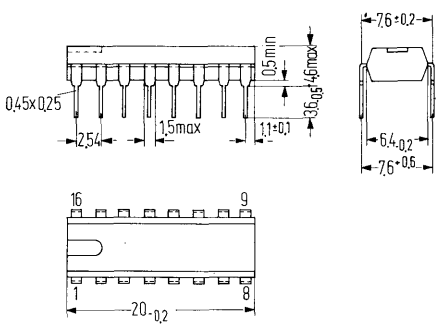
The types TBA 1440 G (for pnp tuner prestages) and TBA 1441 (for npn tuner prestages) have been developed from TBA 440 P/N. Their decisive improvements are

- Reduced residual IF at outputs 11 and 12
- Reduced residual IF at pin 13
- Considerably improved intermodulation distance
- Excellent tuning attitude even with low-ohmic tank circuit at demodulator

The IC's contain a high – amplifying controllable video IF amplifier, a controlled demodulator and two low-resistance video outputs with positive- and negative-going signals as well as the complete keyed control and delayed tuner control.

- Large control range with low noise and wide dynamic range
- High sensitivity
- Controlled demodulator, so minimum 1.07 MHz disturbances
- Internal temperature stabilization
- The white levels of the video signals at the positive and negative video output are independent of the operating voltage.
- The whites **and** black levels can be adjusted separately

Package outlines TBA 1440 G, TBA 1441



Type	Ordering codes
TBA 1440 G	Q67000-A1022
TBA 1441	Q67000-A1224

Plastic plug-in package
20 A 16 DIN 41866
16 pins, dual-in-line
Weight approx. 1.2 g
Dimensions in mm

Absolute maximum ratings

Supply voltage	V_{13}	15[1])	V
Voltages	V_4	5	V
	V_5	20	V
	V_{14}	5	V
Ohmic resistance between pins 8 and 9	R_{8-9}	≤20	Ω
Thermal resistance (system-air)	R_{thsa}	100	K/W
Junction temperature	T_j	150	°C
Storage temperature	T_s	–40 to +125	°C

Range of operation

Supply voltage	V_{13}	10.5 to 15	V
Ambient temperature in operation	T_{amb}	–25 to +60	°C

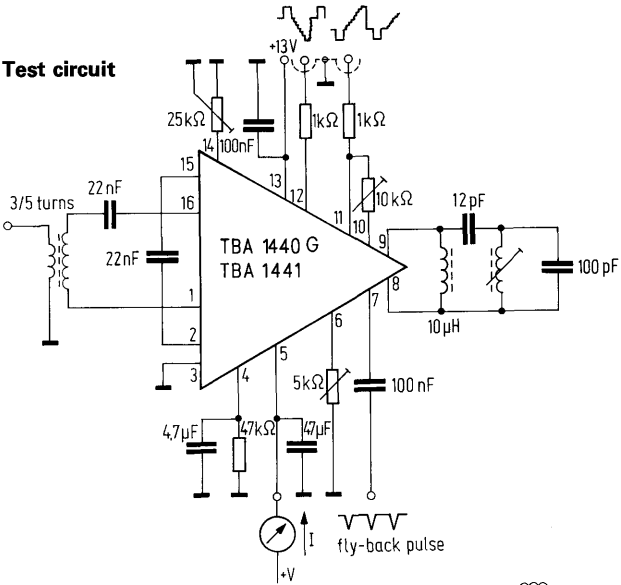
[1]) briefly 16.5 V

Electrical characteristic (V_{13} = 13 V; f_{IIF} = 38.9 MHz; T_{amb} = 25 °C; all data with reference to ground, unless otherwise stated)

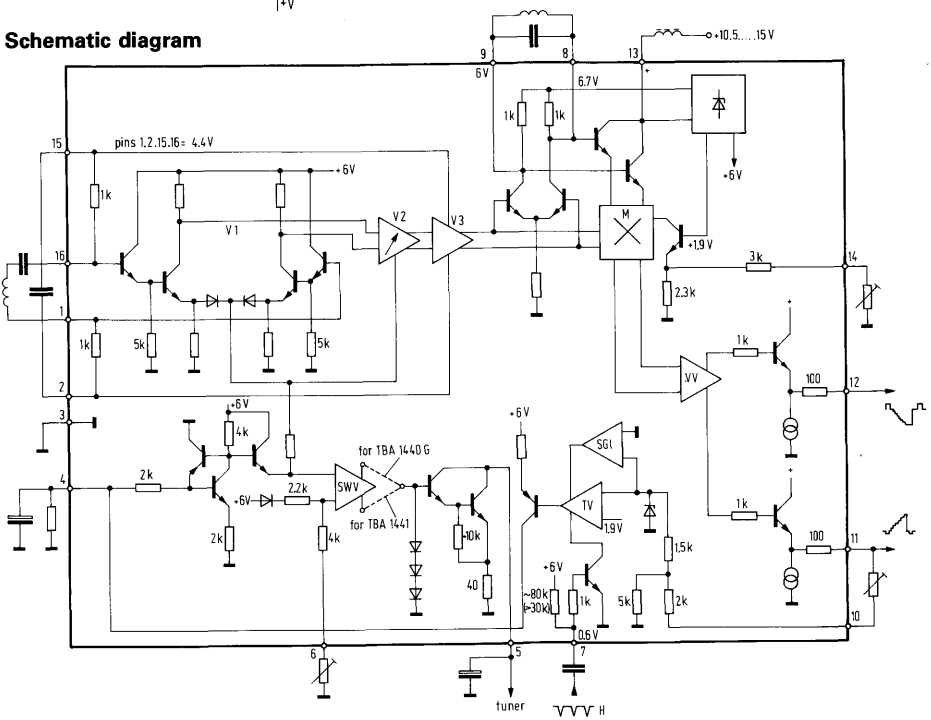
		min	typ	max	
Current consumption (V_{13} = 15 V)	I_{13}	34	47	60	mA
DC voltage at output 11					
(V_{13} = 15 V; V_i = 0) $R_{14-3} = \infty$	V_{11}		5.5		V
$R_{14-3} = 0$	V_{11}		9.6		V
DC voltage at output 12					
(V_{13} = 15 V; V_i = 0)					
$R_{14-3} = \infty$	V_{12}		1.9		V
$R_{14-3} = 0$	V_{12}		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 ΔV_{11} = 1 V	R_{14-3}		8.5		kΩ
AGC threshold V_{10} = 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		kΩ
Sync pulse level with async or without gating pulses (peak level control)	$V_{11\ sync}$		.5		V
Control current for tuner prestage (V_5 >2 V)	I_5	10	15		mA
(TBA 1440 G: 10 dB after AGC TBA 1441 : 10 dB previous to AGC)					
IF control voltage for max gain	V_4	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 $+V_{13}$	I_{11}; I_{12}			−1	mA
Input impedance at max gain	Z_{1-16}		1.8/2		kΩ/pF
at min gain	Z_{1-16}		1.9/0		kΩ/pF
Input voltage[1]) for V_{11} = 3 V_{pp}	V_i	70	100	300	µV
Video band width (−3 dB)	B_{video}	6	7		MHz
AGC range	ΔG_V		55		dB
Intermodulation with reference colour carrier[2])	a		45		dB
Output impedance	$Z_{q\ 8-9}$		2/2.5		kΩ/pF

[1]) According to test circuit: V_i = effective sync pulse level at 60 Ω
[2]) Test level a_{cc} = −3 dB
a_{sc} = −20 dB referring to picture carrier

Test circuit

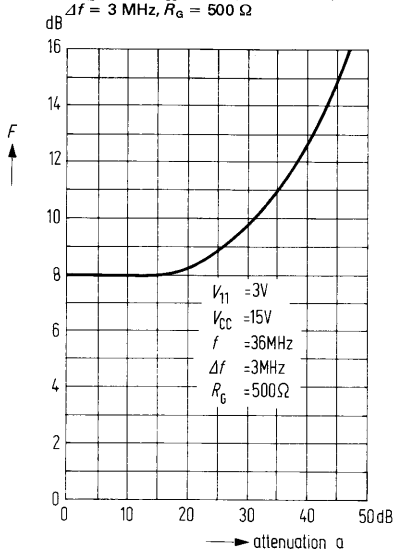


Schematic diagram

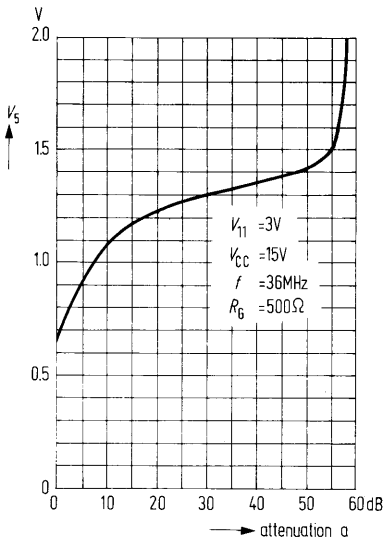


V1, V2, V3	amplifiers	SGI	peak rectifier
M	mixer	VV	video amplifier
TV	key amplifier		

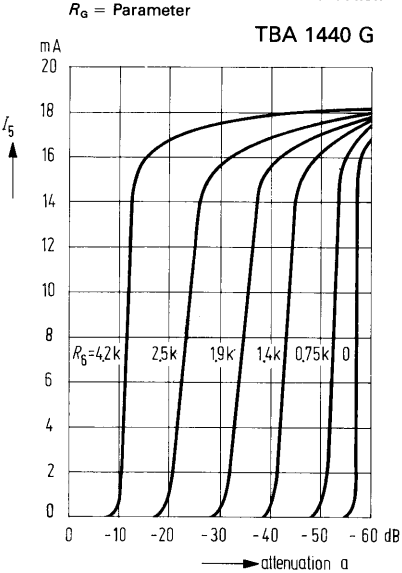
Noise figure v. attenuation (measured ad video frequency)
$-V_{fb}$ = 3 V, V_{cc} = 15 V, f = 36 MHz, Δf = 3 MHz, R_G = 500 Ω



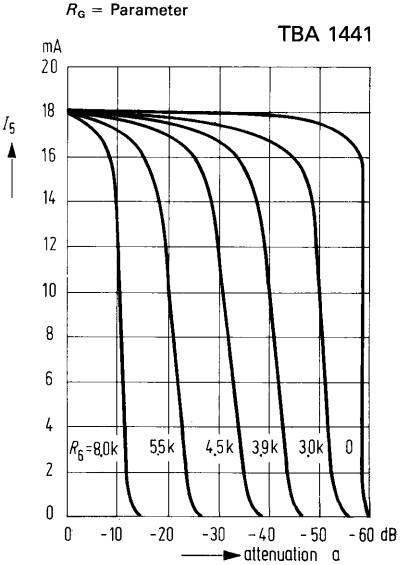
Control voltage v. attenuation
$-V_{fb}$ = 3 V, V_{cc} = 15 V, f = 36 MHz, R_G = 500 Ω



Tuner control current versus attenuation
R_G = Parameter



Tuner control current versus attenuation
R_G = Parameter



Application circuit
suitable for connection of video recorders (75Ω)