

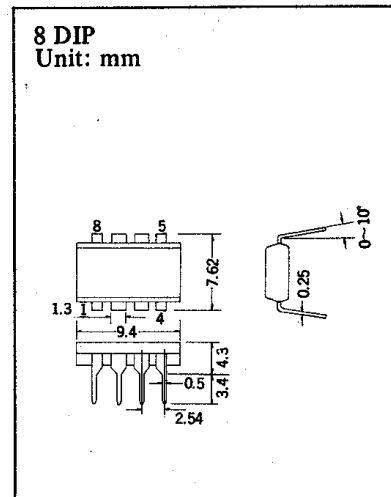
TV VIDEO IF LOW-LEVEL DETECTOR

The KA2111 is a monolithic integrated circuit designed for use in both color and monochrome television receivers.

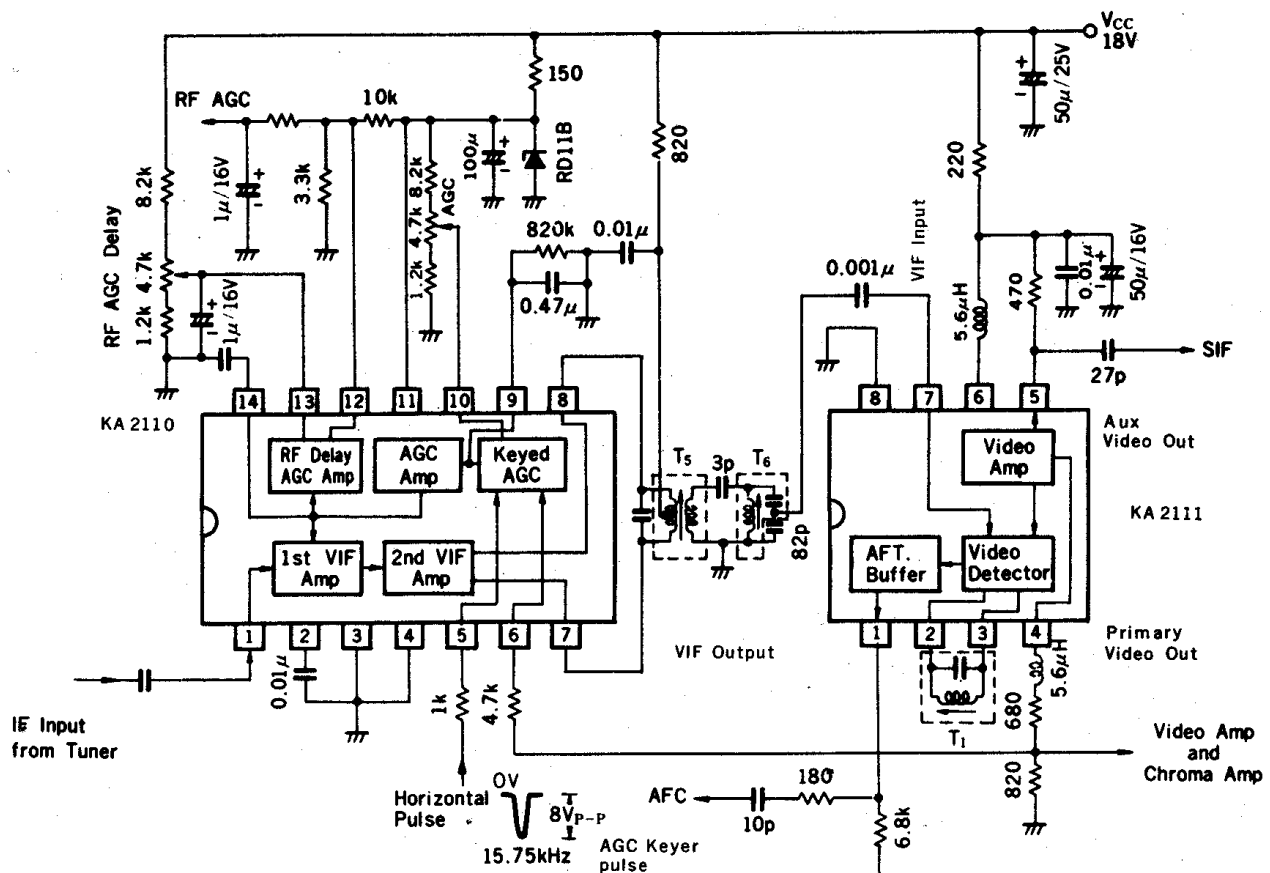
It is designed to replace the third IF stage, the detector, the video buffer and the AFC buffer.

An important feature is the extremely wide supply voltage range in consideration for using battery operation television receivers.

- Wide Operating Supply Voltage, $V_{CC} = 8.5 - 14V$.
- Conversion Gain - 33dB (typ)
- Excellent Differential Phase and Gain
- High Video Output
- Fully Balanced Detector



TYPICAL APPLICATION CIRCUIT FOR COLOR TELEVISION RECEIVER



KA2111

LINEAR INTEGRATED CIRCUIT

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

RATING	SYMBOL	VALUE	UNIT
Power Supply (Pin 5 and 6)	V_5, V_6	15	V
Input Voltage (Pin 7)	V_7	3	Vp-p
Supply Current (Pin 6)	I_6	20	mA
AFC Output Current (Pin 1)	I_1	30	mA
Video Output Current (Pin 4)	I_4	15	mA
Power Dissipation	P_d	275 ($T_a = 70^\circ\text{C}$)	mW
Operating Temperature	T_{opt}	-20 to 70	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to 125	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($V_{cc} = 12\text{V}$, $T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	Ckt
Total Supply Current	I_{cc}	$I_5 + I_6$, $R_4 = 560\Omega$	16	21	27	mA	1
Zero Signal DC Output Voltage	V_4	$R_4 = 560\Omega$	3.5	4.3	5.0	V	1
Input Signal Voltage		$f = 58\text{MHz}$, AM Mod 90% $f_m = 1\text{KHz}$, $V_o = 1.5\text{Vp-p}$		30	60	mVr.m.s.	2
Maximum Signal DC Output Voltage	V_{4max}	$f = 58\text{MHz}$, AM Mod 0% $V_{in} = 200\text{mVr.m.s.}$		0	0.5	V	2
Carrier Rejection	R_c	$f = 58\text{MHz}$, AM Mod 90% $V_{in} = 31.6\text{mVr.m.s.}$		34		dB	2
Bandwidth of IF	BW_{IF}	-3dB		80		MHz	
Bandwidth of Video Output	BW_{DET}	-3dB	8	11		MHz	2
AFC Buffer Output	V_{OAFc}	$f = 58\text{MHz}$, AM Mod 90% $f_m = 1\text{KHz}$, $V_{in} = 31.6\text{mVr.m.s.}$	80	150	200	mVr.m.s.	2
Input Resistance	R_{in}	$f = 58\text{MHz}$		3.5		$k\Omega$	3
Input Capacitance	C_{in}	$f = 58\text{MHz}$		3.0		pF	3
Output Resistance	R_{out}	$f = 58\text{MHz}$		30	100	Ω	
Internal Capacitance	R_{2-3}	$f = 58\text{MHz}$		4.4		$k\Omega$	4
Internal Capacitance	C_{2-3}	$f = 58\text{MHz}$		5		pF	4