

GL3320

VIDEO CHROMA DEFLECTION CIRCUIT

for Color TV Sets

Description

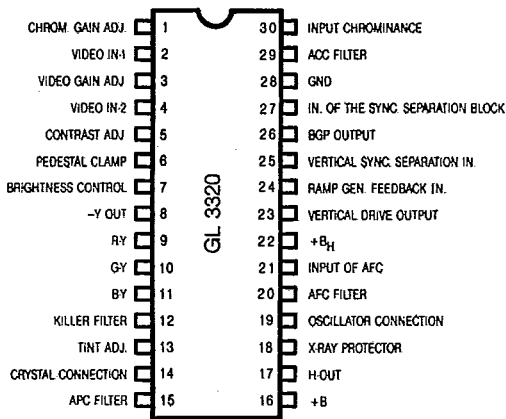
The GL 3320 are small-sized multifunctional IC's containing the "video, chroma, deflection" circuit of NTSC color TV in the DIP-30S of shrink type. Besides being small-sized, they have such features as greatly reduced number of parts and fewer adjustments required. The GL 3320 can be used in conjunction with the GL 3120 for "VIF + SIF" use to perform all color TV signal processings.

The GL 3320 containing a peak clip circuit in the video circuit is well suited for use in small-sized sets.

Features

- **Small-Size Package.**
- **Minimum Number of Parts Required.**
- **Fewer Adjustment Required (Non-adjusting of Functions Shown Below).**
 - **Chroma VCO (APC)**
 - **Horizontal OSC (H-Hold)**
 - **Vertical OSC (V-Hold).**

Pin Configuration



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

Supply Voltage	V_{16}	14.0	V
Supply Current	I_{22}	15.0	mA
Power Dissipation	P_d	$T_A \leq 65^\circ\text{C}$	1100 mW
Operating Temperature	T_{OPR}	-20 to +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

Operating Conditions $T_A = 25^\circ\text{C}$

Supply Voltage	V_{16}	12.0	V
Supply Current	I_{22}	10.0	mA
Operating Voltage Range		9.0 to 14.0	V
Operating Current Range		8.5 to 15.0	mA

Electrical Characteristics: $T_A = 25^\circ\text{C}$, $V_{16} = 12\text{V}$, $I_{22} = 10\text{mA}$ (unless otherwise specified)

www.DataSheet4U.com

(DEFLECTION BLOCK)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Supply Current of Pin 16	I_{16}		40	53	75	mA
Horizontal Supply Voltage	V_{Z22}		8.2	8.7	9.2	V
Sync. Signal Separation Input DC Level	V_{SS}		9.0	9.3	9.6	V
Vertical Free Run Frequency 1	f_{V1}			1H/296.5		Hz
Vert. Blanking Pulse Width	PWVB			19.25/H		sec
Vert. Output Pulse Width	PWVO			10.25/H'		sec
Vert. Drive Part Voltage Gain	G_V		13	16.2	19	dB
Vert. Output Pulse Starting Voltage	V_{CDS}				4.0	V
Vert. Pull-In Operation Starting Voltage	V_{VPS}				4.0	V
Vert. Blanking Pulse Peak Value	V_{VBLK}				10.0	V
AFC DC Loop Gain	I_{AFC}		± 300	± 400	± 500	μA
Hori. Free Run Frequency	f_H	Hori. Output freq. -15,734	-70	0	130	Hz
Hori. OSC Frequency Power Supply Voltage Change	Δf_{HV}	$f_H(8V) - f_H(7V)$	-10	0	10	Hz
Hori. OSC Frequency Ambient Temperature Variation Dependence	$\Delta f/\Delta T$	$T_A = -10 \sim 60^\circ\text{C}$	-1.5		1.5	Hz/ $^\circ\text{C}$
Hori. Output Pulse Width	PWHO		23.5	24.5	25.5	μs
Hori. Sync Pull-In Range	f_H Pull	Deviation from 15,734Hz	+400 -500			Hz
Hori. Output Pulse Starting Voltage	V_{HPOS}				5.5	V
Hori. Free Run Frequency Aging Drift	Δf_{HT}	from 5 sec to 30 min.	-50	-10	30	Hz
Hori. Blanking Threshold Level	V_{HBLK}		11			V
Hori. Output Drive Current	I_{HD}		2.0		4.5	mA
Hori. OSC Control Sensitivity	βf_H	Reference Level		236		Hz/ μA
Hold Down Operation Starting Input Voltage	V_{HD}		0.55	0.35	0.75	V
Hold Down No Return Supply Voltage	V_{HDNR}				4.0	V

(VIDEO BLOCK)

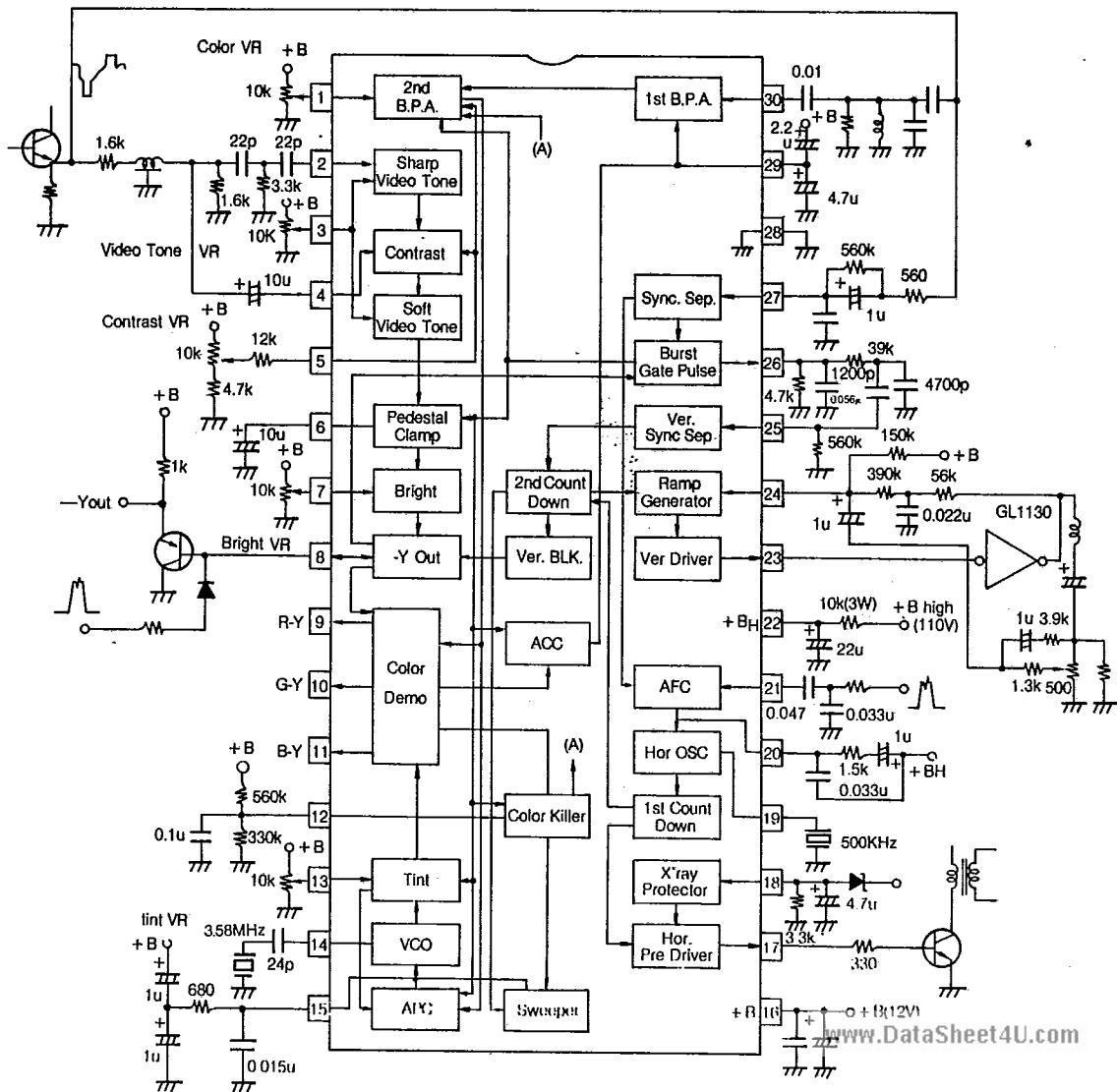
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Video Tone Control Characteristic(1)	RE1	f = 2MHz, Video Tone VR: 0V	-5	-3	-1	dB
Video Tone Control Characteristic(2)	RE2	f = 2MHz, Video Tone VR:12V	12	15	18	dB
Vido Tone Turning Point	V _{3TH}	Reference Value		5.5		V
Video Voltage Gain	Av	f = 100 KHz	12	15	18	dB
Contrast Control Characteristic	eo	f = 100KHz, Vi = 100mVpp	0.2	0.3	0.4	Vpp
Contrast Control Range	Δeo	f = 100KHz	16	18	20	dB
Bright Control Characteristic(1)	BR1	No Signal, Bright VR: 3V	8			V
Bright Control Characteristic(2)	BR2	No Signal, Bright VR: 6V	5.8	6.3	6.8	V
Bright Control Characteristic(3)	BR3	No Signal, Bright VR: 9V			4.5	V
Frequency Characteristic	fv	f = 5MHz/f = 100KHz	-5			dB
Video Output Voltage Change By Contrast	ΔEo		-50		50	mV
Dependence of Video Output Voltage on Supply Voltage	Δeo(Vcc)	Vcc = 12V ± 1V, f = 100KHz	-10		10	%
Dependence of Video Output Voltage on Temperature	Δeo(T _A)	T _A = 25°C ± 35°C, f = 100KHz	-10		10	%
Dependence of Video Output Voltage on Temperature	ΔE _{OY} /ΔT	No Signal, T _A = 25°C ± 35°C				mV/°C

(CHROMA BLOCK)

Parameter: DataSheet4U.com	Symbol	Conditions	Min	Typ	Max	Unit
ACC Amplitude Characteristic(1)	ACC 1	Input: +6dB	-3		3	dB
ACC Amplitude Characteristic(2)	ACC 2	-7	-7		2	dB
ACC Phase Characteristic(1)	ACC 01	Input: +6dB	-3		3	dB
ACC Phase Characteristic(2)	ACC 02	Input: -20dB	-7		7	dB
Killer Operating Point	E_K		-55	-46	-40	dB
Killer Color Residual	E_{KOUT}	Input: E_K (dB)			50	mVpp
Residual Color	E_{CMIN}	Color VR: 0V, Contrast VR: 12V			50	mVpp
Color Difference Output Center	B-Y(CEN)	Output B-Y	2.9	4.3	5.5	Vpp
Maximum Demodulation Output	B-Y(MAX)	Output B-Y	-5.5	6.5		Vpp
Color Control Phase Characteristic	$\Delta\phi_c$	Output B-Y	-5		5	deg
Contrast Color Amplitude Characteristic	ΔG	Output B-Y	15.5	17	18.5	dB
Contrast Color Phase Characteristic	$\Delta\phi$	Output B-Y	-5		5	deg
Tint Center	Tcen	Output B-Y	-17	-5	7	deg
Tint Control Range	ΔT	Tint VR: 0V, 6V, 12V	+45			deg
			-35			
APC Pull-In Range	Δf_{APC}		± 300			Hz
Demodulation Output Ratio(1)	R-Y/B-Y		0.81	0.90	0.98	
Demodulation Output Ratio(2)	G-Y/B-Y		0.24	0.30	0.38	
Demodulation Phase Ratio(1)	$\angle R-Y/B-Y$		96	104	112	deg
Demodulation Phase Ratio(1)	$\angle GY/B-Y$		-132	-122	-112	deg
Color Difference Output Residual Carrier Level	Ecar	No Signal			1.0	Vpp
Color Difference Output Residual Harmonics Level	Ehar				3.0	Vpp
Color Difference Output Voltage	$V_{9,10,11}$		6.7	7.2	7.7	V
Color Difference Output Voltage Difference	$\Delta V_{9,10,11}$		-200		200	mV
Dependence of B-Y Demodulation Output on Supply Voltage	$\Delta B-Y(V_{CC})$	$V_{CC} = 12V \pm 1V$	-20		20	%
Dependence of B-Y Demodulation Phase on Supply Voltage	$\Delta LB-Y(V_{CC})$	$V_{CC} = 12V \pm 1V$	-5		5	deg
Dependence of Color Difference Output Voltage Difference on Supply Voltage	$\Delta \Delta V_{9,10,11}$	$V_{CC} = 12V \pm 1V$			50	mV
Dependence of B-Y Demodulation Output on Temp	$\Delta LB-Y(T_A)$	$T_A = 25^\circ C \pm 35^\circ C$	-15		15	%
Dependence of B-Y Demodulation Phase on Temp	$\Delta LB-Y(T_A)$	$T_A = 25^\circ C \pm 35^\circ C$	-7		7	deg
Dependence of Color Difference Output Voltage on Temp	$\Delta V_{9,10,11}(T_A)$	$T_A = 25^\circ C \pm 35^\circ C$	-2		2	mV/°C
Dependence of Color Difference Output Voltage Difference on Temp	$\Delta \Delta V_{9,10,11}(T_A)$	$T_A = 25^\circ C \pm 35^\circ C$	-1		1	mV/°C

Block diagram and Application Circuit

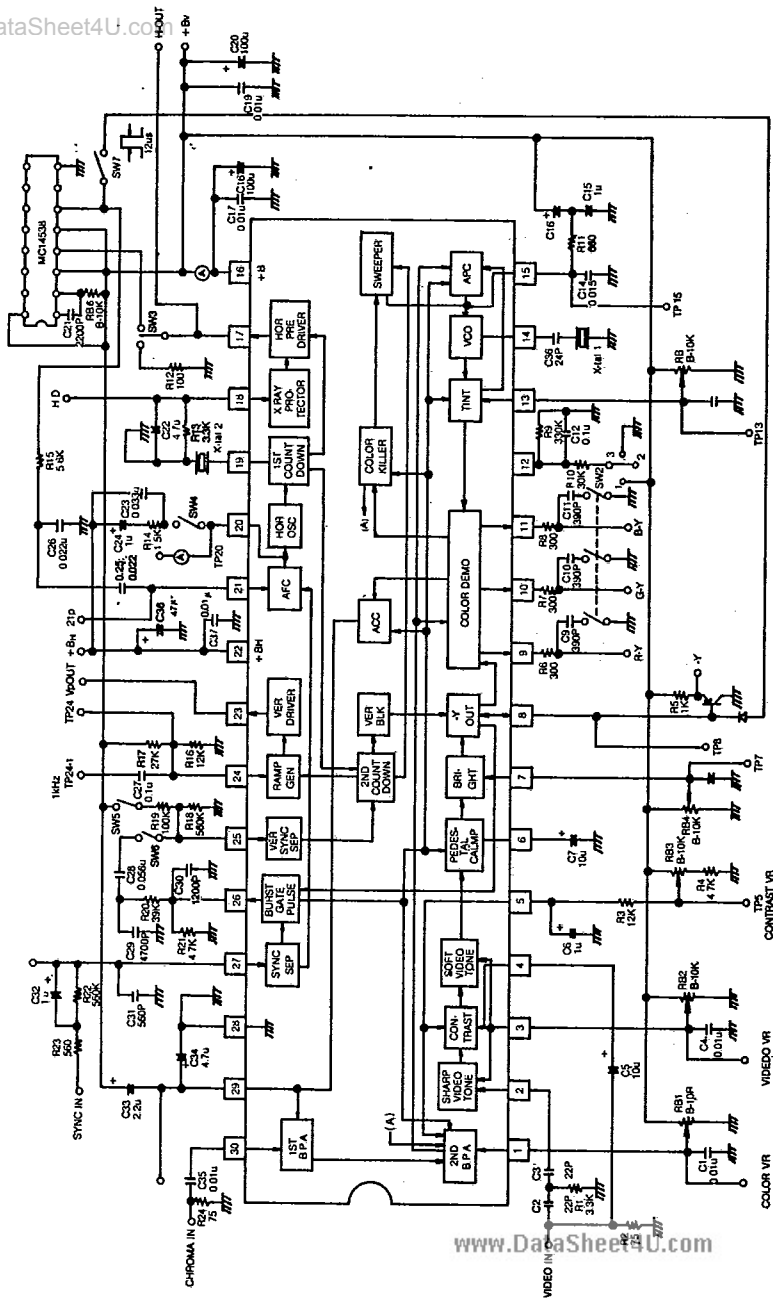
www.DataSheet4U.com



www.DataSheet4U.com

Test Circuit

www.DataSheet4U.com



www.DataSheet4U.com