

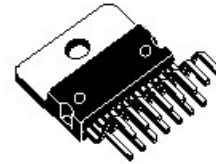
STV5112

RGB High Voltage Video Amplifier

DESCRIPTION

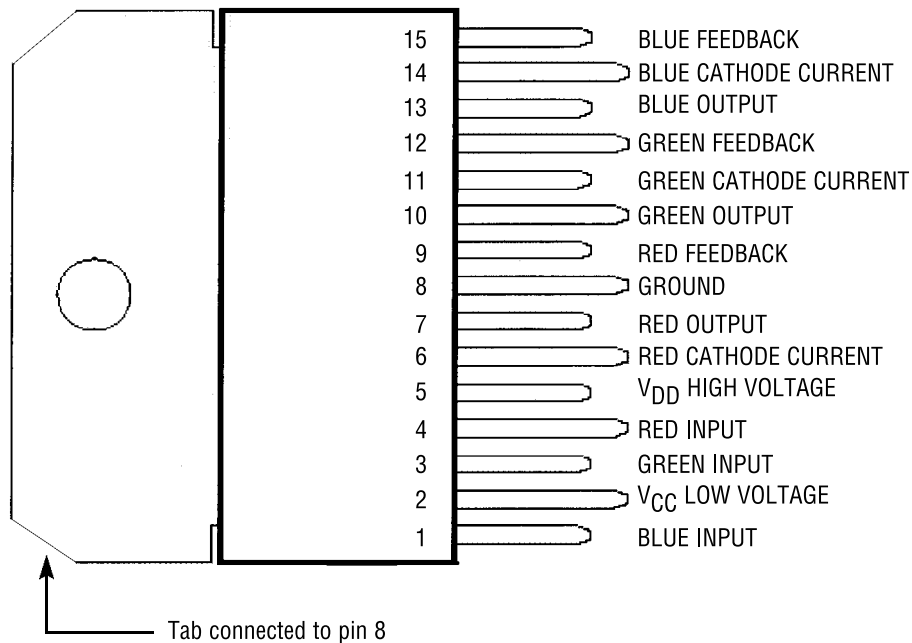
The STV5112 includes three video amplifiers designed with a high voltage bipolar / CMOS / DMOS technology (BCD). It drives directly the three cathodes and is protected against flashovers. Thanks to its three cathode current outputs, the STV5112 can be used with both parallel and sequential sampling applications.

- BANDWIDTH : 8MHz TYPICAL
- SUPPLY VOLTAGE : 220V TYPICAL
- RISE AND FALL TIME : 50ns TYPICAL
- CRT CATHODE CURRENT OUTPUTS FOR PARALLEL OR SEQUENTIAL CUT-OFF OR DRIVE ADJUSTMENT
- FLASHOVER PROTECTION
- POWER DISSIPATION : 3.6W



Multiwatt 15
ORDERING NUMBER: TDA7495

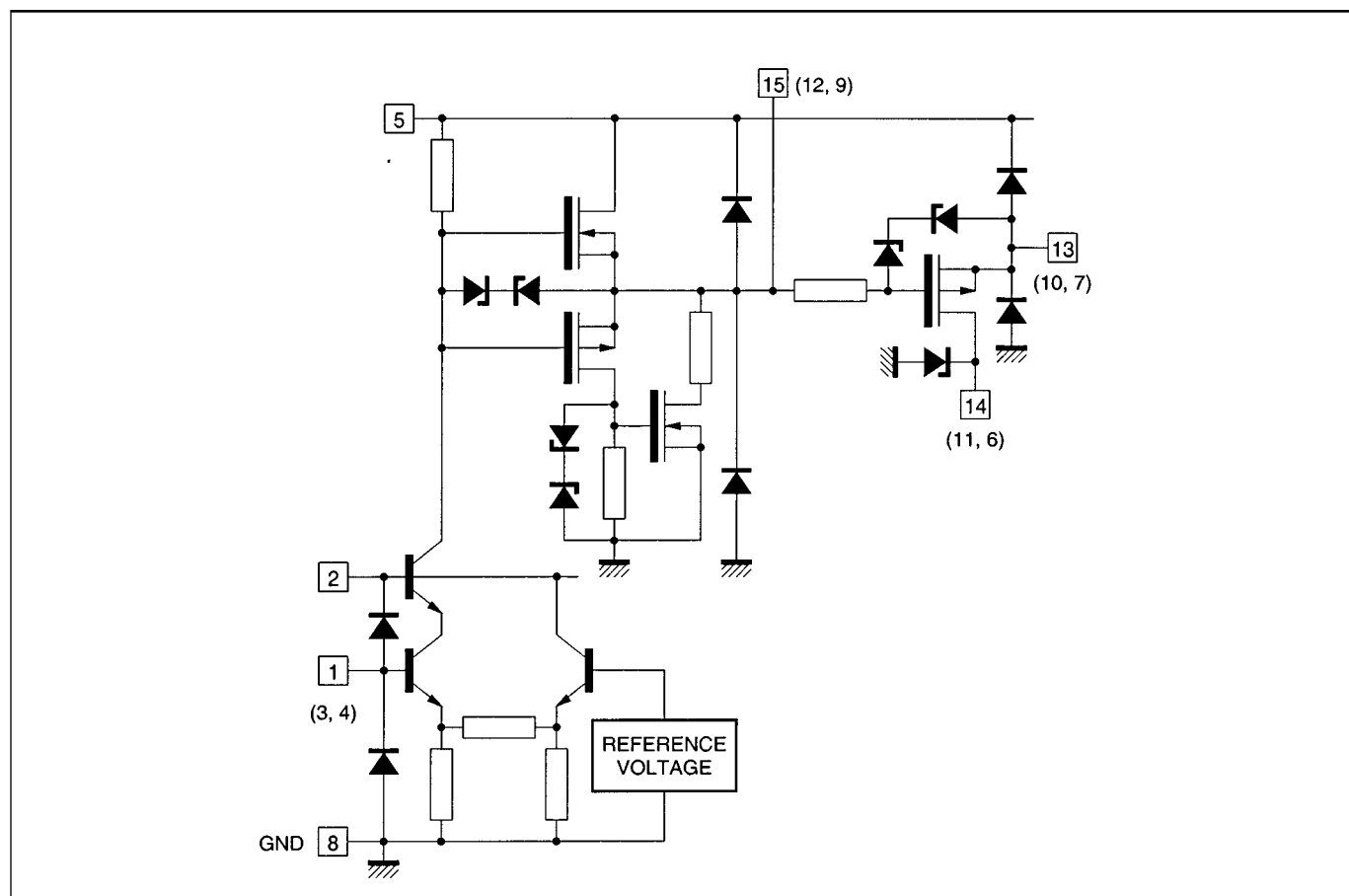
PIN CONNECTION (Top view)



PIN FUNCTION

N°	Function	Description
1	Blue Input	Input of the “blue” amplifier. It is a virtual ground with 2.5V bias voltage and 75 μ A input bias current.
2	VCC	Low voltage power supply, typically 9V.
3	Green Input	Input of the “green” amplifier. It is a virtual ground with 2.5V bias voltage and 75 μ A input bias current.
4	Red Input	Input of the “red” amplifier. It is a virtual ground with 2.5V bias voltage and 75 μ A input bias current.
5	V _{DD}	High voltage power Supply, typically 220V.
6	Red Cathode Current	Provides the video processor with a copy of the DC current flowing into the red cathode, for automatic cut-off or gain adjustment. If this control is not used. Pin 6 must be grounded.
7	Red Output	Output driving the red cathode. Pin 7 is internally protected against CRT arc discharges by a diode limiting the output voltage V _{DD} .
8	Ground	Also connected to the heatsink.
9	Red Feedback	Output driving the feedback resistor network for the red amplifier
10	Green Output	Output driving the green cathode. Pin 10 is internally protected against CRT arc discharges by a diode limiting the output voltage V _{DD} .
11	Green Cathode Current	Provides the video processor with a copy of the DC current flowing into the green cathode, for automatic cut-off or gain adjustment. If this control is not used. Pin 11 must be grounded.
12	Green Feedback	Output driving the feedback resistor network for the green amplifier
13	Blue Output	Output driving the blue cathode. Pin 13 is internally protected against CRT arc discharges by a diode limiting the output voltage V _{DD} .
14	Blue Cathode Current	Provides the video processor with a copy of the DC current flowing into the blue cathode, for automatic cut-off or gain adjustment. If this control is not used. Pin 14 must be grounded.
15	Blue Feedback	Output driving the feedback resistor network for the blue amplifier.

BLOCK DIAGRAM OF EACH CHANNEL



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{DD}	Supply High Voltage Pin 5	250	V
V_{CC}	Supply Low Voltage Pin 2	20	V
I_{OD} I_{OG}	Output Current to V_{DD} to Ground Pins 7-10-13	Protected 8	mA
I_{FD} I_{FG}	Output Current < 50 μ s duration to V_{DD} to Ground Pins 9-12-15	45 45	mA mA
I_j	Input Current Pins 1-3-4	60	mA
T_j	Junction Temperature	150	°C
T_{oper}	Operating Ambient Temperature	0, +70	°C
T_{stg}	Storage Temperature	-20, +150	°C

THERMAL DATA

Symbol	Parameter	Value	Unit
Rth j-case	Thermal Resistance Junction - case max.	3	°C/W
Rth j-amb	Thermal Resistance Junction - ambient Typ.	35	°C/W

ELECTRICAL CHARACTERISTICS ($V_{CC}=9V$; $V_{DD}=240V$; $T_{amb}=25^{\circ}C$; $AV=55$ unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_{DD}	High Supply Voltage (Pin5)			220	240	V
V_{CC}	Low Supply Voltage (Pin2)		7.5	9	10	V
I_{DD}	High Voltage Supply internal DC current (without current due to the feedback network)	$V_{OUT} = 120V$		9.5	15	mA
I_{CC}	Low Voltage Supply internal DC current			38	55	mA
V_{sath}	Output Saturation Voltage (High level) (Pins 7-10-13)	$I_O = 10\mu A$		5		V
R_{ON}	Output Mos Transistor (Low level) (Pins 7-10-13)			1.7		k Ω
BW	Bandwidth at -3dB	Measured on CRT cathodes ($C_{LOAD} = 10pF$; $R_{PROTECT} = 1k\Omega$, $V_{OUT} = 120V$, $\Delta V_{OUT} = 100V_{pp}$)		8		MHz
t_r, t_f	Rise & Fall Time	Measured between 10% & 90% of output pulse ($C_{LOAD} = 10pF$; $R_{PROTECT} = 1k\Omega$, $V_{OUT} = 120V$, $\Delta V_{OUT} = 100V_{pp}$)		50		ns
G_O	Open Loop Gain		47	50		dB
	Open Loop Gain Difference between 2 channels		-1.5	0	1.5	dB
	Open Loop Gain Temperature Coefficient			0		dB/°C
P	Internal Power Dissipation (see calculation below)	$V_{OUT} = 2MHz, 70 V_{PP}$ sine wave, $V_{BLACK} = 170V$, $C_L = 20pF$, $R_F = 68k\Omega$		3.6		W
V_{REF}	Internal Voltage Reference (Pins 1,3,4)	$V_{OUT} = 120V$	2.3	2.5	2.7	V
	Voltage Reference Temperature Coefficient			0		mV/°C
I_{IB}	Input Bias Current (Pins 1,3,4)	$V_{OUT} = 120V$		75		μA
R_I	Input Resistance			4		k Ω
ESD	ESD Human Body Model		1.2			kV