

HA11533

HITACHI/ (MCU/MPU)

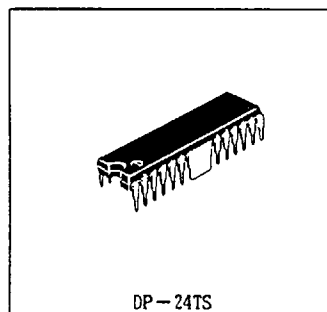
3ch Video Amplifier

This HA11533NT is 3 channel wide band video signal voltage amplifier bipolar IC.

This IC is suitable for of super high resolution CRT display video amplifier.

■ Features :

- 3 channel video amplifier built-in
- Wide bandwidth 100MHz min. ($\ominus$ 3dB)
- High output signal level 1.2Vp-p min.
- Contrast and drive adjustment are built-in.
- Less points to adjustment
- Brightness control is common on RGB.
- Signal power supply $V_{CC}=5.0\sim 5.5V$
- DILP-24TS with heat-sink TAB



■ ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$)

Item	Symbol	Rating	Unit	Note
Supply Voltage	V_{CC}	6	V	1
Power Dissipation	P_d	2	W	2
Junction Temperature	T_j	150	$^{\circ}C$	
Operating Temperature Range	T_{opr}	-10 to +70	$^{\circ}C$	
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}C$	

Note 1) Operating Supply Voltage 5.0V (min.)

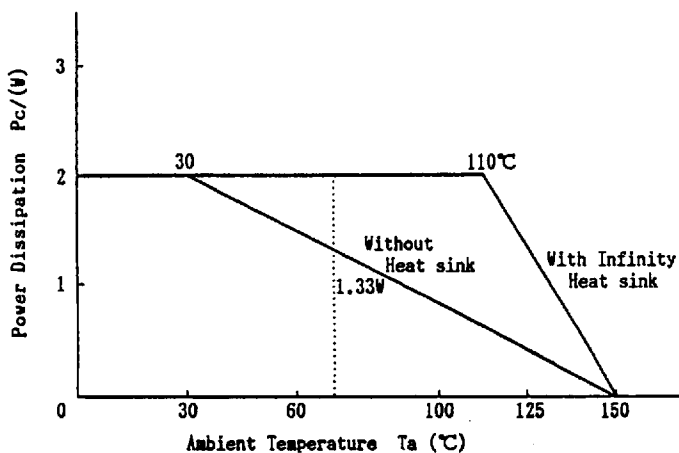
Notice : The example of applied circuit or combination with other equipment shown herein indicates characteristics and performance of semiconductor-applied products.
The company shall assume no responsibility for any problem involving a patent caused when applying the descriptions in the example.

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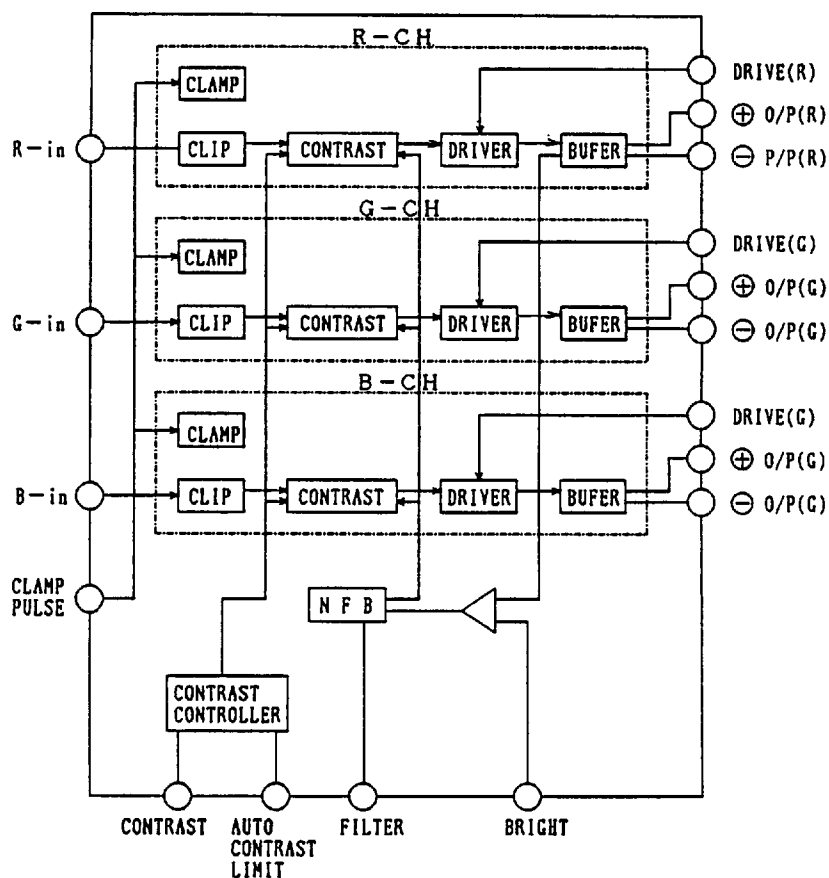
■ ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

No	Item	Symbol	Target Specifications			Unit
			Min.	Typ.	Max.	
1	Supply Voltage	V_{CC}	5.0	5.3	5.5	V
2	Supply Current	I_{CC}	—	160	220	μA
3	Video Band Width (-3dB)	$f_c (-3\text{dB})$	100	150	—	MHz
4	Max. Voltage Gain	$A_v (\text{max})$	5.7	8.2	—	dB
5	Contrast Ragne	ΔG_{CON}	19	—	—	dB
6	Drive Range	ΔG_{DR}	5	8	—	dB
8	Input Resistivity	R_{IN}	300	—	—	k Ω
9	Input Capacitance	C_{IN}	—	—	10	pF
10	Cross Talk @ 100MHz	C_{ch}	—	-42	-30	dB
11	Video Input Dynamic Range	ΔV_{VIDIN}	1.1	1.8	—	V
12	Contrast Trucking	ΔG_{CON3ch}	-1.5	—	1.5	dB
13	Video Output Dynamic Range	ΔV_{OUT}	1.2	2.0	—	V _{pp}



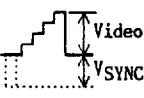
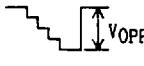
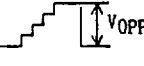
■ BLOCK DIAGRAM

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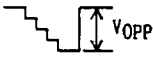
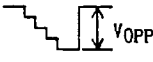
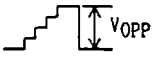


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PIN ARRANGEMENTS (TEMPORARY)

Pin No	Function	Wave Form	Signal Level	Impedance	Remarks
24	Video IN (Rch)		0.7Vpp (typ) 1.1Vpp (max)	E.F.	Note1
6	Video IN (Bch)	↓	↓	↓	
20	Clamp Pulse IN		TTL	High (Base)	
21	Contrast IN	DC	4.5V (max)~ 2.2V (min)	↓	
19	ACL IN	↓	Vcc	↓	Note2
3	Video IN(Gch)		VIDEO: 0.7pp (typ) VSYNC: 0.30pp (typ)	E.F.	
10	Power Vcc(Gch)	DC	5.3V		
2	Drive IN(Gch)	↓	2.6V~4.5V	High (Base)	-0dB@3.9V
12	Video Out (⊖ Gch)		1.5V 3.7V Vopp: 1.47pp (max)	Less than 40Ω	@RL=270 ~1kΩ
11	Video Out (⊕ Gch)			↓	↓
7	Power Vcc (Bch)	DC	5.3V		
5	Drive IN(Bch)	↓	2.6V~4.5V	High (Base)	-0dB@3.9V
17	Bright IN	↓	3.6V~4.8V	↓	

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Pin No	Function	Wave Form	Signal Level	Impedance	Remarks
9	Video Out ($\ominus$ Bch)		1.5V ~ 3.7V Vopp: 1.47pp (max)	Less than 40 Ω	$\theta_{RL} = 270$ ~1k Ω
8	Video Out ($\oplus$ Bch)		↓	↓	↓
2 2	Signal Vcc (Rch)	DC	5.3V		
1 8	NFB Filter	↓	3.0V ~ 3.6V	High (Base)	
2 3	Drive IN (Rch)	↓	2.6V ~ 4.6V	↓	-0dB $\pm$ 3.9V
1 5	Video Out ($\ominus$ Rch)		1.5V ~ 3.7V Vopp: 1.47pp (max)	Less than 40 Ω	$\theta_{RL} = 270$ ~1k Ω
1 4	Video Out ($\oplus$ Rch)		↓	↓	↓
1 3	Power Vcc (Rch)	DC	5.3V		
1	Signal Vcc (Gch)	↓	↓		
4	Signal Vcc (Bch)	↓	↓		
1 6	Signal Vcc (Control)	↓	↓		
FINL	Heat Sink & GND	↓	0V		
FINR	Heat Sink & GND	↓	↓		

Note 1) E.F. ; Emitter Follower

Note 2) The input voltage will be less than Vcc voltage when excess current flow into the anode.