

# HA11221

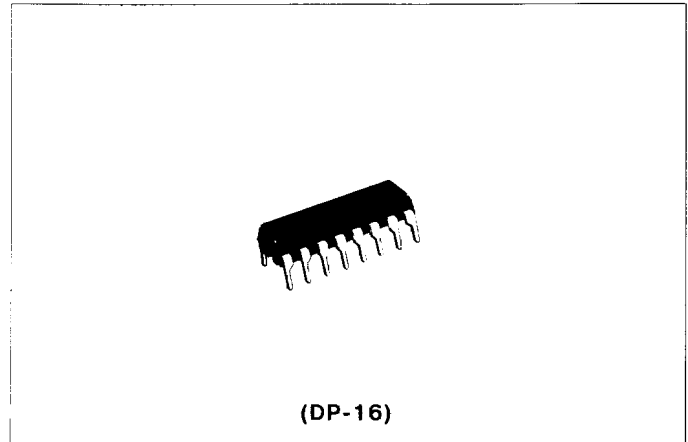
## B/W TV Picture IF Amplifier

### FUNCTIONS

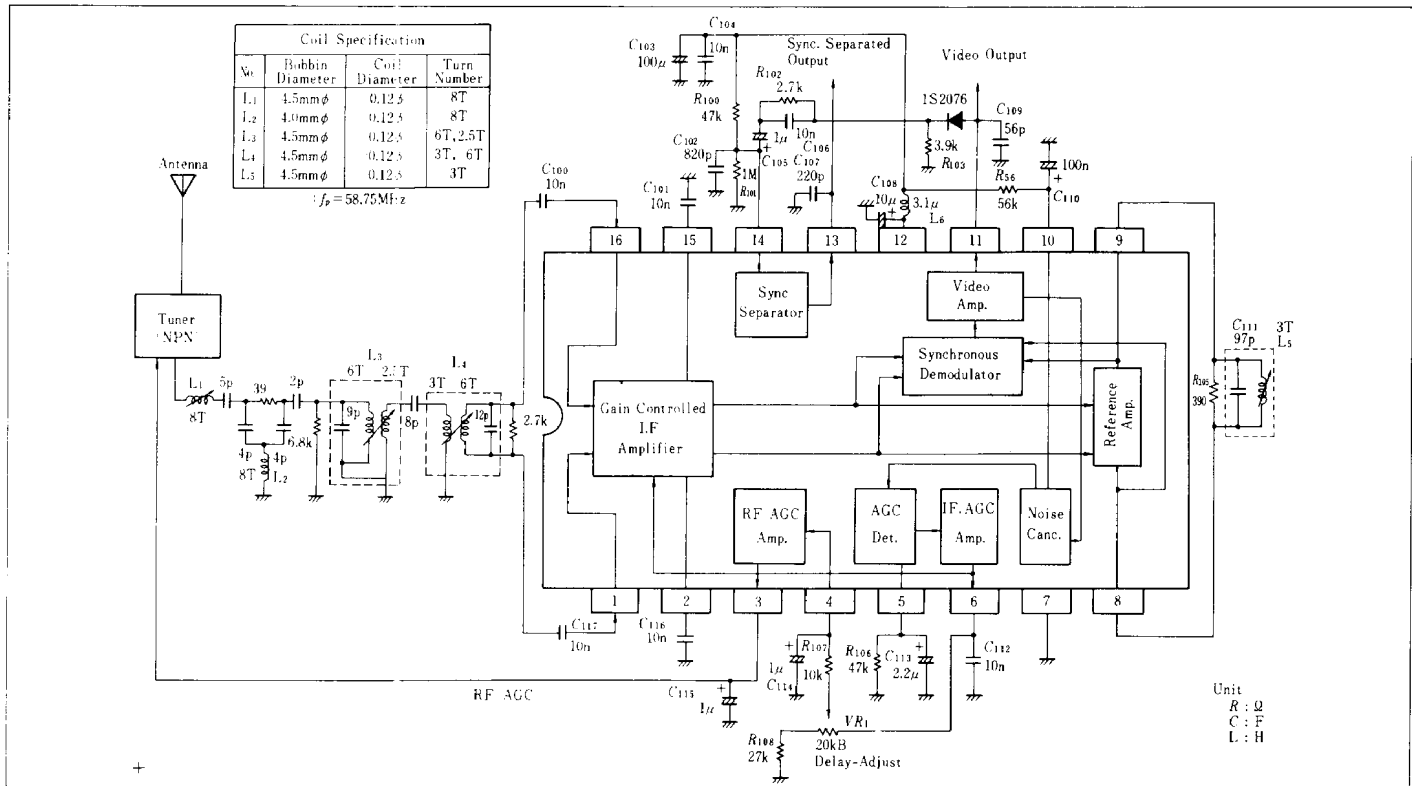
- Picture IF Amplifier
- Video Detector
- AGC Detector
- Noise Canceller
- Forward AGC
- Sync. Separator

### FEATURES

- Particularly useful in B/W TV's with bipolar tuner.
- Low external parts count.
- Designed to operate at  $V_{CC}$  down to 6.5V.
- Video output level stabilized, independent of supply voltage and ambient temperature.



### BLOCK DIAGRAM



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

Item	Symbol	Ratings	Unit
Supply Voltage	$V_{CC}$	15*	V
Max. Input Voltage	$V_{in\ max}$	3	V <sub>p-p</sub>
Video Output Current	$I_{I1}$	3	mA
Max. Applicable Voltage	3, 4 pin	$V_3, V_4$	$V_{CC}$
	6 pin	$V_6$	6.3
Power Dissipation	$P_T$	850**	mW
Operating Temperature	$T_{opr}$	-20 to +65	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

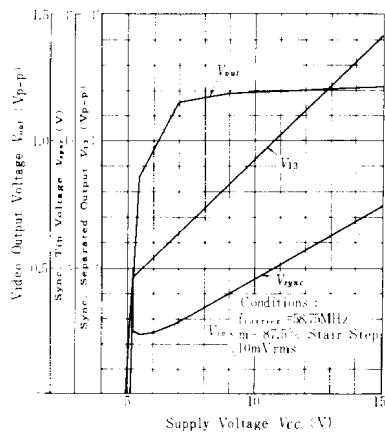
\* Value at  $t \leq 60\text{sec min.}$

\*\* Value at  $T_a = 60^\circ\text{C}$

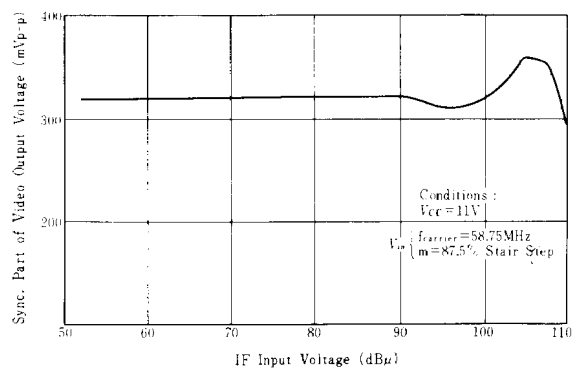
**ELECTRICAL CHARACTERISTICS** ( $V_{CC}=11V$ ,  $f_c=58.75MHz$ ,  $T_a=25^\circ C$ )

Item	Symbol	Test Conditions	min.	typ.	max.	Unit
Input Sensitivity	$V_{i(sens)}$	$m=87.5\%$	37	42	47	$dB_\mu$
Video Output Voltage	$V_{out}$	$V_{in}=10mV_{rms}$ , $m=87.5\%$	0.95	1.21	1.47	Vp-p
Min. RF AGC Voltage	$V_{3\ min}$	$V_{in}=0$	1.6	1.8	2.0	V
Max. RF AGC Voltage	$V_{3\ max}$	4 pin $\rightarrow$ GND	6.0	7.0	8.0	V
Sync. Separated Output	$V_{13}$	Vertical Sync. Pulse	9.0	10.3	—	V
Video Band Width	$G_W$	$V_{out}(f=6MHz)/V_{out}(f=100kHz)$	-13	-6	-1	dB
Sync. Tip Voltage	$V_{sync}$	$V_{in}=10mV_{rms}$	4.64	5.14	5.64	V
Supply Current	$I_{CC}$	$V_{in}=0$	33	41	53	mA

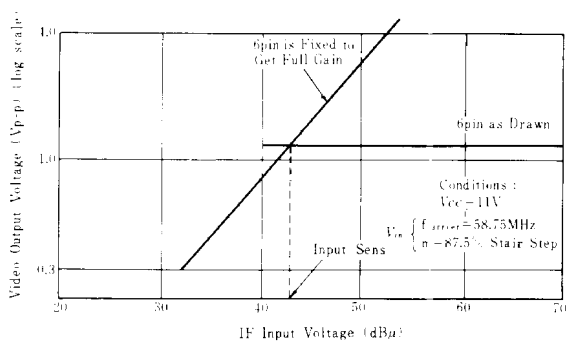
**VIDEO OUTPUT VOLTAGE, SYNC. TIP VOLTAGE AND SYNC. SEPARATED OUTPUT VS. SUPPLY VOLTAGE**



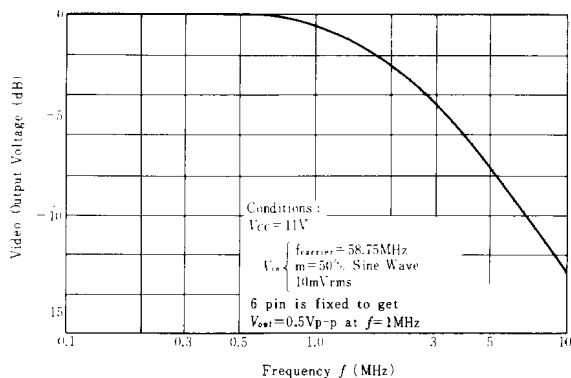
**MAXIMUM INPUT CHARACTERISTICS**



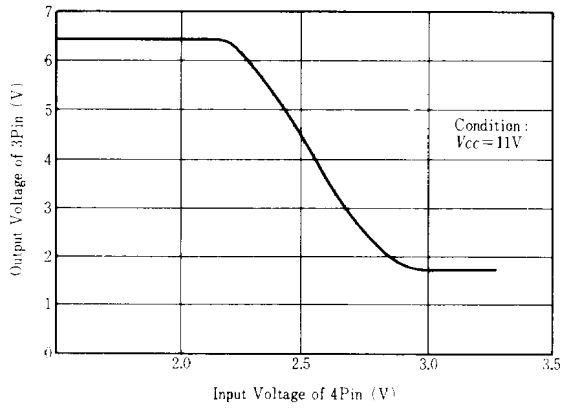
**INPUT SENSITIVITY CHARACTERISTICS**



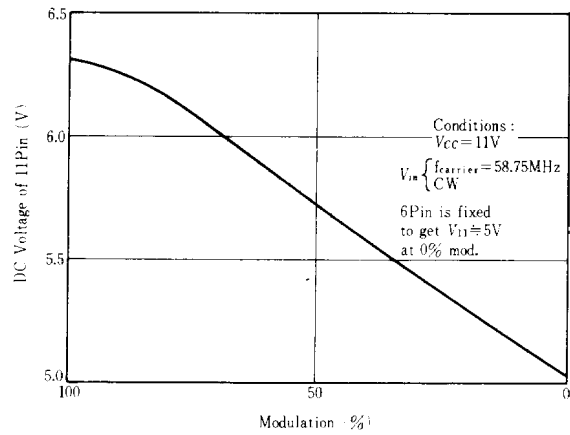
**VIDEO OUTPUT VOLTAGE VS. FREQUENCY**



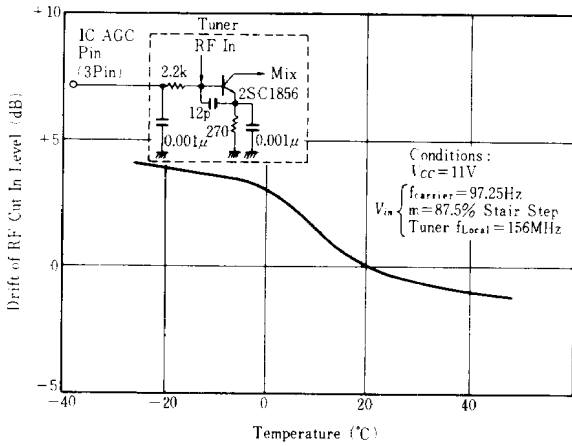
**INPUT-OUTPUT CHARACTERISTICS OF RF AGC CIRCUIT**



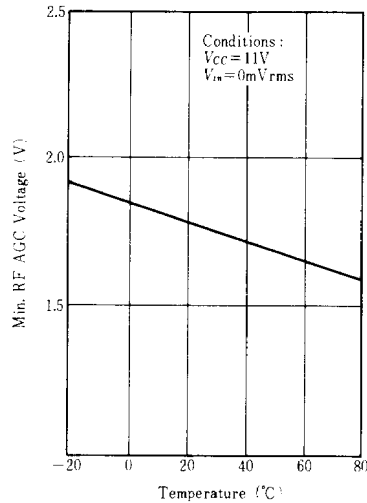
**LINEARITY**



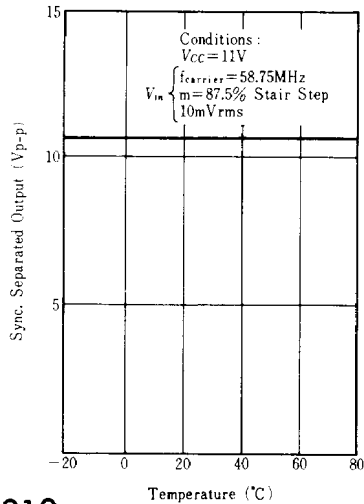
**AGC CUT IN LEVEL VS. TEMPERATURE**



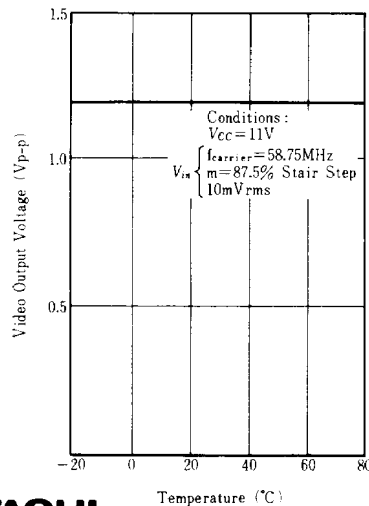
**MIN. RF AGC VOLTAGE VS. TEMPERATURE**



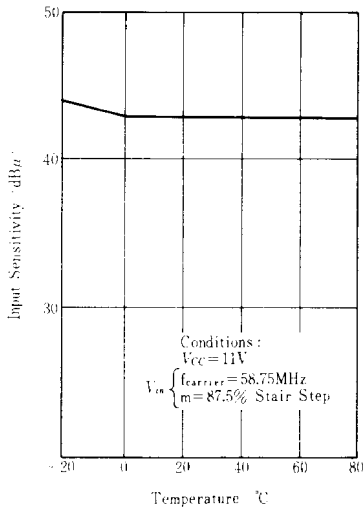
**SYNC. SEPARATED OUTPUT VS. TEMPERATURE**



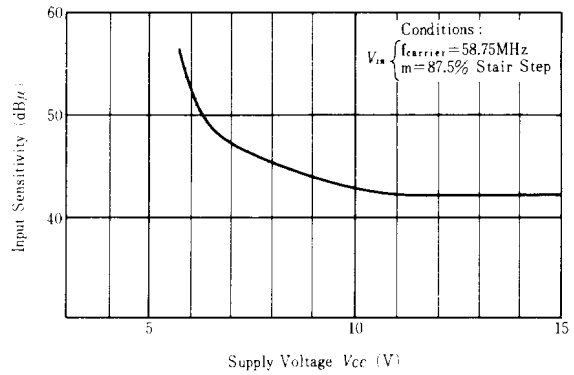
**VIDEO OUTPUT VOLTAGE VS. TEMPERATURE**



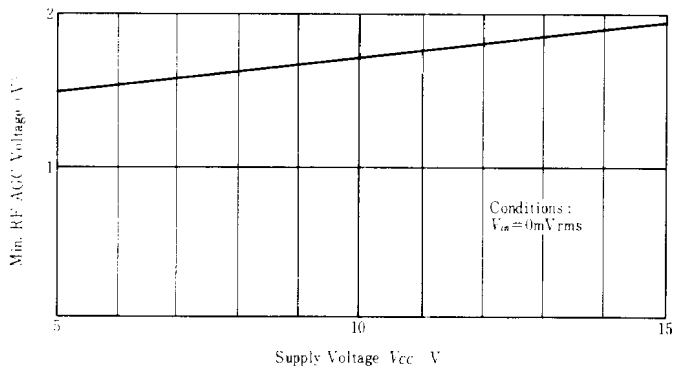
**INPUT SENSITIVITY VS. TEMPERATURE**



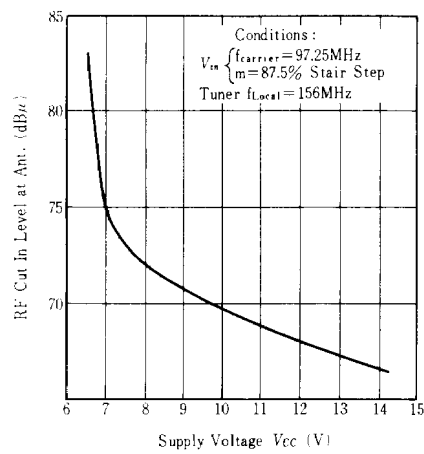
**INPUT SENSITIVITY VS. SUPPLY VOLTAGE**



**MIN. RF AGC VOLTAGE VS. SUPPLY VOLTAGE**



**AGC CUT IN LEVEL VS. SUPPLY VOLTAGE**



**VIDEO OUTPUT VOLTAGE VS. LOCAL OSC. FREQUENCY**

