ADE-XXX-XXX

HA11567MP
Chroma Processor and H/V System for Digital VCR (PAL)

HITACHI

Rev. 0
Feb. 1991

Functions

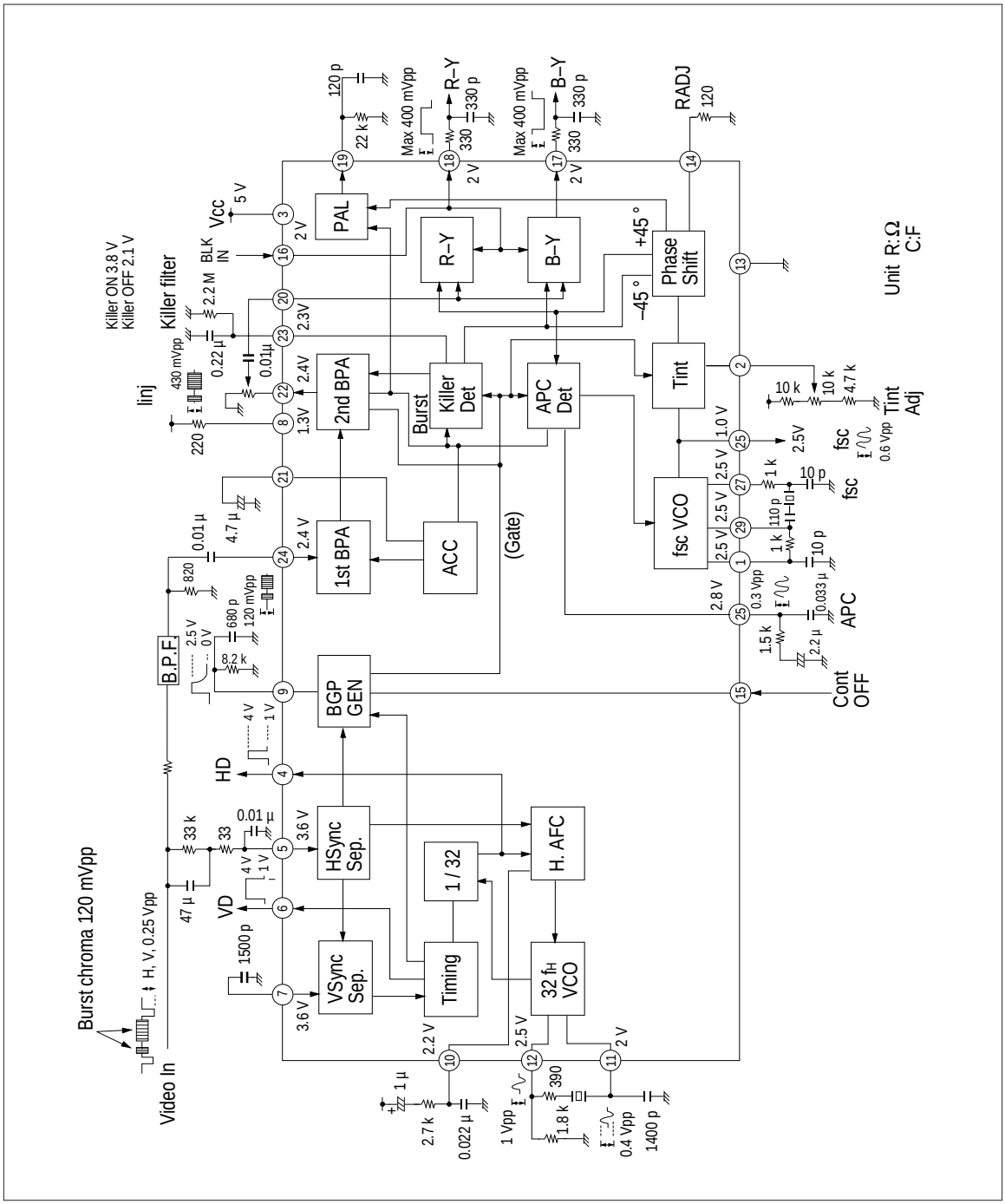
- Chroma signal processing (BPA, APC, DEMO)
- H/V signal processing

Features

- Chroma signal processing and H/V signal processing
- Most suitable to chroma signal processing for digital VCR, using with HA11535MP

Hitachi semiconductor

Block Diagram



Abusolute Maximum Ratings (Ta = 25 °C)

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

Note: Operating supply voltage: 5 ± 0.25 V

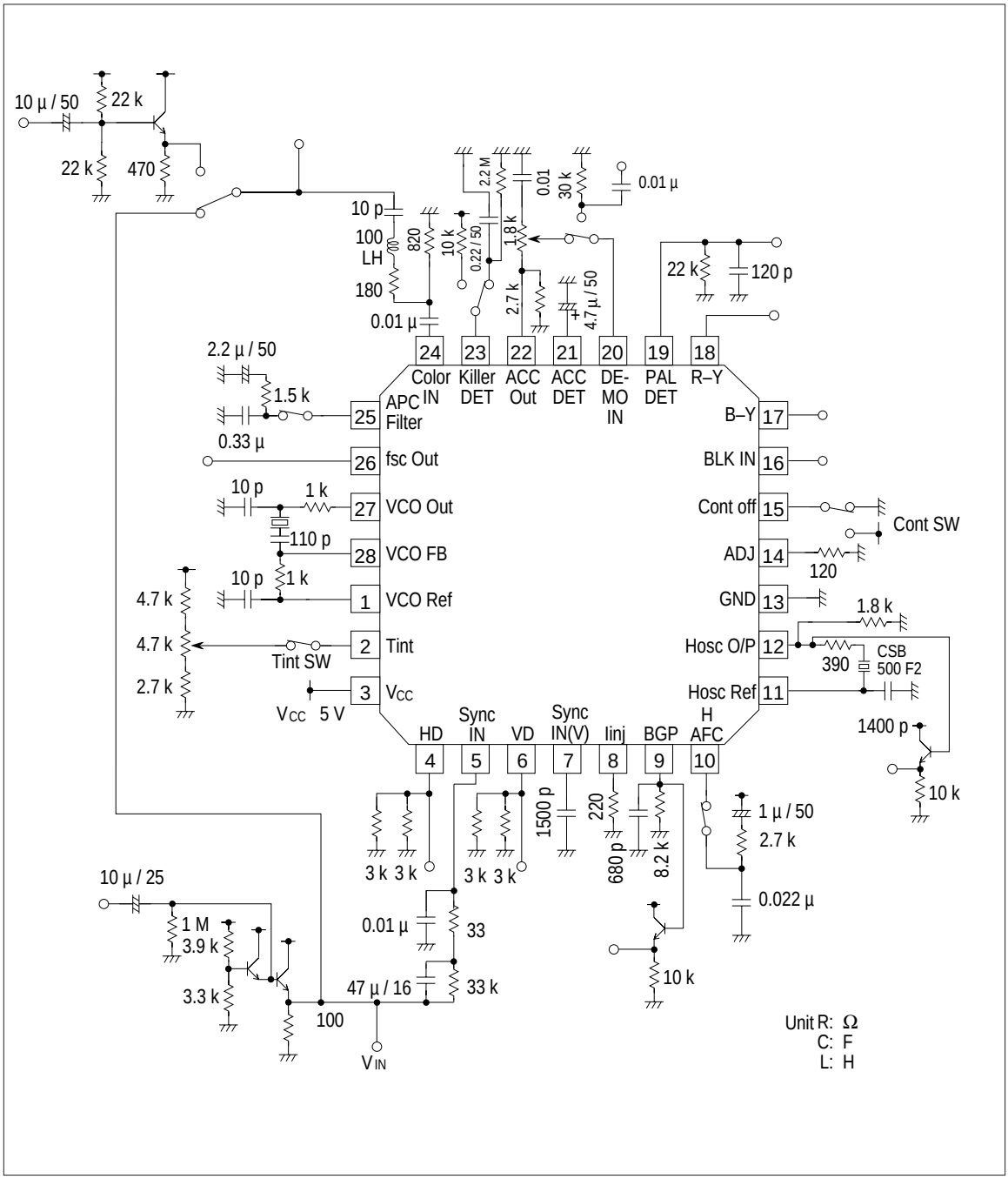
Electrical Characteristics

Item		Symbol	Min	Typ	Max	Unit	Test Conditions
1st BPA rated input		e_{MBI}	—	120	—	mV_{pp}	
2nd BPA rated output		e_{MBO}	330	400	470	mV_{pp}	
ACC range	MAX	Δ_{GMAX}	–4	–2	+3	dB	Input burst level: –15 dB e_{MBO} level ratio
	MIN	Δ_{GMIN}	–3	0.5	+3	dB	Input burst level: +6 dB 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 detect high level		E_{KH}	3.4	3.8	4.3	V	
APC lead-in range	+	fp+	+350	1000	—	Hz	Chroma input frequency with pull in (+)
	–	fp–	—	–1200	–350	Hz	Chroma input frequency with pull in (–)
APC control sensitivity		ß	6	11	—	Hz / mV	
Killer carrier leak		e_k	—	–32	–30	dB	With forced killer
fsc output level		e_{fsc}	200	700	—	mV_{pp}	
Chroma VCO oscillation frequency off-set			–70	0	+70	Hz	f_o = 4.433619 MHz
De-mod rated input		e_{DI}	—	250	—	mV_{pp}	
De-mod (R–Y) gain		e_{DRO}	380	410	440	mV_{pp}	
De-mod (B–Y) gain		e_{DBO}	380	410	440	mV_{pp}	
De-mod output ratio (R–Y) / (B–Y)			0.95	1.0	1.05	times	
(B–Y) de-mod angle		ϕ_{B-Y}	—	0	—	deg	Tint: open
Tint variable range		$\Delta\phi_T$	80	90	—	deg	
Color difference output residual harmonic level		ecar	—	0.03	0.15	V_{pp}	(B – Y) output = 1 V_{pp}

Table 2 Electrical Characteristics (cont)

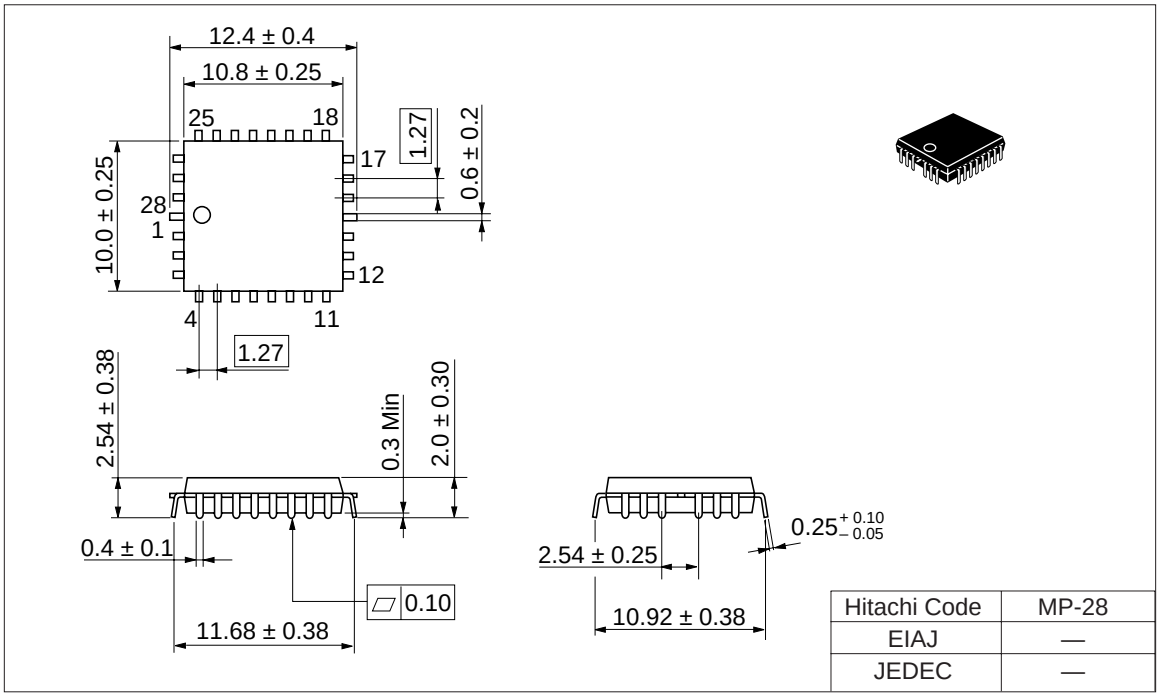
Item		Symbol	Min	Typ	Max	Unit	Test Conditions
Color difference output blanking residual harmonic level		$e_B$car	—	0.03	0.05	V_{pp}	
De-mod angle		R–Y/B–Y	—	90	—	deg	R_{ADJ} = 120 Ω
De-mod output band width		BW (B–Y)	500	1500	—	kHz	
Color difference output DC voltage (R–Y)		E_{R-Y}	1.9	2.2	2.5	V	
Color difference output DC voltage (B–Y)		E_{B-Y}	1.9	2.2	2.5	V	
BLK threshold level		E_{DB}ti	0.8	1.7	2.3	V	
Horizontal osc. frequency		f_{OH}	15333	15625	15923	Hz	
Horizontal osc. frequency DC voltage charge		Δf_{HV}	—	+15 –30	±70	Hz	
HD pulse width		THD	3.5	3.9	4.2	µs	
	+	f_{HP+}	+400	+650	—	Hz	
	–	f_{HP-}	—	–750	–400	Hz	
Horizontal pulse output start voltage		V_{HPOS}	—	3.1	4.0	V	
Synchronizing separation terminal DC level	H	V_{HSS}	3.4	3.6	3.8	V	
ID pulse output voltage (high)		E_{IDH}	4.0	4.5	5.0	V	Load 22 kΩ, 100 pF
ID pulse polarity			4.0	4.5	5.0	V	Burst +45°
VD pulse with		T_{VD}	—	10.25_H	—	sec	Video no input
HD pulse output voltage (high)		E_{HDH}	3.8	4.1	4.5	V	Load 3 kΩ
HD pulse output voltage (low)		E_{HDL}	0.7	0.9	1.2	V	Load 3 kΩ
VD pulse output voltage (high)		E_{VDH}	3.8	4.1	4.5	V	Load 3 kΩ
VD pulse output voltage (low)		E_{VDL}	0.7	0.9	1.2	V	Load 3 kΩ
Supply current		I_D	28	42	56	mA	
BGP mask pulse width		T_{BNP}	—	14H	—	sec	
BGP pulse width		T_{BGP}	—	2.5	—	µs	Pulse width from synchronizing signal back edge

Test Circuit



Package Dimensions

Units: mm (inch)



Hitachi Code	MP-28
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