

SANYO

No. 5151

LA7640N**Chroma Circuit for
SECAM-system Color Television Sets****Overview**

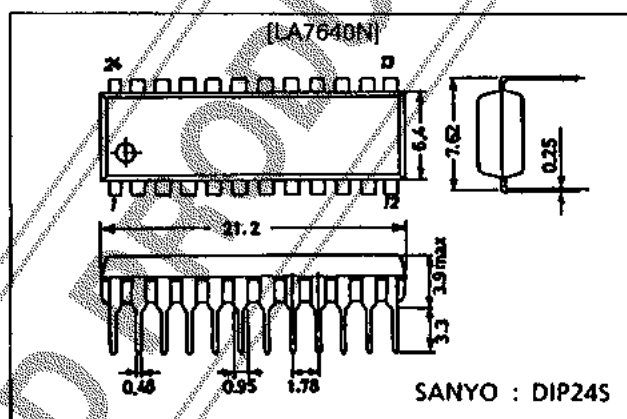
The LA7640N houses the chroma circuit for a SECAM-system color television set in a shrink-type DIP24S package. The LA7640N eliminates the need for adjustment of the discriminator. When used in conjunction with the LA7685J single-chip PAL/NTSC system LSI, it becomes possible to process color television signals for multiple systems. Note that the LA7640N has a built-in SECAM signal demodulation circuit block and a demodulated signal amplitude modulation circuit block.

Features

- Discriminator requires no adjustment.
- Conversion of SECAM signals into pseudo-NTSC signals (SECAM → pseudo-NTSC transcoder).

Package Dimensions

unit : mm

3067-DIP24S**Specifications****Maximum Ratings at $T_a = 25\text{ }^{\circ}\text{C}$**

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CCmax}		10	V
Allowable power dissipation	$P_d\text{ max}$	$T_a \leq 65\text{ }^{\circ}\text{C}$	650	mW
Operating temperature	T_{opr}		-10 to +65	$^{\circ}\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

Operating Conditions at $T_a = 25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		9	V
Operating supply voltage range	V_{CCop}		8 to 10	V

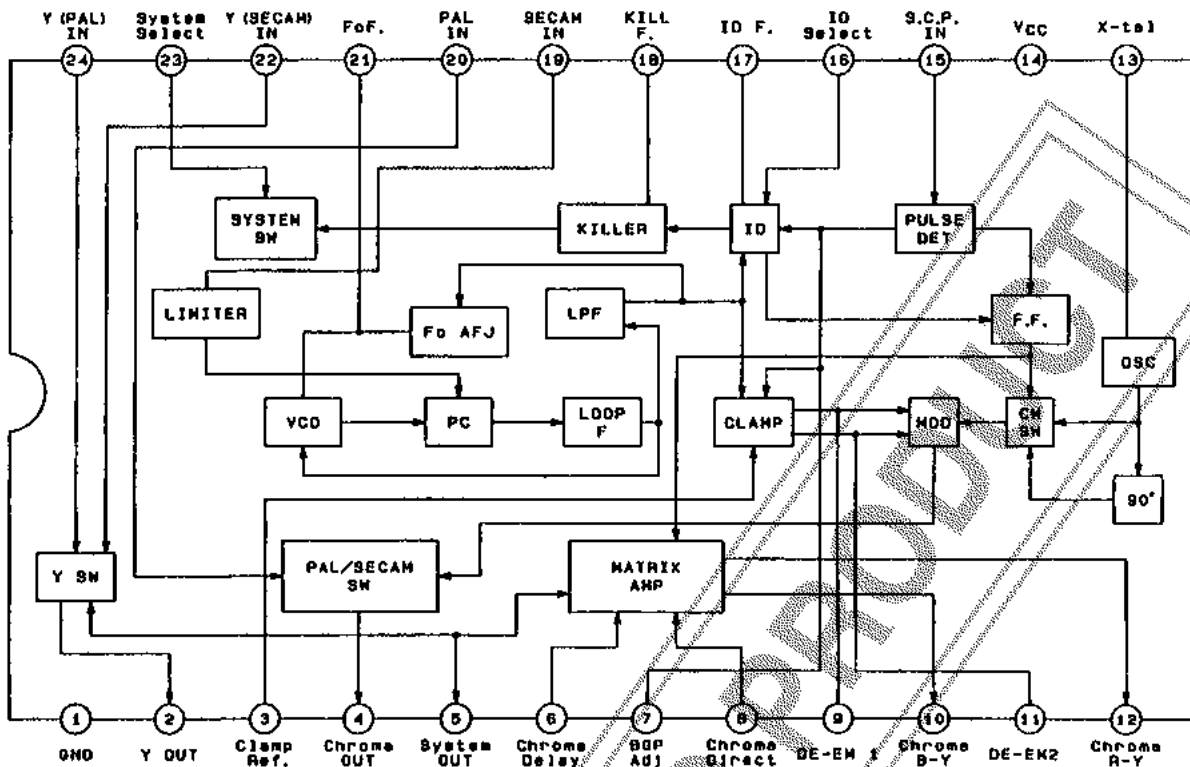
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Electrical Characteristics at $T_a = 25\text{ }^{\circ}\text{C}$, $V_{CC} = 9\text{ V}$

Parameter	Symbol	Conditions	min	typ	max	Unit
Supply current	I_{CC}		23	33	43	mA
[Chroma Block]						
Killer operating point	Killer		-42	-36	-30	dB
SECAM demodulation output						
B-Y	D_{OUTB}		0.37	0.47	0.56	Vp-p
R-Y	D_{OUTR}		0.53	0.67	0.80	Vp-p
SECAM demodulation output ratio R-Y/B-Y	$D_{OUTR/B}$		1.0	1.4	1.8	
Modulation output ratio						
R-Y/Burst	$M_{OUTB/B}$		1.90	2.55	3.10	
R-Y/B-Y	$M_{OUTR/B}$		0.92	1.30	1.69	
Modulation output burst	M_{OUTB}		65	100	125	mVp-p
Modulation angle B-Y	ANGBY	Burst = 180°	-10	0	+10	deg
Modulation angle R-Y	ANGRY	Burst = 180°	80	90	100	deg
Demodulation linearity	DLIN		80	100	120	%
Modulation linearity	MLIN		80	100	120	%
[Video Block]						
Voltage gain pin 22	VG_{22}	$f = 100\text{ kHz}$ 1 Vp-p, pin 23 GND	-3	0	+3	dB
Voltage gain pin 24	VG_{24}	$f = 100\text{ kHz}$ 1 Vp-p, pin 23 V_{CC}	-3	0	+3	dB
Frequency characteristics pin 22	VF_{22}	$f = 10\text{ MHz}$ 0.5 Vp-p, pin 23 GND	-4	-1	+2	dB
Frequency characteristics pin 24	VF_{24}	$f = 10\text{ MHz}$ 0.5 Vp-p, pin 23 V_{CC}	-4	-1	+2	dB
Dynamic range pin 22	VD_{22}	Pin 23 GND	2.0	2.9		Vp-p
Dynamic range pin 24	VD_{24}	Pin 23 V_{CC}	2.0	2.9		Vp-p
PAL matrix						
PAL Gain +	P_{G+}	$f = 4.43\text{ MHz}$ 300mVp-p, pin 23 V_{CC}	3.0	6.0	9.0	dB
PAL Gain -	P_{G-}	$f = 4.43\text{ MHz}$ 300mVp-p, pin 23 V_{CC}		-35	-30	dB
SECAM switch						
SECAM Gain 1	SE_{G1}	$f = 4.43\text{ MHz}$ 300mVp-p, pin 23 GND	3.0	6.0	9.0	dB
SECAM Gain 2	SE_{G2}	$f = 4.43\text{ MHz}$ 300mVp-p, pin 23 GND	3.0	6.0	9.0	dB
SECAM cross-talk 1	SC_1	$f = 4.43\text{ MHz}$ 300mVp-p, pin 23 GND		-35	-30	dB
SECAM cross-talk 2	SC_2	$f = 4.43\text{ MHz}$ 300mVp-p, pin 23 GND		-35	-30	dB
[PAL/SECAM Switch Block]						
PAL-side voltage gain	C_{OUTG}	Pin 23 V_{CC}	-3	0	+3	dB
Cross-talk SECAM $\rightarrow$ PAL	C_{OUTG}				-35	dB
Xtal oscillator oscillation frequency	f_{R60}		0	97	180	Hz
B.G.P threshold voltage	V_{BGP}	Pin 23 GND	5.7	6.2	6.7	V
V.BLK pulse threshold voltage	V_V	Pin 23 GND	2.6	3.1	3.6	V
Forced PAL threshold voltage	V_{23P}		6.3	6.7	7.1	V
SECAM threshold voltage	V_{23S}		1.8	2.2	2.6	V
SECAM discrimination output voltage	V_{OUTS}			0.15	0.3	V

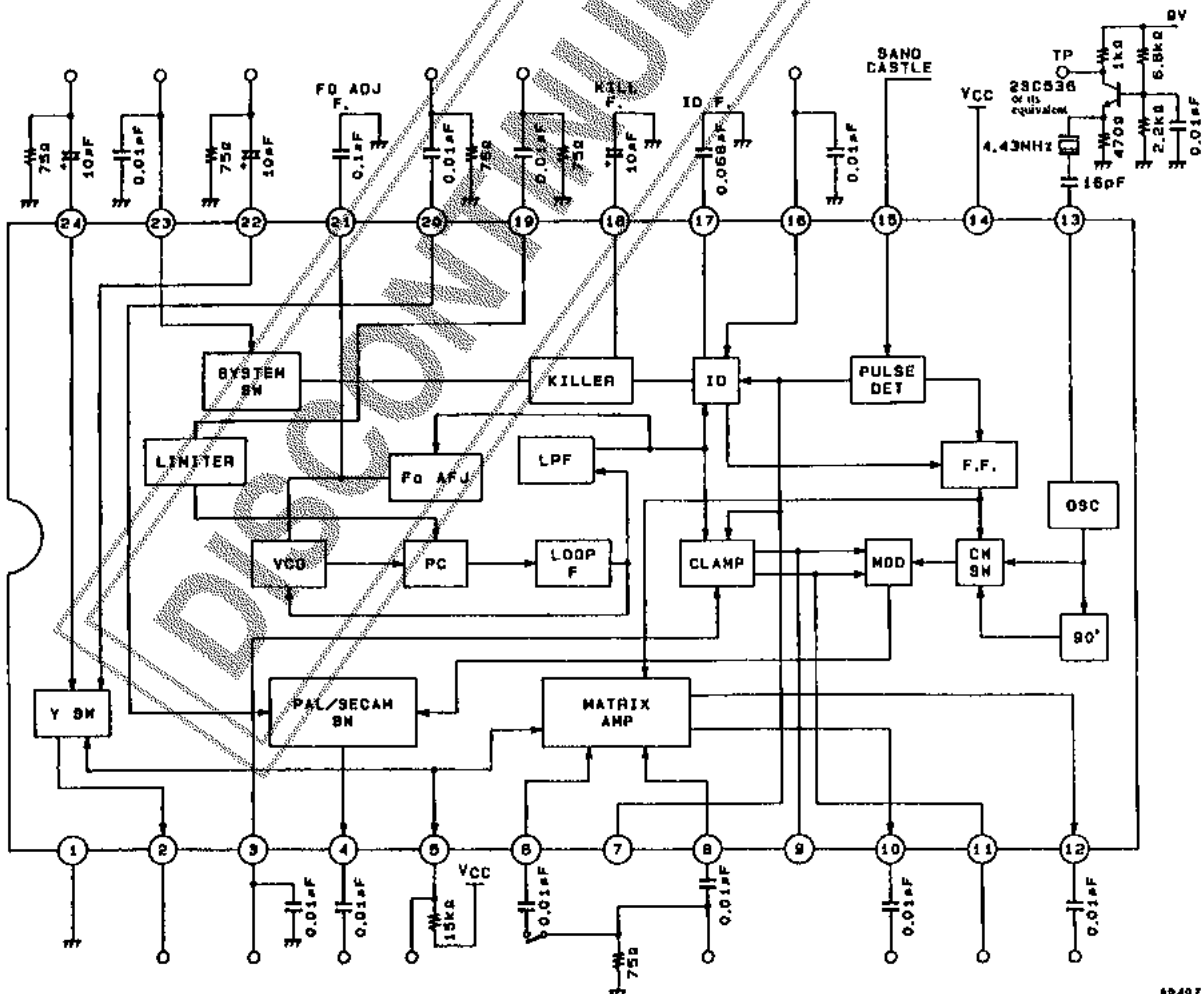
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Block Diagram



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Test Circuit



A94072

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LA7685J LA7640N Connection Diagram (Reference)

Unit (resistance: Ω , capacitance: F)

