

PAL/NTSC 1 CHIP IC FOR COLOR TELEVISION

The KA2161 combines a IF system and a video/chroma/deflection on a monolithic integrated circuit to provide a PAL/NTSC color television.

This device is suitable to a multi-CTV system on a 54 SDIP and includes VIF/SIF, video/chroma/deflection processor.

FUNCTION

IF BLOCK

- VIF AmP
- Video detector
- 1st, 2nd IF AGC filter
- Noise canceller
- AFT
- RF AGC
- SIF limiter amp
- Attenuator
- FM detector
- AF AMP

VIDEO

- Contrast control
- Brightness control
- Pedestal clamp circuit
- Sharpness control using internal D.L
- OSD(R,G,B) Interface
- OSD brightness control

CHROMA

- ACC amplifier
- Demodulator
- Color control
- Tint control for NTSC system
- APC circuit
- VCO (fsc)
- Killer detector
- Matrix circuit
- PAL/NTSC system SW

DEFLECTION

- Sync. separator
- AFC filter
- 32th VCO
- Horizontal driver
- X-ray protector
- 50/60 Hz auto detector
- Vertical driver

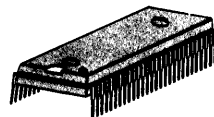
OSD

- OSD(R,G,B) interface circuit
- OSD brightness control

FEATURE

- Lower operation voltage: $V_{CC}=9V$
- Available Multi system (PAL/NTSC/SECAM) with SECAM decoder
- Minimum number of external parts required
- Small package type: 54 SDIP
- Suitable OSD Interface
- Available 50/60 Hz auto switch
- Built in Delay Line for video sharpness

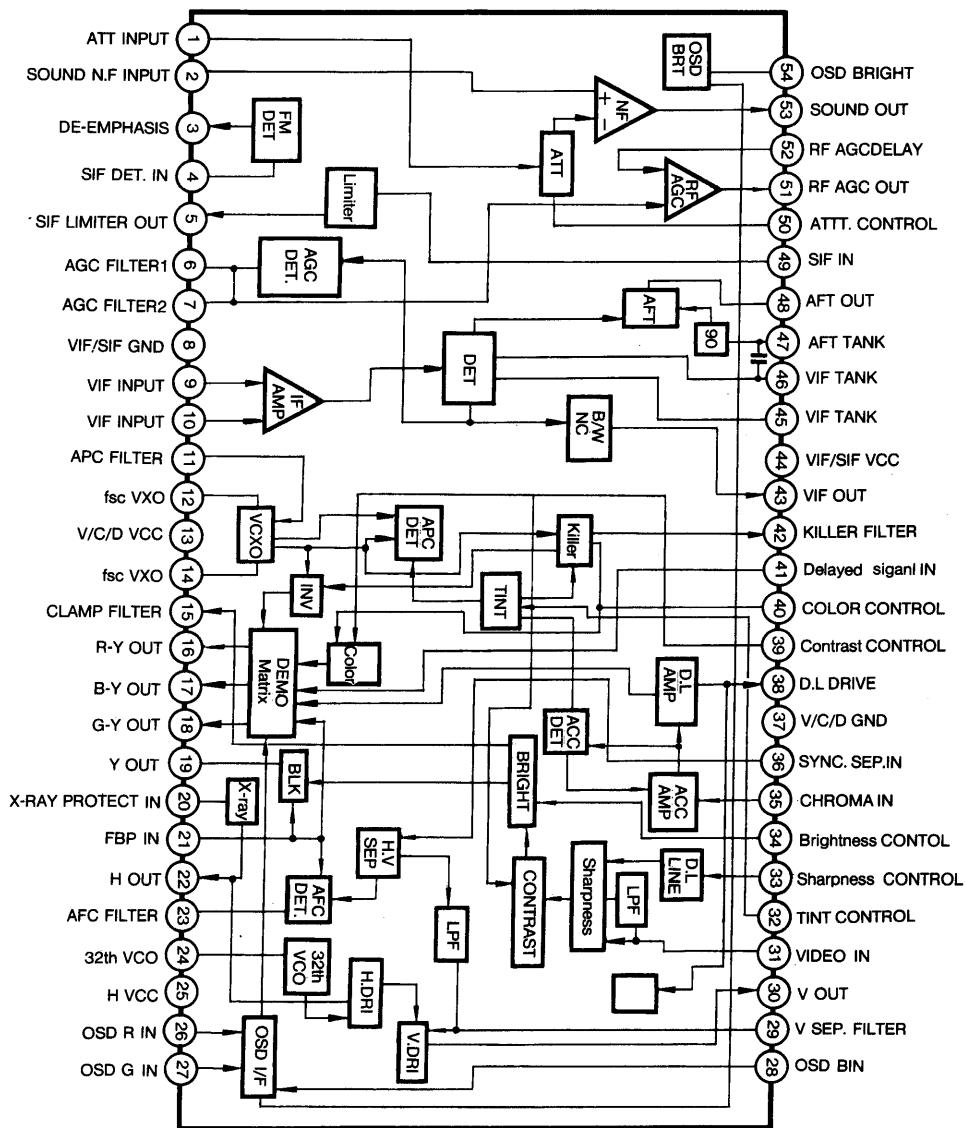
54 -SDIP



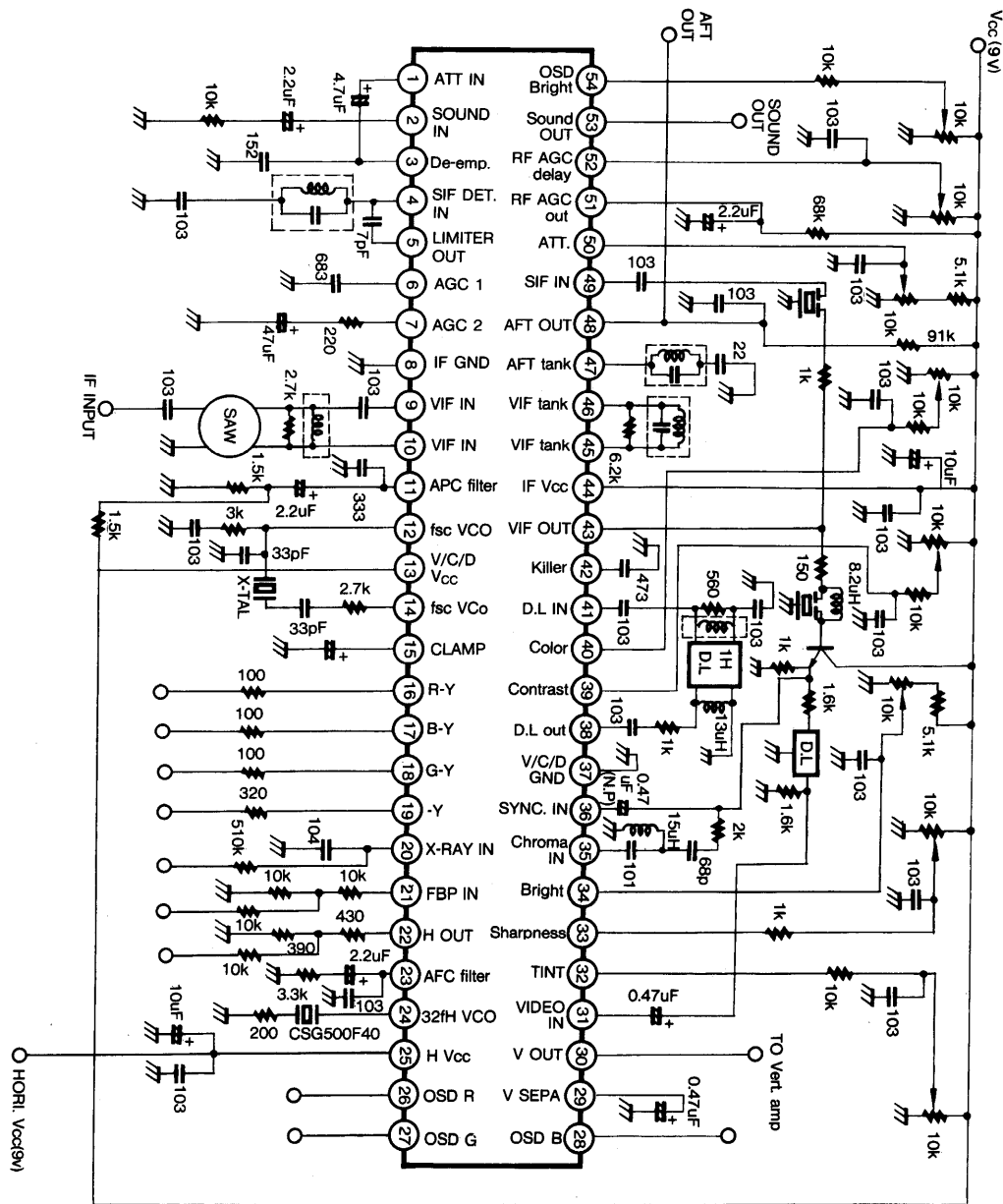
ORDERING INFORMATION

Device	package	operating Temperature
KA2161	54 -SDIP	-20~ +70°C

BLOCK DIAGRAM



APPLICATION CIRCUIT



IF SECTION (VIF, SIF)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Min. RF AGC voltage	V51h		—	—	1.0	V
Max. RF AGC voltage	V51l		8.0	—	—	V
VIF input sensitivity	V _{is}		—	40	45	dBu
VIF max input	V _{im}		110	110	—	dBu
AGC range	GR		60	71	—	dB
Video output amplitude	V _O		1.7	2.0	2.3	Vp-p
Sync. tip level	V _{sync}		2.2	2.4	2.7	V
Carrier leakage	CL		40	58	—	dB
Black noise clamp level	V _{bcl}		3.2	3.6	4.0	V
Black noise threshold level	V _{bt}		1.5	1.8	2.1	V
White noise clamp level	V _{wcl}		5.1	5.4	5.7	V
White noise threshold level	V _{wst}		3.6	3.9	4.2	V
Max. AFT voltage	V48h		8.0	8.7	—	V
Min. AFT voltage	V48l		—	0.5	1.0	V
AFT det. sensitivity	S _{aft}		15	23	30	kHz/V
FM det. output level	V _{O3}		150	230	350	mVrms
Sound distortion	THD		—	—	1.0	%
AM rejection	AMR		30	53	—	dB
SIF limiting voltage	V _{i lim}		—	34	45	dBu
Max. attenuation	G _{att}		65	80	—	dB
AF amp gain	G _{af}		17	20	23	dB
Y input impedance	Y _{inp}		11	15	20	kohm
Y input dynamic range	Y _d		2.0	3.0	—	Vp-p
Max. video output level	Y _{max}		6.3	6.8	7.3	V
Min. video output level	Y _{min}		—	0.3	0.7	V
Video output drive current	Y _{sink}		1.3	2.0	3.0	mA
Video AC gain	G _y		9	12	15	dB
Brightness control	G _{bri}		2.0	3.0	4.0	times
DC restoration	T _{dc}		95	99	—	%
Clamp terminal voltage	V _{clamp}		2.8	3.3	3.8	V
Contrast control voltage	V _{cont}		1.0	1.25	1.5	V
Contrast gain range	G _{cont}		12	18	24	dB
V-blk pulse output level	V _{vblk}		8.5	—	—	V
H-blk pulse output level	V _{hblk}		8.5	—	—	V
V-blk pulse width (50Hz)	V _{pvbik}		19	21	23	H
V-blk pulse width (60Hz)	V _{nvbik}		14	16	18	H

PIN CONFIGURATION

Pin No.	DESCRIPTION	PIN NO	DESCRIPTION
1	ATT. INPUT	28	OSD B INPUT
2	SOUND NF INPUT	29	V. SYNC SEP. FILTER
3	DE-EMPHASIS	30	VERTICAL OUTPUT
4	SIF DET. INPUT	31	VIDEO INPUT
5	SIF LIMITER OUT	32	TINT CONTROL
6	AGC FILTER 1	33	SHARPNESS CONTROL
7	AGC FILTER 2	34	BRIGHTNESS CONTROL
8	VIF/SIF GROUND	35	CHROMA INPUT
9	VIF INPUT	36	SYNC. SEP. INPUT
10	VIF INPUT	37	V/C/D GROUND
11	APC FILTER	38	DELAY LINE DRIVE
12	fsc VCXO	39	CONTRAST CONTROL
13	V/C/D Vcc	40	COLOR CONTROL
14	fsc VCXO	41	DELAYED SIGNAL INPUT
15	CLAMP FILTER	42	KLLER DET. FILTER
16	R-Y OUTPUT	43	VIF OUTPUT
17	B-Y OUTPUT	44	VIF/SIF VCC
18	G-Y OUTPUT	45	VIF TANK COIL
19	-Y OUTPUT	46	VIF TANK COIL
20	X-RAY PROTECTOR	47	AFT TANK COIL
21	FBP IN	48	AFT TANK COIL
22	HORIZONTAL OUTPUT	49	SIF INPUT
23	AFC FILTER	50	ATT. CONTROL
24	32f _H VCO	51	RF AGC OUTPUT
25	HORIZONTAL VCC	52	RF AGC DELAY
26	OSD R INPUT	53	SOUND OUTPUT
27	OSD G INPUT	54	OSD BRIGHT CONTROL