N}$		1.0	1.35	1.7	V
NTSC/SECAM Select Voltage	$V_{N/S}$		3.2	3.55	3.9	V

Pin Connection Diagram



