HA11532

Video/Chroma Deviation Processor with On-screen Indicator Function

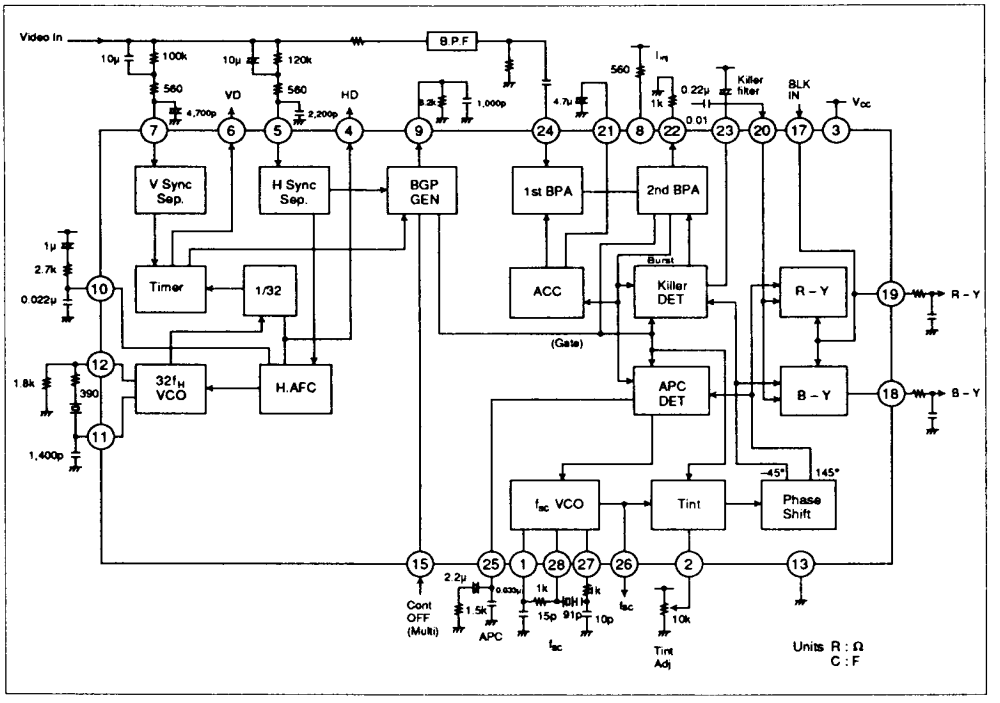
Functions

- Chroma signal processing (BPA, APC, VCO, DEMO)
- H/V Signal processing

Features

- Single chip for both chroma signal processing and H/V signal processing
- Optimum for processing chroma signal of digital VCR in combination with HA11525MP

Block Diagram



Ordering Information

Type No.	Package
HA11532MP	MP-28
HA11532NT	DP-30S

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	7.0	V
Power Dissipation	P_T	450	mW
Operating Temperature	T_{opr}	– 20 to +80	°C
Storage Temperature	T_{stg}	– 40 to +125	°C

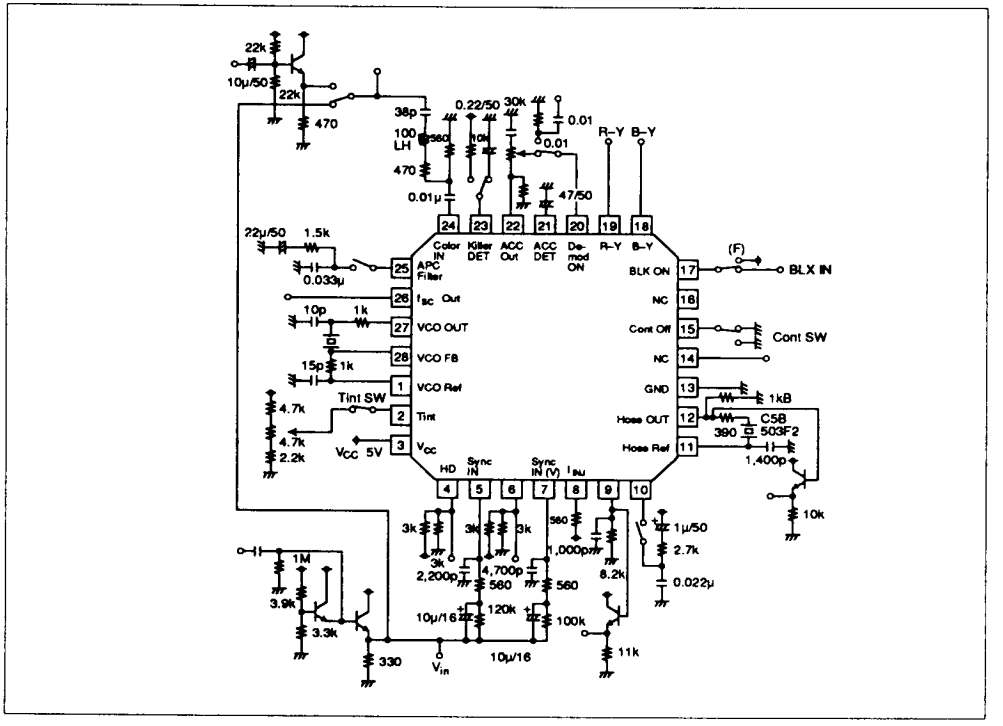
Note: Operating supply voltage = 5±0.25V

Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test Condition
1st BPA Rated Input		e_{MBI}	—	80	—	mVpp	
2nd BPA Rated Output		e_{MBO}	380	430	480	mVpp	
ACC Range	MAX	ΔG_{MAX}	–4	–2	+3	dB	Input burst level: –15dB e_{MBO} level ratio
	MIN	ΔG_{MIN}	–3	0.5	+3	dB	Output burst level: +6dB e_{MBO} level ratio
Killer Operating Point			—	–31	–26	dB	
1st BPA Input DC Voltage		E_{MBI}	2.75	2.85	2.95	V	
2nd BPA Output DC Voltage		E_{MBO}	2.1	2.4	2.7	V	
Killer Detection H-level		E_{KH}	3.4	3.8	4.3	V	
APC Pull Range	+	f_{P+}	350	1000	—	Hz	Chroma input frequency (+) during pull
	–	f_{P-}	—	–700	–350	Hz	Chroma input frequency (–) during pull
APC Control Sensitivity		β	6	11	—	Hz/mV	
Killer Carrier Leak		e_K	—	– 32	– 30	dB	Forced killer
fse Output Level		e_{fsc}	200	400	—	mVpp	
Chroma VCO Oscillation Frequency Offset			–70	0	+70	Hz	
Demodulated Rated Input		e_{DI}	—	250	—	mVpp	
Demodulated (R-Y) Gain		e_{DRO}	385	410	435	mVpp	
Demodulated (B-Y) Gain		e_{DBO}	385	410	435	mVpp	
Demodulation Output Ratio (R/Y)/(B-Y)			0.95	1.0	1.05	Times	
(B-Y) Demodulation Angle		ϕ_{BY}	—	0	—	deg	Tint terminal: OPEN
Tint Variance Range		$\Delta\phi_T$	80	90	—	deg	
Color Difference Output Residual Harmonic Level		e_{car}	—	0.03	0.15	Vpp	(B-Y) output = 1Vpp
Color Difference Output BLKING Residual Harmonic Level		e_{Bcar}	—	0.03	0.05	Vpp	

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Demodulation Angle	R/Y/B–Y	—	100	—	deg	
Demodulation Output Bandwidth	BW_{B-Y}	500	1500	—	kHz	
Color Difference Output DC Voltage (R-Y)	B_{R-Y}	1.9	2.2	2.5	V	
Color Difference Output DC Voltage (B-Y)	B_{B-Y}	1.9	2.2	2.5	V	
BLK Threshold Value Level	B_{DBti}	0.8	1.7	2.3	V	
Horizontal Free-running Frequency	f_{OH}	15434	15734	16034	Hz	
Horizontal Oscillation Frequency Current/Voltage Fluctuation	Δf_{HV}	—	+15 –30	±70	Hz	
HD Pulse Duration	T_{HD}	3.5	3.9	4.2	µs	
Horizontal Synchronization + Pull Range	f_{HP+}	+400	+650	—	Hz	
–	f_{HP-}	—	– 900	– 400	Hz	
Horizontal Pulse Output Open Channel Voltage	V_{MPOS}	—	3.1	4.0	V	V_{cc}: Increased gradually from 0V.
Synchronization Separation H	V_{HSS}	3.4	3.6	3.8	V	
Power DC Level V	V_{DSS}	3.4	3.6	3.8	V	
Vertical Free-running Frequency	f_{OV}	—	f_H/288.5	—	Hz	
VD Pulse Duration	T_{VD}	—	10.25H	—	sec	Video input: OPEN
HD Pulse Output Voltage (HI)	B_{HDH}	3.8	4.1	4.5	V	Load against GND 3kΩ
HD Pulse Output Voltage (LO)	B_{HDL}	0.7	0.9	1.2	V	Load against GND 3kΩ
VD Pulse Output Voltage (HI)	B_{VDH}	3.8	4.1	4.5	V	Load against GND 3kΩ
VD Pulse Output Voltage (LO)	B_{VDL}	0.7	0.9	1.2	V	Load against GND 3kΩ
Supply Current	I_D	30	42	54	mA	
BGP Mask Pulse Duration	T_{BNP}	—	12H	—	sec	
BGP Pulse Duration	T_{BGP}	—	2.5	—	µs	Pulse duration following sync. signal trailing edge

Test Circuit



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