



ELECTRONICS, INC.
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NTE15038 Integrated Circuit Chroma Signal Processor for VHS VCR

Features:

- Adjustment-Free 3.58MHz VXO Free-Running OSC Frequency, 160f_H VCO Free-Running OSC Frequency, Carrier Leak, PB Chroma Level, except REC Chroma Level.
- Multifunctional:
 - 2f_{SC} Generator for CCD Drive
 - PB Chroma (629K) Level Compensation Amp
 - Function to Select APC Loop Input Signal Passed/Not Passed Through Comb Filter
 - BGP Output
 - 3rd Lock Protector of 3.58MHz OSC
- LPF Usable for REC/PB
- Capable of Being Operated from 5V Supply
- Current Dissipation: 48mA at REC mode
50mA at PB mode
- Few External Components Required

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} 400mW
 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} 5.2V
 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)}		38	48	58	mA
REC Output Level	V _{O(R)}		210	300	390	mV _{P-P}
REC ACC Characteristics	ΔV _{O(R)}	Input ± 6dB	-0.5	0	+0.5	dB
ACC Killer Input Level	V _{ACK}		-28	-25	-22	dB
VXO Control Sensitivity	S _{VXO}		2.5	3.7	5.5	H _Z /mV
VXO OSC Level	V _{VXO(R)}		0.65	0.85	1.00	V _{P-P}

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
Subconverter Output Level	V_{SUB}		200	250	300	mV _{P-P}
BGP Delay Time	t_D		–	3.2	–	μs
BGP Width	t_W		–	4.8	–	μs
REC APC Pull-in Range	Δf_{APC}		± 350	–	–	Hz
REC AFC Pull-in Range	Δf_{AFC}		± 1.5	–	–	kHz
160f _H VCO Control Sensitivity	S_{VCO}		0.42	0.60	0.78	kHz/mV
PB Current Dissipation	$I_{CC(P)}$		40	50	60	mA
PB Output Level	$V_{O(P)}$		575	660	760	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	$CL_{(P)}$	4.21MHz component	–	–40	–33	dB
PB XO Output Level	$V_{XO(P)}$		520	650	800	mV _{P-P}
PB XO Free-Running Frequency	$f_{XO(f)}$	Difference from 3579545Hz	–7	0	+7	Hz
2f _{SC} Output Amplitude	$V_{2f_{sc}}$		420	600	780	mV _{P-P}
Burst Emphasis Amount	G_{BE}		5.5	6.0	6.5	dB
Burst De-emphasis	G_{BD}		–5.5	–5.25	–5.0	dB
Comb Amp Gain	G_{COMB}		11	13	15	dB

Pin Connection Diagram



