

<b>SANYO</b>	No. 5151	<b>LA7640N</b>
		<b>Chroma Circuit for SECAM-system Color Television Sets</b>

## 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.

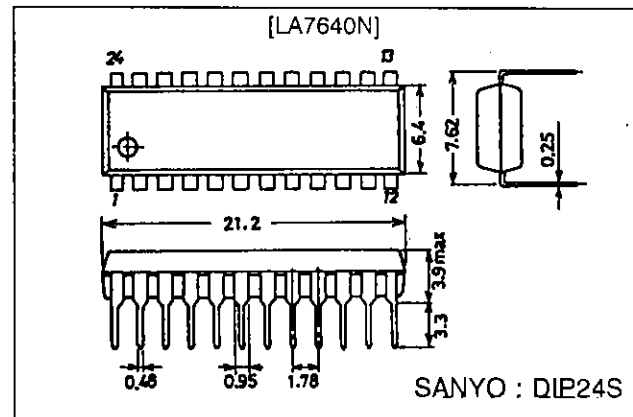
## Features

- 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 Ta = 25 °C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CCmax</sub>		10	V
Allowable power dissipation	P <sub>d max</sub>	T <sub>a</sub> ≤ 65 °C	650	mW
Operating temperature	T <sub>opr</sub>		-10 to +65	°C
Storage temperature	T <sub>stg</sub>		-55 to +150	°C

### Operating Conditions at Ta = 25 °C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V <sub>CC</sub>		9	V
Operating supply voltage range	V <sub>CCop</sub>		8 to 10	V

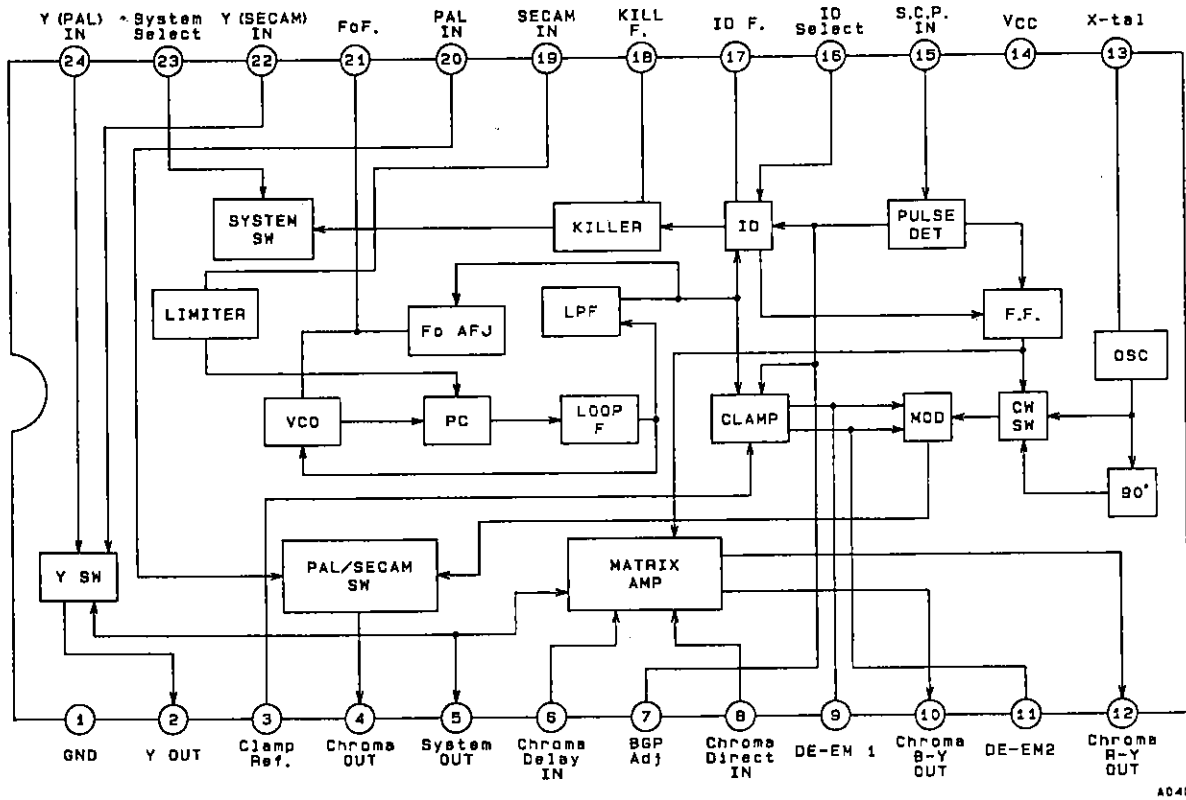
## LA7640N

### Electrical Characteristics at Ta = 25 °C, V<sub>CC</sub> = 9 V

Parameter	Symbol	Conditions	min	typ	max	Unit
Supply current	I <sub>CC</sub>		23	33	43	mA
[Chroma Block]						
Killer operating point	Killer		-42	-36	-30	dB
SECAM demodulation output						
B-Y	D <sub>OUTB</sub>		0.37	0.47	0.56	Vp-p
R-Y	D <sub>OUTR</sub>		0.53	0.67	0.80	Vp-p
SECAM demodulation output ratio R-Y/B-Y	D <sub>OUTR/B</sub>		1.0	1.4	1.8	
Modulation output ratio						
R-Y/Burst	M <sub>OUTB/B</sub>		1.90	2.55	3.10	
R-Y/B-Y	M <sub>OUTR/B</sub>		0.92	1.30	1.69	
Modulation output burst	M <sub>OUTB</sub>		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 linirarity	DLIN		80	100	120	%
Modulation linirarity	MLIN		80	100	120	%
[Video Block]						
Voltage gain pin 22	VG <sub>22</sub>	f = 100 kHz 1 Vp-p, pin 23 GND	-3	0	+3	dB
Voltage gain pin 24	VG <sub>24</sub>	f = 100 kHz 1 Vp-p, pin 23 V <sub>CC</sub>	-3	0	+3	dB
Frequency characteristics pin 22	VF <sub>22</sub>	f = 10 MHz 0.5 Vp-p, pin 23 GND	-4	-1	+2	dB
Frequency characteristics pin 24	VF <sub>24</sub>	f = 10 MHz 0.5 Vp-p, pin 23 V <sub>CC</sub>	-4	-1	+2	dB
Dymamic range pin 22	VD <sub>22</sub>	Pin 23 GND	2.0	2.9		Vp-p
Dymamic range pin 24	VD <sub>24</sub>	Pin 23 V <sub>CC</sub>	2.0	2.9		Vp-p
PAL matrix						
PAL Gain +	P <sub>G+</sub>	f = 4.43 MHz 300mVp-p, pin 23 V <sub>CC</sub>	3.0	6.0	9.0	dB
PAL Gain -	P <sub>G-</sub>	f = 4.43 MHz 300mVp-p, pin 23 V <sub>CC</sub>		-35	-30	dB
SECAM switch						
SECAM Gain 1	SE <sub>G1</sub>	f = 4.43 MHz 300mVp-p, pin 23 GND	3.0	6.0	9.0	dB
SECAM Gain 2	SE <sub>G2</sub>	f = 4.43 MHz 300mVp-p, pin 23 GND	3.0	6.0	9.0	dB
SECAM cross-talk 1	S <sub>C1</sub>	f = 4.43 MHz 300mVp-p, pin 23 GND		-35	-30	dB
SECAM cross-talk 2	S <sub>C2</sub>	f = 4.43 MHz 300mVp-p, pin 23 GND		-35	-30	dB
[PAL/SECAM Switch Block]						
PAL-side voltage gain	C <sub>OUTG</sub>	Pin 23 V <sub>CC</sub>	-3	0	+3	dB
Cross-talk SECAM → PAL	C <sub>OUTC</sub>				-35	dB
Xtal oscillator oscillation frequency	f <sub>REQ</sub>		0	97	180	Hz
B.G.P threshold voltage	V <sub>BGP</sub>	Pin 23 GND	5.7	6.2	6.7	V
V.BLK pulse threshold voltage	V <sub>V</sub>	Pin 23 GND	2.6	3.1	3.6	V
Forced PAL threshold voltage	V <sub>23P</sub>		6.3	6.7	7.1	V
SECAM threshold voltage	V <sub>23S</sub>		1.8	2.2	2.6	V
SECAM discrimination output voltage	V <sub>OUTS</sub>			0.15	0.3	V

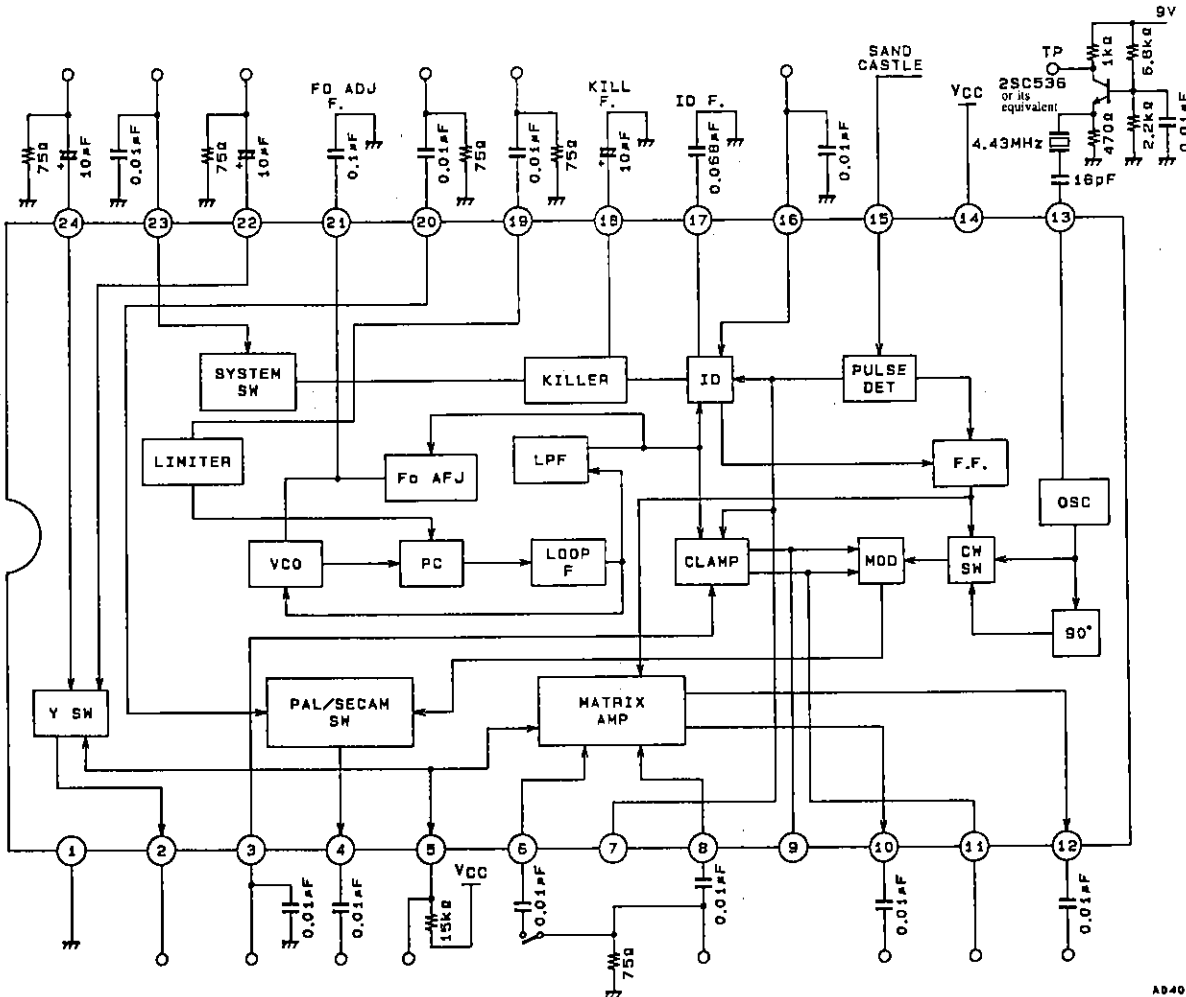
# LA7640N

## Block Diagram



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## Test Circuit

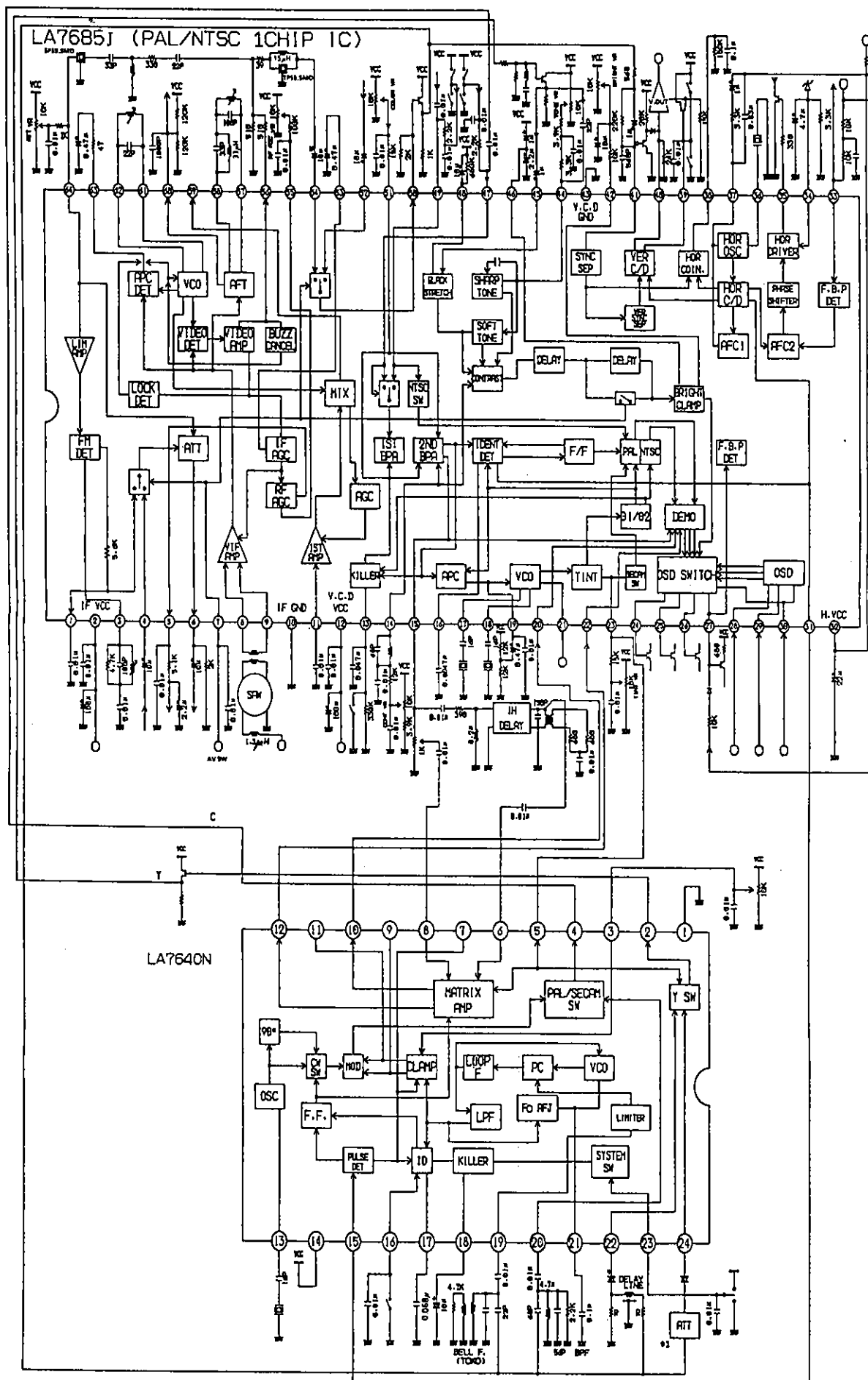


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# LA7640N

## LA7685J LA7640N Connection Diagram (Reference)

Unit (resistance:  $\Omega$ , capacitance: F)



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