

Type	Ordering code	Package
TBA 1440 G	Q67000-A1022	DIP 16

Highly amplifying controlled video IF amplifier including controlled demodulator, low-ohmic video outputs for positive and negative signal, gated control, and delayed tuner control.

**TBA 1440 G for PNP tuners**

**Features**

- High integration
- Large control range
- High input sensitivity
- Minimal 1.07 MHz disturbance
- Positive and negative signal
- Separate adjustment for white and black levels
- Excellent tuning behavior

**Maximum ratings**

Supply voltage	$V_S$	15 <sup>1)</sup>	V
Voltages	$V_4$	5	V
	$V_5$	20	V
Ohmic resistance between pin 8 and 9	$V_{14}$	5	V
	$R_{8-9}$	≤ 20	Ω
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-40 to 125	°C
	Thermal resistance (system-air)	$R_{thSA}$	90

**Operating range**

Supply voltage	$V_S$	10.5 to 15	V
Ambient temperature	$T_A$	-25 to 60	°C

1) intermittently 16.5 V

**Characteristics**

$V_{13} = 13 \text{ V}$ ;  $f_{iF} = 38.9 \text{ MHz}$ ;  $T_A = 25^\circ\text{C}$ ;

(all data measured with respect to ground, unless otherwise stated)

		min	typ	max	
Current consumption	$I_{13}$	33	42	61	mA
DC voltage at output 11					
$V_{13} = 15 \text{ V}$ ; $V_1 = 0$					
$R_{14-3} = \infty$	$V_{11}$		5.5		V
$R_{14-3} = 0$	$V_{11}$		9.6		V
DC voltage at output 12					
$V_{13} = 15 \text{ V}$ ; $V_1 = 0$					
$R_{14-3} = \infty$	$V_{12}$		1.9		V
$R_{14-3} = 0$	$V_{12}$		3.5		V
White level deviation					
	$\Delta V_{11}/\Delta V_{13}$		100		mV/V
	$\Delta V_{12}/\Delta V_{13}$		20		mV/V
Resistance for $\Delta V_{11} = 1 \text{ V}$	$R_{14-3}$		8.5		k $\Omega$
AGC threshold $V_{10} = \text{sync pulse level}$					
for $R_{10-11} = 0$	$V_{10} = V_{11}$		1.9		V
Resistance for sync pulse level					
deviation of 1 V	$R_{10-11}$		2.4		k $\Omega$
Sync pulse level with async					
or without gating pulses	$V_{11\text{sync}}$		0.5		V
(peak level control)					
Video output voltage	$V_{\text{video}}$		3.0		V
Control current for tuner prestage ( $V_5 > 2 \text{ V}$ )	$I_5$	10	15		mA
(10 dB after AGC)					
IF control voltage for max gain	$V_4$	0		0.5	V
for min gain	$V_4$	2.5		5	V
Gating pulse voltage	$-V_7$	2		5	V
Residual IF (basic frequency)	$V_{11}; V_{12}$		10		mV
Output current to ground	$I_{11}; I_{12}$			5	mA
to plus	$I_{11}; I_{12}$			-1	mA
Input impedance at max gain	$Z_{1-16}$		1.8/2		k $\Omega$ /pF
at min gain	$Z_{1-16}$		1.9/0		k $\Omega$ /pF
Input voltage <sup>1)</sup> for $V_{1\text{pp}} = 3 \text{ V}$	$V_i$	70	100	200	$\mu\text{V}$
Video bandwidth (-3 dB)	$B_{\text{video}}$	6	7		MHz
AGC range	$\Delta G$		55		dB
Intermodulation ratio (1.07 MHz) with					
reference to $f_{cc}^{2)*}$	a		45		dB
Output impedance	$Z_{q8-9}$		2/2.5		k $\Omega$ /pF

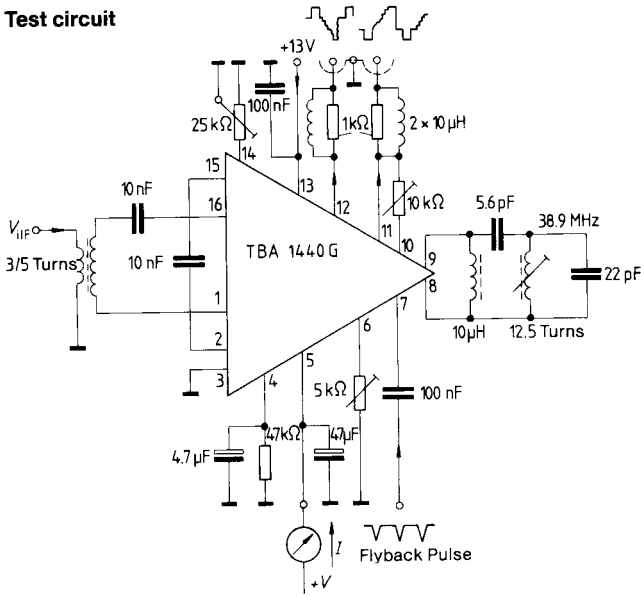
1) According to test circuit:  $V_i = \text{rms sync pulse level at } 60 \Omega$

2) Test level  $a_{cc} = -3 \text{ dB}$

$a_{sc} = -20 \text{ dB}$  referred to picture carrier

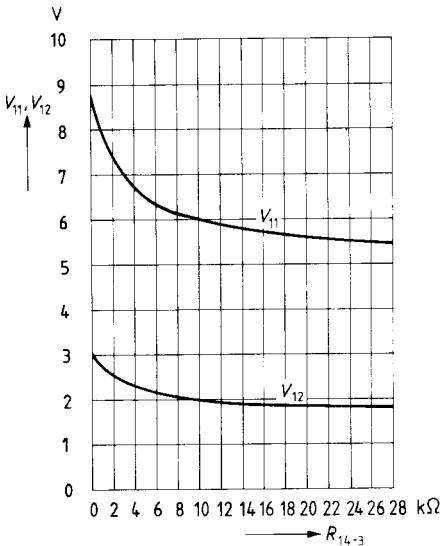
\* (sound-color-beat frequency)

Test circuit

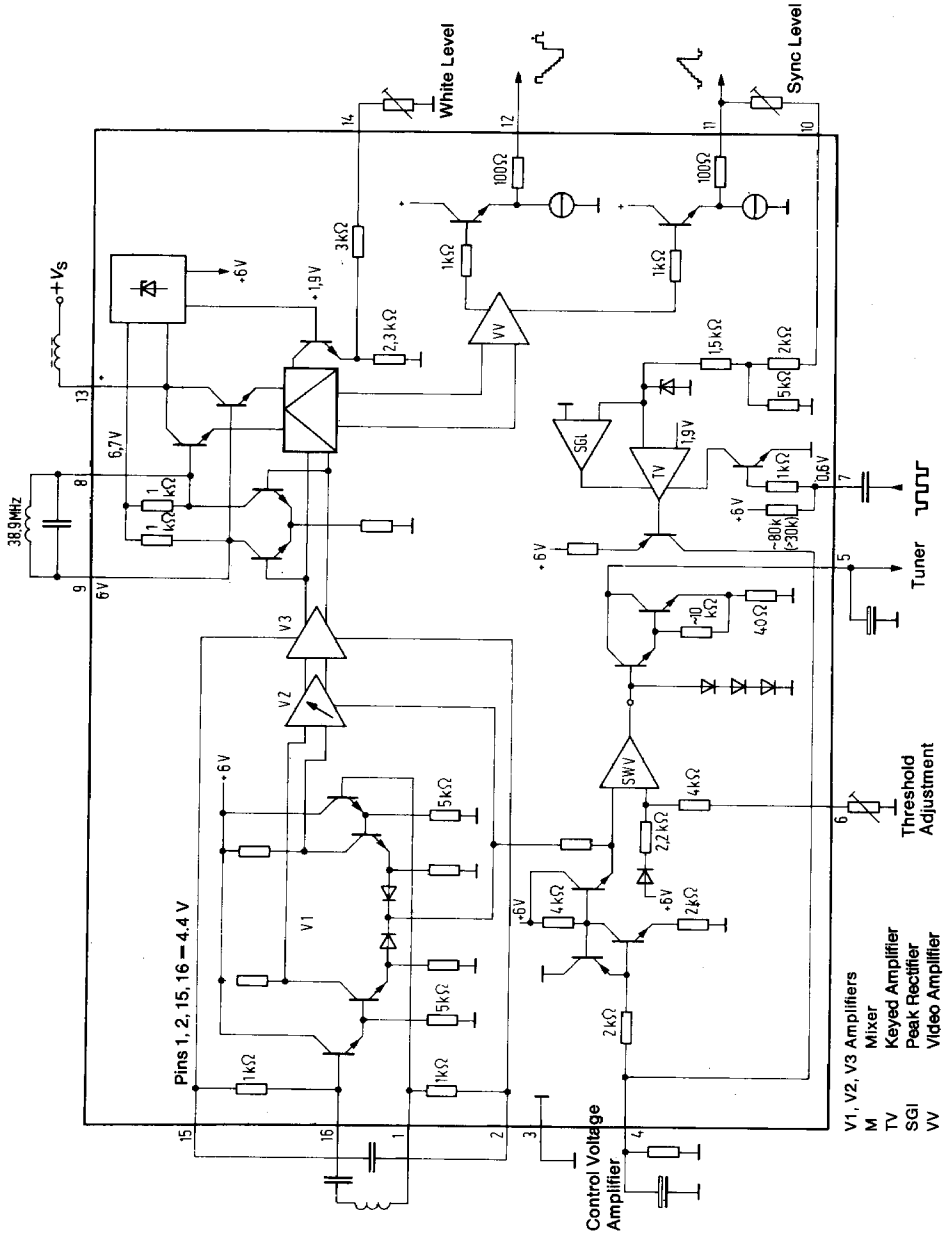


DC output voltage versus white level resistance

$V_S = 13 \text{ V}; R_{10-11} = \infty$



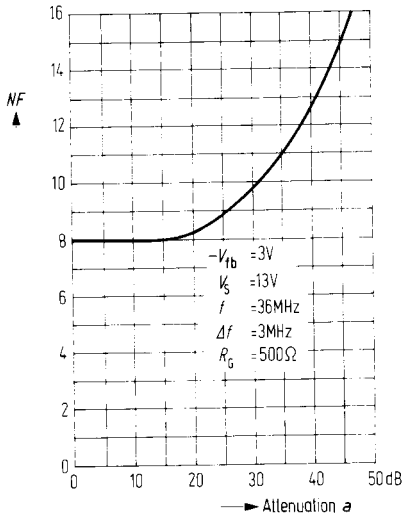
Block diagram



**Noise figure versus attenuation**

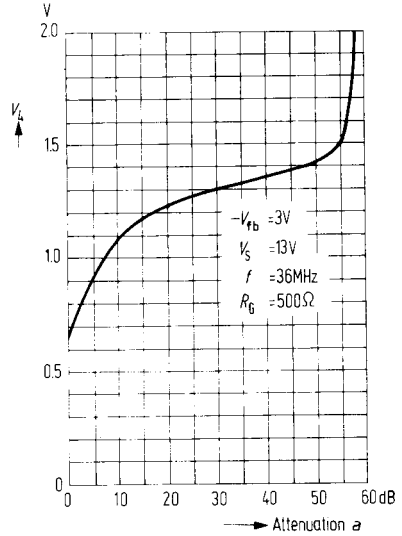
(measured at video frequency)

$V_S = 13\text{ V}$ ,  $f = 36\text{ MHz}$ ,  $\Delta f = 3\text{ MHz}$ ,  
 $R_G = 500\ \Omega$ ,  $-V_{fb} = 3\text{ V}$



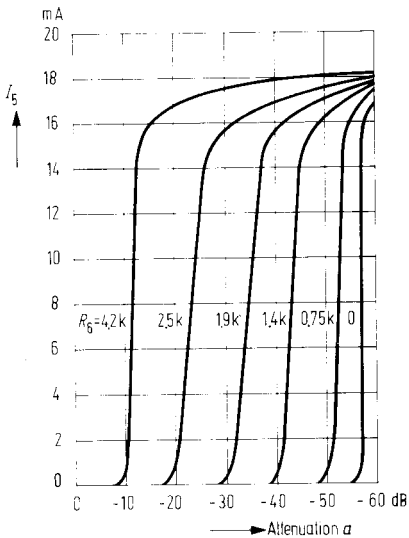
**Control voltage versus attenuation**

$-V_{fb} = 3\text{ V}$ ,  $V_S = 13\text{ V}$ ,  $f = 36\text{ MHz}$ ,  
 $R_G = 500\ \Omega$



**Tuner control current versus attenuation**

$R_G = \text{parameter}$



**Application circuit**

suitable for connection of video recorders (75 Ω)

