

VIDEO & SOUND IF AMPLIFIER FOR TV SETS, VCRs

The KA2922/23 is a monolithic integrated circuit containing the VIF stage & SIF stage on a single chip in the 20 dual in-line package.

The use of the small sized package serves to make VCR tuner units smaller.

*KA2922: for forward AGC Type

*KA2923: for reverse AGC Type

FUNCTION

VIF Stage

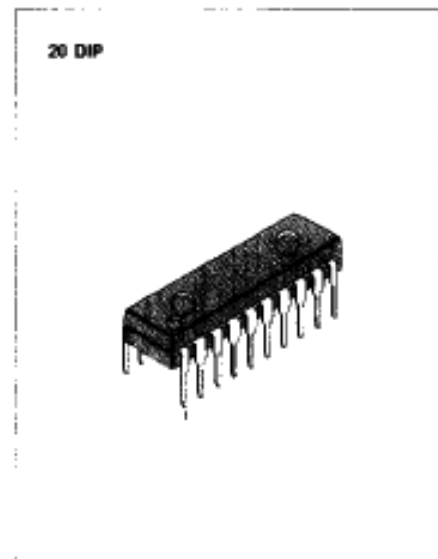
- VIF Amplifier
- Video Det. (AM DET)
- AFT
- Video Mute
- VIF AGC Noise canceller
- RF AGC
- Band width Noise canceller

SIF Stage

- Sound Mute
- SIF limiter Amp
- FM Detector

FEATURES

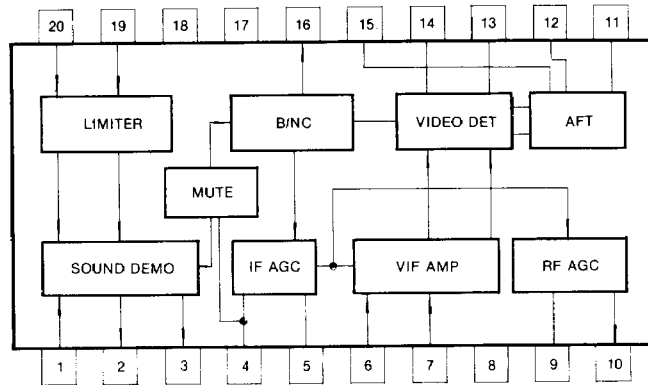
- High-Gain VIF requiring no pre AMP
- Higher AGC Speed
- Non-Adjusting can be attained by using a ceramic discriminator because of FM detection being quadrature detection.
- Possible to mute video, sound for VCR
- Small-sized package
- Minimum number of external parts required
- Operable from a 9V supply



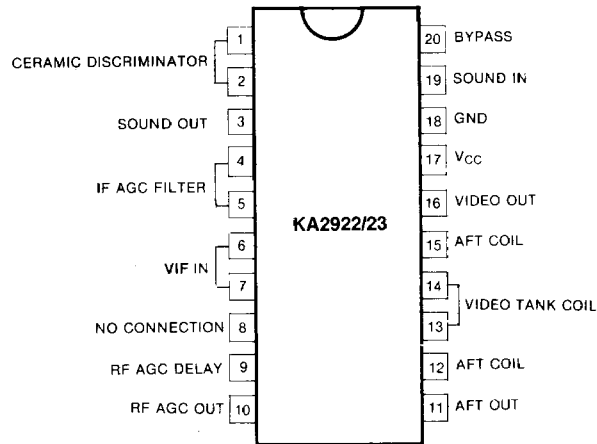
ORDERING INFORMATION

Device	Package	Operating Temperature
KA2922	20 DIP	- 20 ~ + 70°C
KA2923		

BLOCK DIAGRAM



PIN CONFIGURATION



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Maximum Voltage	V _{CC} (Pin 17)	14	V
Minimum Voltage	V _{CC} (Pin 17)	9	V
Maximum Power Dissipation	P _D	1.0	W
Maximum Operating Temperature	T _{opr}	- 20 ~ + 70	°C
Storage Temperature	T _{stg}	- 55 ~ + 150	°C

ELECTRICAL CHARACTERISTICS

PIF Section (Ta = 25°C, V_{CC} = 12V, fp = 45.75MHz, fm = 15KHz)

*KA2923

Characteristic	Symbol	Test Condition	Spec			Unit
			Min	Typ	Max	
Total Supply Current	I ₁₇	V _i = 0	42	58	74	mA
Maximum RF AGC Voltage	V _{10H}	Pin 4 (1.5V)	10	10.5	11	V
		Pin 4 (7V)*	8.5	8.9	9.2	V
Minimum RF AGC Voltage	V _{10L}	Pin 4 (7V)		0	0.5	V
		Pin 4 (1.5V)*		0	0.5	V
Video Output Voltage	V ₁₆	DC	5.6	6.1	6.6	V
AFT Output Voltage	V ₁₁	DC	4.5	6.58	7.5	V
Input Sensitivity	V _i	AM = 40%, V _O = 0.8V _{pp}	30	36	42	dBμ
AGC Range	G _R	AM = 40%, V _O = 0.8V _{pp}	57	65		dB
Video Output Amplitude	V _O (16)	V _i = 10mV _{rms} , AM = 78%	1.9	2.2	2.5	V _{pp}
Carrier Leakage	C _L	V _i = 100mV _{rms} , AM = 78%	50	55		dB
Maximum AFT Voltage	V _{11H}	V _i = 10mV _{rms} , 45.75MHz ± 1.5MHz	11	11.4		V
Minimum AFT Voltage	V _{11L}	V _i = 10mV _{rms} , 45.75MHz ± 1.5MHz		0.5	1.0	V
AFT Det. Sensitivity	S _i	V _i = 10mV _{rms} , Sweep	80	110	150	mV/KHz
White Noise Thres. Level	VW _{TH}	V _i = 10mV _{rms} , Sweep	6.4	6.8	7.2	V
White Noise Clamp Level	VW _{CL}	V _i = 10mV _{rms} , Sweep	4.2	4.6	5.0	V
Black Noise Thres. Level	VB _{TH}	V _i = 10mV _{rms} , Sweep	2.1	2.4	2.7	V
Black Noise Clamp Level	VB _{CL}	V _i = 10mV _{rms} , Sweep	3.8	4.2	4.6	V
Sync Tip Level Voltage	V _{sync}	V _i = 10mV _{rms}	3.3	3.6	3.9	V

SIF Section (Ta = 25°C, V_{CC} = 12V, fs = 4.5MHz, f₁₁ = 400Hz, f = ± 25KHz)

Characteristic	Symbol	Test Condition	Spec			Unit
			Min	Typ	Max	
SIF Det. Output Voltage	V _O (5)	f = ± 25KHz, fm = 400Hz V _i = 100mV _{rms}	450	680	850	mV _{rms}
Distortion	THD	f = ± 25KHz, fm = 400Hz V _i = 100mV _{rms}		0.5	1.3	%
AM Rejection	AMR	f = ± 25KHz, AM = 30% V _i = 100mV _{rms}	50	60		dB
SIF Limiting Voltage	V _{lim}	V _O = -3dB		200	500	μV _{rms}

TYPICAL APPLICATION CIRCUIT

