

# HA11238

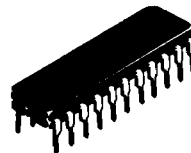
## Color TV Picture IF Amplifier

### FUNCTIONS

- 3 stage picture IF amplifier
- Quasi-synchronous video detector
- AFT
- Video amplifier
- AGC detector
- RF AGC amplifier
- Noise canceller
- White spot inverter

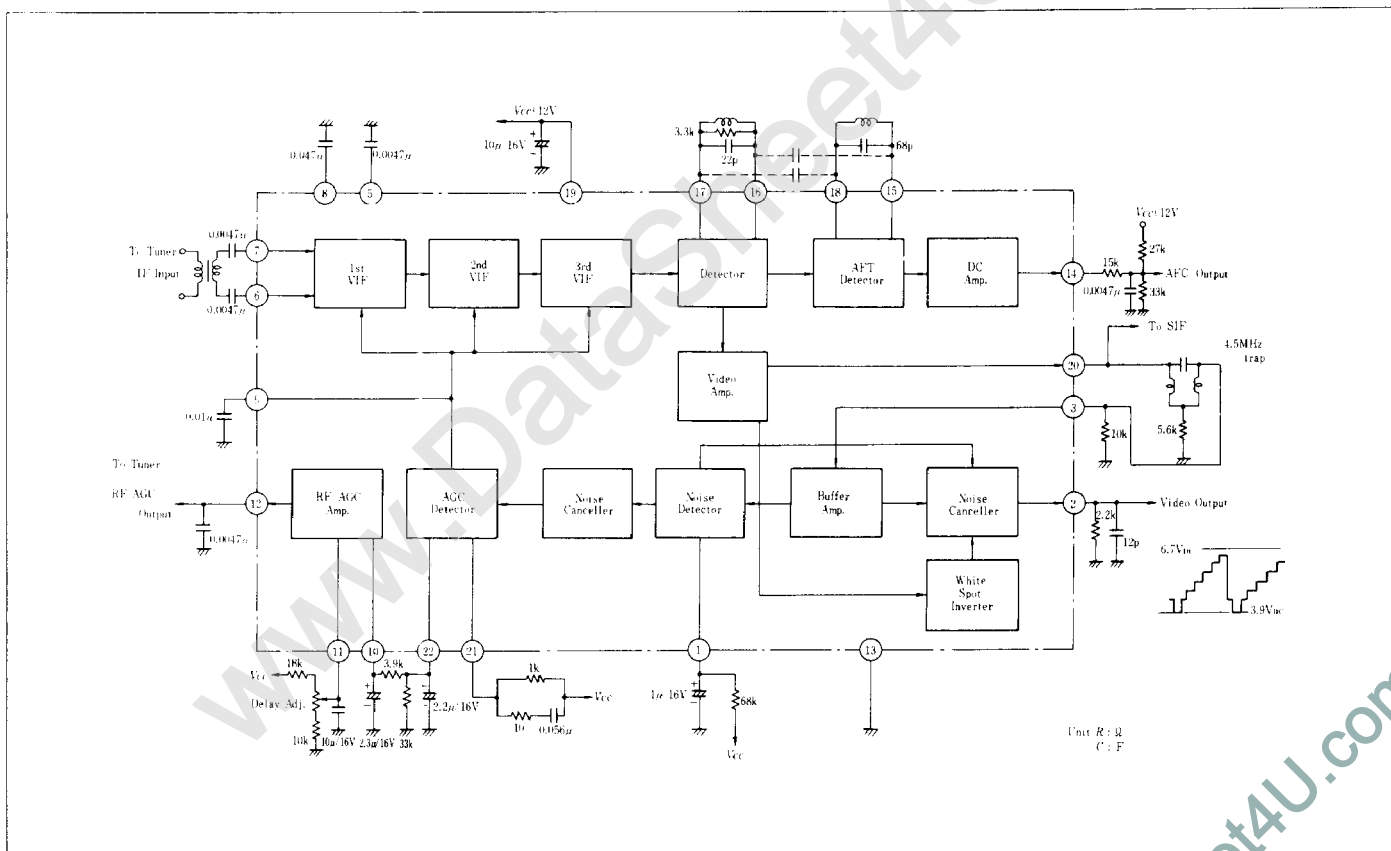
### FEATURES

- Input sensitivity:  $100\mu\text{V}$  typ. @58MHz
- Differential gain; 5% typ. @ $m=87.5\%$
- Differential phase; 5 degree typ. @ $m=87.5\%$
- Low noise figure; 8dB typ. @Gain reduction=30dB
- Peak AGC detection



(DP-22)

### BLOCK DIAGRAM



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

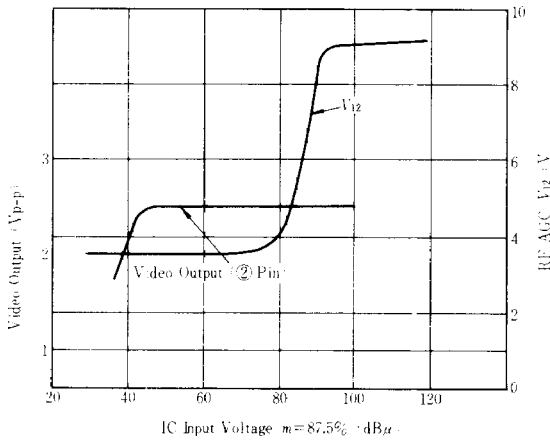
Item	Symbol	Rating	Unit
Supply Voltage	$V_S$	15	V
Power Dissipation	$P_T^*$	830	mW
Operating Temperature	$T_{opr}$	-15 to +65	$^\circ\text{C}$
Storage Temperature	$T_{sig}$	55 to +125	$^\circ\text{C}$

\* Value at  $T_a=65^\circ\text{C}$

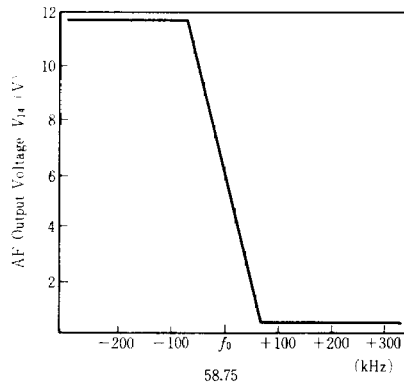
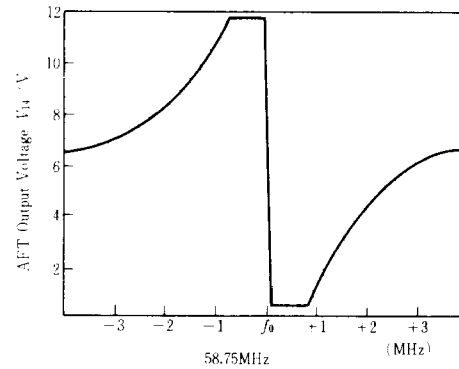
■ ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ ,  $V_S = 12\text{V}$  unless otherwise specified)

Item	Symbol	Test Conditions	min.	typ.	max.	Unit
Supply Current	$I_S$		35	50	70	mA
Input Sensitivity	$V_{in}$	$f = 58.75\text{MHz}$ , $m = 87.5\%$ , $V_{out} = 2.45V_{p-p}$	—	100	—	$\mu\text{V}$
Maximum Video Output	$V_{video}$	Carrier Zero to Sync. tip	2.08	2.45	2.82	$V_{p-p}$
Sync. Tip Voltage	$V_{sync}$	$f = 58.75\text{MHz}$ , $V_i = 10\text{mV}$	3.4	3.9	4.4	$V_{DC}$
Maximum Input Voltage	$V_{in\ max.}$	$DG = 1\text{dB}$ , $f_d = 57\text{MHz}$ , $f_s = 56\text{MHz}$	—	100	—	mVrms
Noise Figure	NF	$f_o = 57\text{MHz}$ , $GR = 30\text{dB}$	—	8	—	dB
Differential Gain	DG	$f = 58.75\text{MHz}$ , $m = 87.5\%$	—	5	—	%
Differential Phase	DP		—	5	—	degree
Carrier Rejection	CR	$f = 58.75\text{MHz}$ , $V_o = 2.80V_{p-p}$	40	—	—	dB
Frequency Response	$f_C$	-3dB point	—	10	—	MHz
Minimum RF AGC Voltage	$V_{12\ min.}$		3.0	3.5	4.0	V
Maximum RF AGC Voltage	$V_{12\ max.}$		8.5	9.0	9.5	V
Minimum AFC Output Voltage	$V_{14\ min.}$		—	—	1.0	V
Maximum AFC Output Voltage	$V_{14\ max.}$		11.0	—	—	V
AFC Control Sensitivity	$f_s$	$V_{14} = 10V_{p-p}$ , $f_o = 58.75\text{MHz}$	—	150	300	kHz
Frequency Range of Saturated Voltage	$f_r$	$V_{14} > 11.0\text{V}$ or $V_{14} < 1\text{V}$	0.5	—	—	MHz
D. C Output Voltage (pin 14)	$V_{AFT}$	$f = 52\text{MHz}$ , $V_i = 10\text{mV}$	5.5	6.5	7.5	V

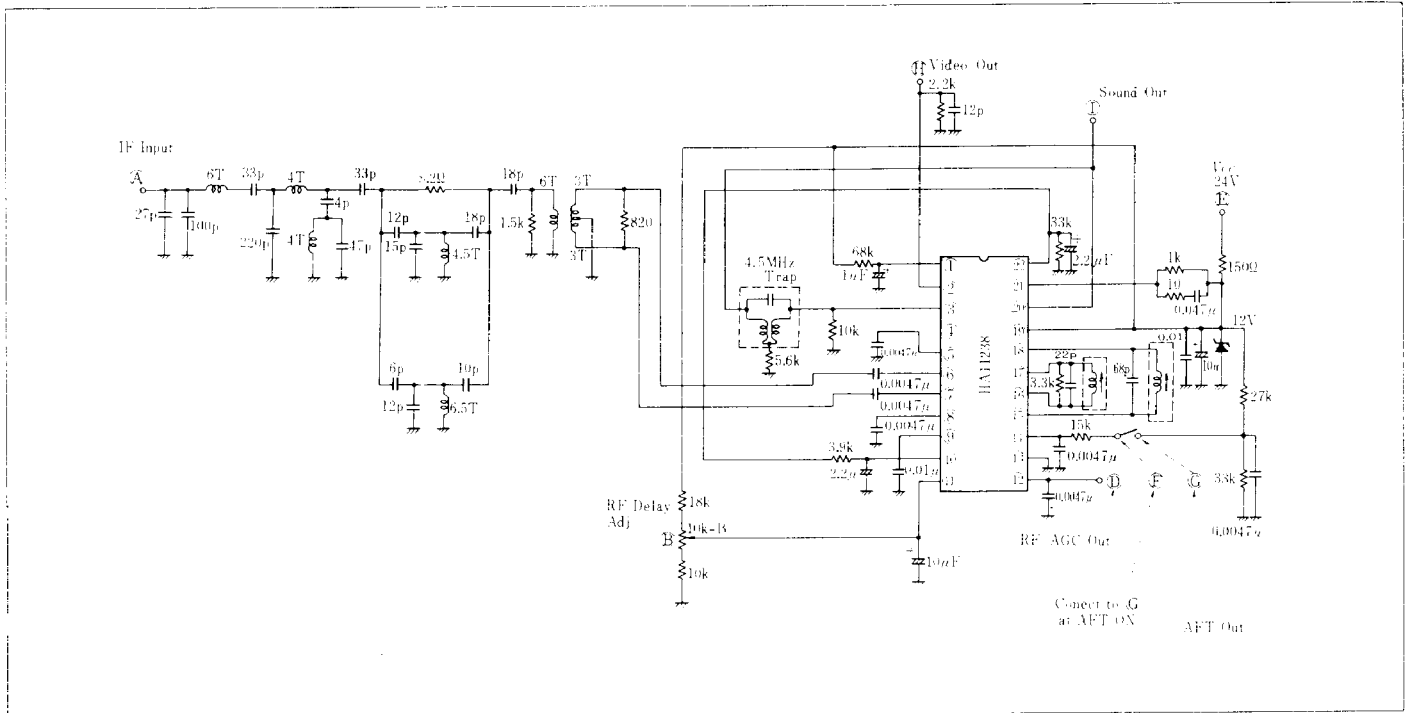
VIDEO OUTPUT & RF AGC vs. IC INPUT VOLTAGE



AFT OUTPUT VOLTAGE vs. FREQUENCY



■ CIRCUIT EXAMPLE



IF AGC VOLTAGE & RF AGC VOLTAGE vs. ANTENNA INPUT

