

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.

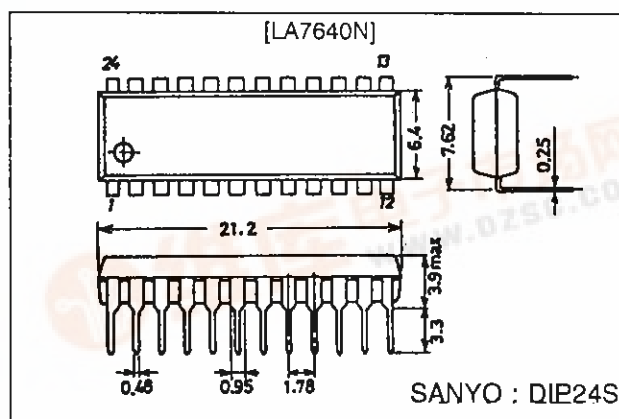
Features

- 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_{CCmax}		10	V
Allowable power dissipation	$P_d max$	$T_a \leq 65 \text{ }^\circ\text{C}$	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 Ta = 25 °C

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

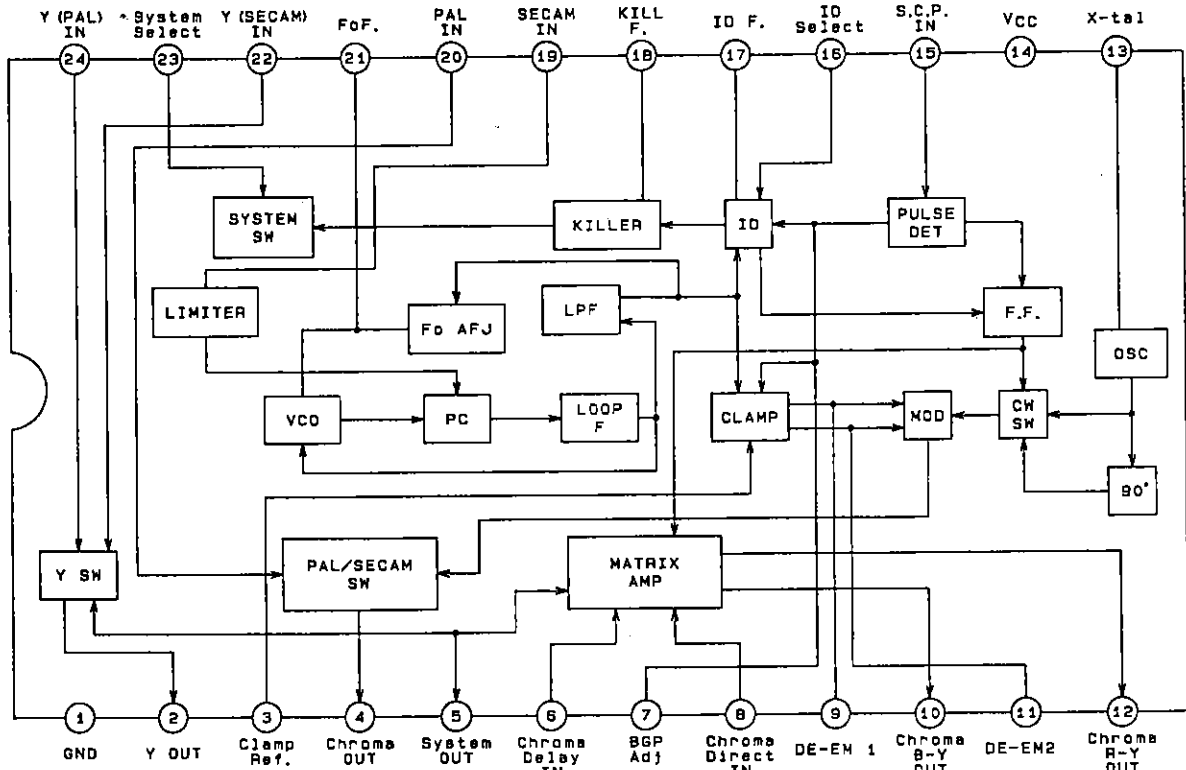
LA7640N

Electrical Characteristics at Ta = 25 °C, V_{CC} = 9 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 linirarity	DLIN		80	100	120	%
Modulation linirarity	MLIN		80	100	120	%
[Video Block]						
Voltage gain pin 22	VG ₂₂	f = 100 kHz 1 Vp-p, pin 23 GND	-3	0	+3	dB
Voltage gain pin 24	VG ₂₄	f = 100 kHz 1 Vp-p, pin 23 V _{CC}	-3	0	+3	dB
Frequency characteristics pin 22	VF ₂₂	f = 10 MHz 0.5 Vp-p, pin 23 GND	-4	-1	+2	dB
Frequency characteristics pin 24	VF ₂₄	f = 10 MHz 0.5 Vp-p, pin 23 V _{CC}	-4	-1	+2	dB
Dymamic range pin 22	VD ₂₂	Pin 23 GND	2.0	2.9		Vp-p
Dymamic range pin 24	VD ₂₄	Pin 23 V _{CC}	2.0	2.9		Vp-p
PAL matrix						
PAL Gain +	P _{G+}	f = 4.43 MHz 300mVp-p, pin 23 V _{CC}	3.0	6.0	9.0	dB
PAL Gain -	P _{G-}	f = 4.43 MHz 300mVp-p, pin 23 V _{CC}		-35	-30	dB
SECAM switch						
SECAM Gain 1	SE _{G1}	f = 4.43 MHz 300mVp-p, pin 23 GND	3.0	6.0	9.0	dB
SECAM Gain 2	SE _{G2}	f = 4.43 MHz 300mVp-p, pin 23 GND	3.0	6.0	9.0	dB
SECAM cross-talk 1	SC ₁	f = 4.43 MHz 300mVp-p, pin 23 GND		-35	-30	dB
SECAM cross-talk 2	SC ₂	f = 4.43 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 → PAL	C _{OUTC}				-35	dB
Xtal oscillator oscillation frequency	f _{REQ}		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

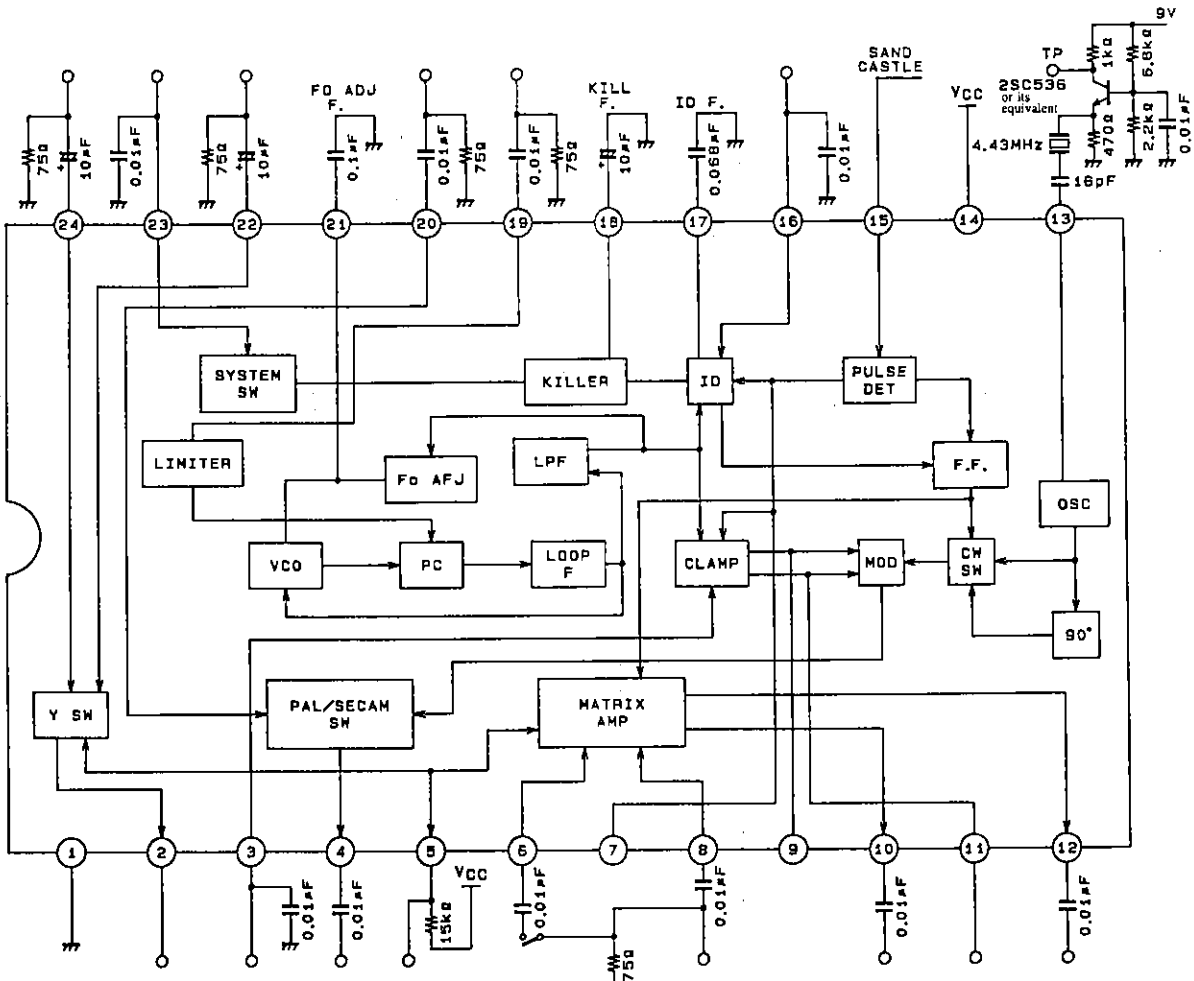
LA7640N

Block Diagram



A04071

Test Circuit

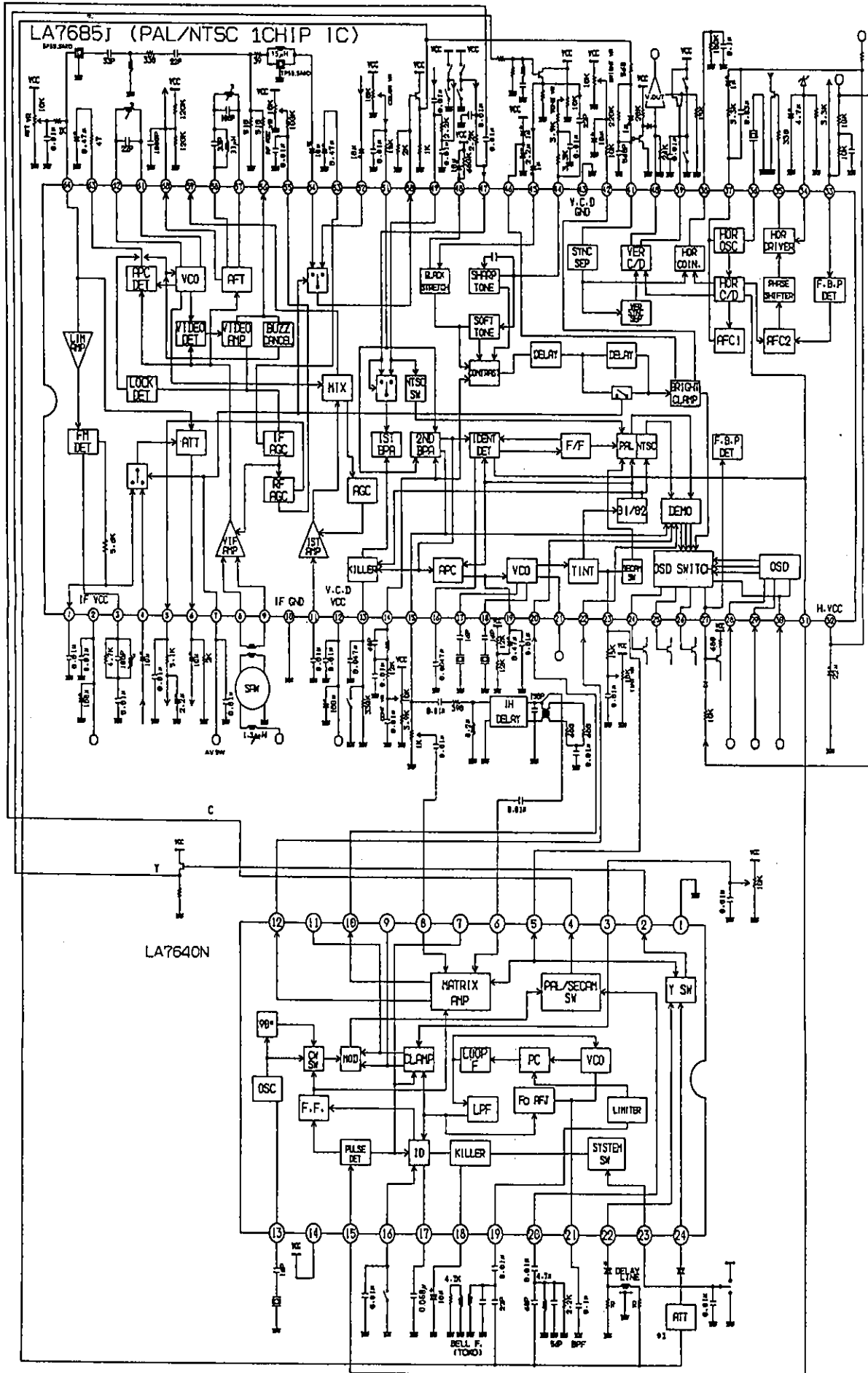


A04072

LA7640N

LA7685J LA7640N Connection Diagram (Reference)

Unit (resistance: Ω, capacitance: F)



LA7640N

- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of June, 1995. Specifications and information herein are subject to change without notice.