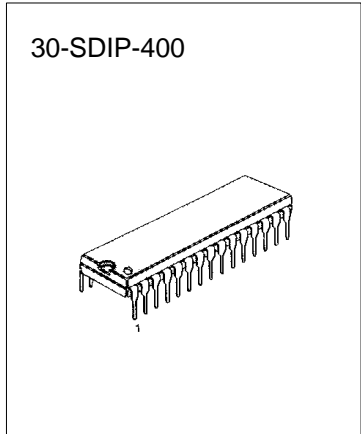


VIF/SIF SYSTEM FOR COLOR TV

The KA2919 is a silicon monolithic integrated circuit containing the VIF section and SIF section on a single chip in the shrink-type 30SDIP package. Since the KA2919 is capable of performing video detection and sound detection independently or simultaneously, it can be applied to various sets from popular types to high-grade types, according to the designer's policy.



FUNCTIONS

VIF

- VIF Amp
- Video Det
- Peak IFAGC
- B/W Noise Canceller,
- RF AGC
- AFT
- SIF Det

SIF

- SIF Limiter Amp
- FM Det
- DC ATT
- AF Driver

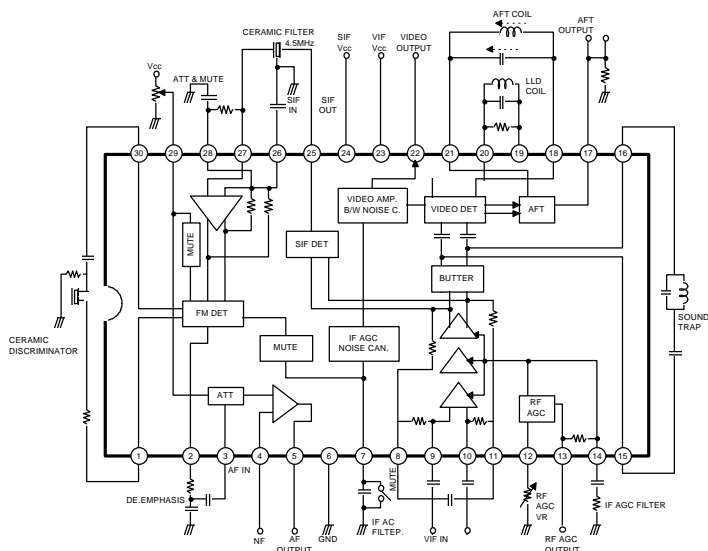
ORDERING INFORMATION

Device	Package	Operating Temperature
KA2919	30-SDIP-400	-20°C ~+70°C

FEATURES

- High-Gain VIF amp requiring no preamp
- High AGC speed
- Provides wide-band detection characteristic and meets sound MPX demodulation requirements because of FM detection is quadrature detection
- Possible to use sound REC pin (Pin 2), AUX pin (Pin 3)
- Possible to mute video, sound for VTR Pin 7 GND: Muting of both video and sound  
Pin 29 GND: Muting of sound only

BLOCK DIAGRAM

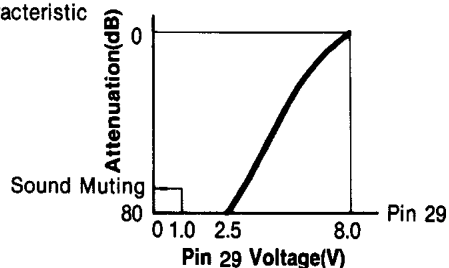


## ELECTRICAL CHARACTERISTICS

VIF SECTION ( $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$ ,  $f_P = 45.75\text{MHz}$ ,  $f_S = 41.25\text{MHz}$  (VIF),  $f_O = 4.5\text{MHz}$  (SIF))

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit	Test FIG.
Total Circuit Current	$I_{23}+I_{24}$	DC	59	74	98	mA	1
Maximum RF AGC Voltage	$V_{13H}$	DC	8.5	8.9	9.2	V	1
Minimum RF AGC Voltage	$V_{13L}$	DC		0	0.5	V	1
Quiescent Video Output Voltage	$V_{22}$	DC	5.6	6.1	6.6	V	1
Quiescent AFT Output Voltage	$V_{17}$	DC	4.5	6.5	7.5	V	1
Input Sensitivity	$S_{VI}$	$f_m = 400\text{Hz}$ 40% AM, $V_O = 0.8V_{PP}$	30	36	42	dB $\mu$	2
AGC Range	$V_{AGC}$	$f_m = 15\text{KHz}$ 78% AM, $V_O = \pm 1\text{dB}$	60	74		dB	2
Maximum Allowable Input	$V_{MAX}$	$f_m = 15\text{KHz}$ 78% AM, $V_O = \pm 1\text{dB}$	100	500		mV $_{rms}$	2
Video Output Amplitude	$V_{O(22)}$	$V_I = 10\text{mV}_{rms}$ , $f_M = 15\text{KHz}$ 78% AM	1.9	2.2	2.5	V $_{P-P}$	2
Output S/N	S/N	$V_I = 10\text{mV}_{rms}$ CW	48	54		dB	2
Carrier Leakage	CL	$V_I = 100\text{mV}_{rms}$ , $f_M = 15\text{KHz}$ 78% AM	50	57		dB	2
Maximum AFT Voltage	$V_{17H}$	$V_I = 10\text{mV}_{rms}$ SWEEP	11	11.5	12.0	V	2
Maximum AFT Voltage	$V_{17L}$	$V_I = 10\text{mV}_{rms}$ SWEEP	0	0.4	1.0	V	2
AFT Detection Sensitivity	$S_f$	$V_I = 10\text{mV}_{rms}$ SWEEP	70	100	140	mV/KHz	2
White Noise Threshold Level	$V_{WTH}$	$V_I = 10\text{mV}_{rms}$ SWEEP	6.4	6.8	7.2	V	2
White Noise Clamp Level	$V_{WCL}$	$V_I = 10\text{mV}_{rms}$ SWEEP	4.2	4.6	5.0	V	2
Black Noise Threshold Level	$V_{BTH}$	$V_I = 10\text{mV}_{rms}$ SWEEP	1.9	2.2	2.5	V	2
Black Noise Clamp Level	$V_{BCL}$	$V_I = 10\text{mV}_{rms}$ SWEEP	3.8	4.2	4.6	V	2
SIF Output Signal Voltage	$V_{O(25)}$	P/S = 20dB	40	60	100	mV $_{rms}$	2
Frequency Characteristic	$f_C$	-3dB	6	8		MHz	2
Differential Gain	DG	$V_I = 10\text{mV}_{rms}$ 87.5% VIDEOMOD		4	10	%	2
Differential Phase	DP	$V_I = 10\text{mV}_{rms}$ 87.5% VIDEOMOD		3	6	deg	2
Input Resistance	$R_I$		1.0	1.5	2.0	Kohm	2
Input Capacitance	$C_I$			3.5	7.0	pF	2

\*Electronic Volume Control Characteristic

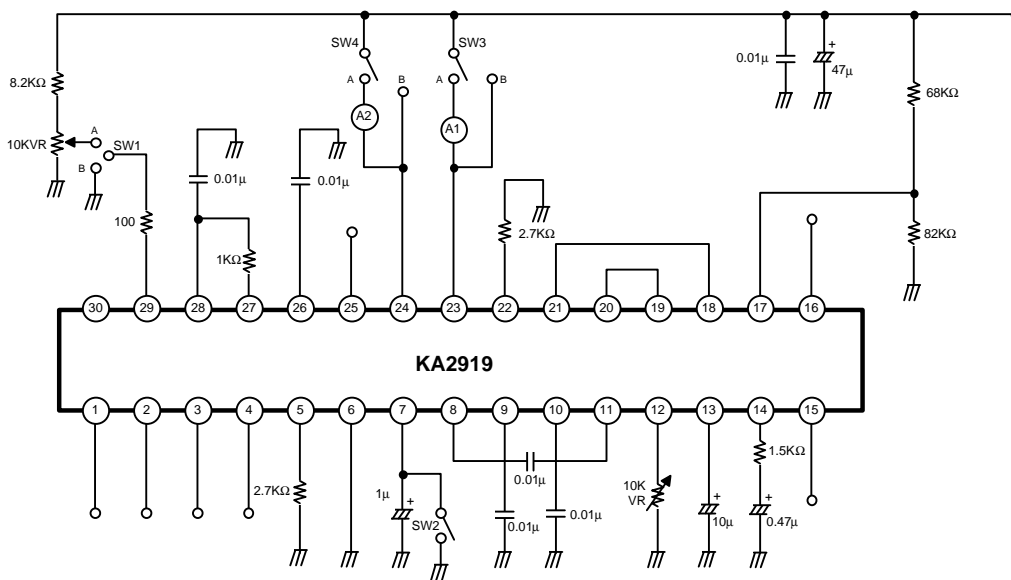


SIF SECTION ( $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$ ,  $f_P = 45.75\text{MHz}$ ,  $f_S = 41.25\text{MHz}$  (VIF),  $f_O = 4.5\text{MHz}$  (SIF))

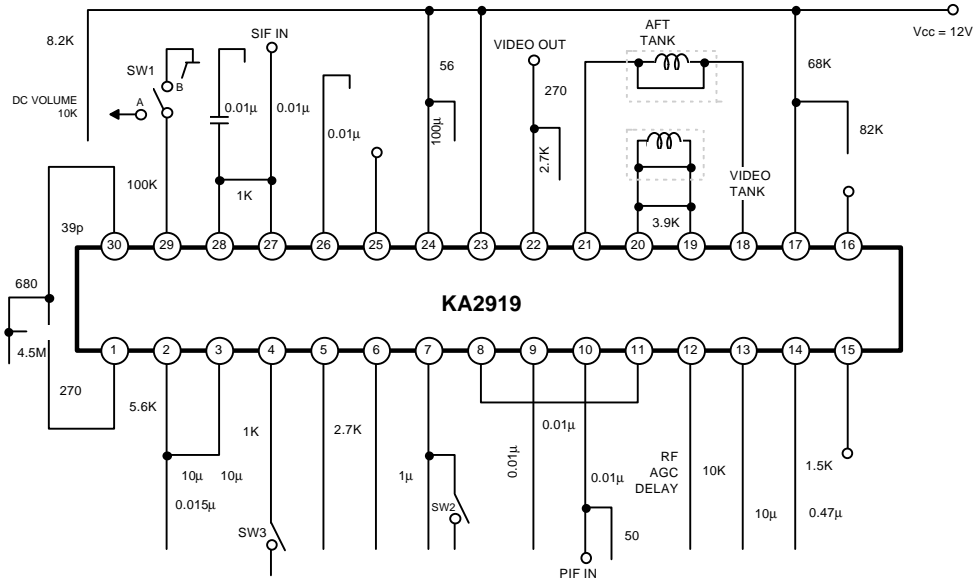
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit	Test FIG.
SIF Limiting Voltage	VI (LIM)	-3dB		200	400	$\mu\text{V}_{\text{rms}}$	2
Detection Output Voltage	$V_O$ (2)	$V_I = 100\text{mV}_{\text{rms}}$ , $f_m = 400\text{Hz}$ , $f = \pm 25\text{KHz}$	450	680	850	$\text{mV}_{\text{rms}}$	2
Distortion	THD (2)	$V_I = 100\text{mV}_{\text{rms}}$ , $f_m = 400\text{Hz}$ , $f = \pm 25\text{KHz}$		0.5	1.0	%	2
AM Rejection	AMR	$V_I = 100\text{mV}_{\text{rms}}$ , $f_m = 400\text{Hz}$ , $f = \pm 25\text{KHz}$ 30% AM	50	60		dB	2
DCVR Maximum Attenuation	ATT	$V_I = 200\text{mV}_{\text{rms}}$ , $f = 400\text{Hz}$	70	80		dB	2
AF Amp Gain	$G_{\text{AF}}$	$V_I = 100\text{mV}_{\text{rms}}$ , $f = 400\text{Hz}$	18	20	22	dB	2
AF Amp Outpt Voltage	$V_O$ (5)	$V_O$ (5) THD = 10%, $f = 400\text{Hz}$	3	4		$\text{V}_{\text{rms}}$	2

TEST CIRCUIT

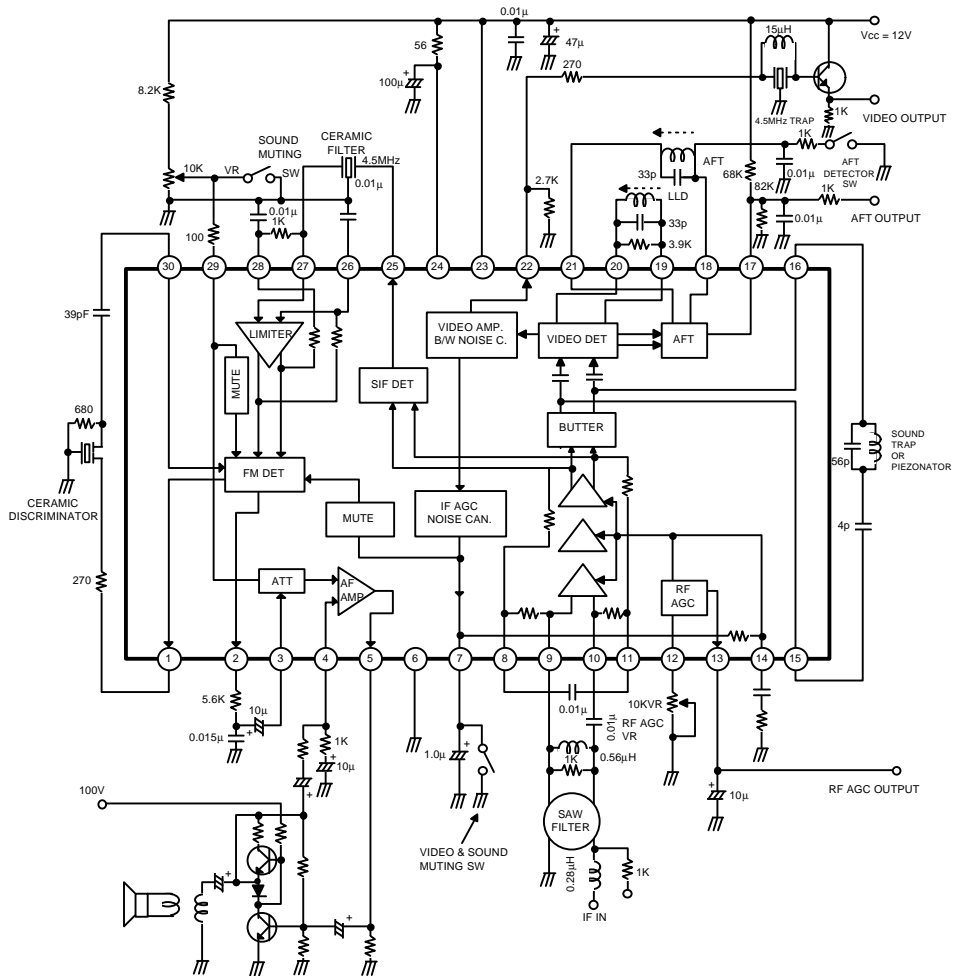
1. DC TEST



2. AC TEST



TYPICAL APPLICATION CIRCUIT



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