

**RGB SWITCHING CIRCUIT**

- 25 MHz BANDWIDTH
- CROSSTALK : 55 dB
- SHORT CIRCUIT TO GROUND OR  $V_{CC}$  PROTECTED
- ANTI SATURATION GAIN CHANGING
- VIDEO SWITCHING


**DESCRIPTION**

This integrated circuit provides RGB switching allowing connections between peri TV plug, internal RGB generator and video processor in a TV set.

The input signal black level is tied to the same reference voltage on each input in order to have no differential voltage when switching two RGB generators.

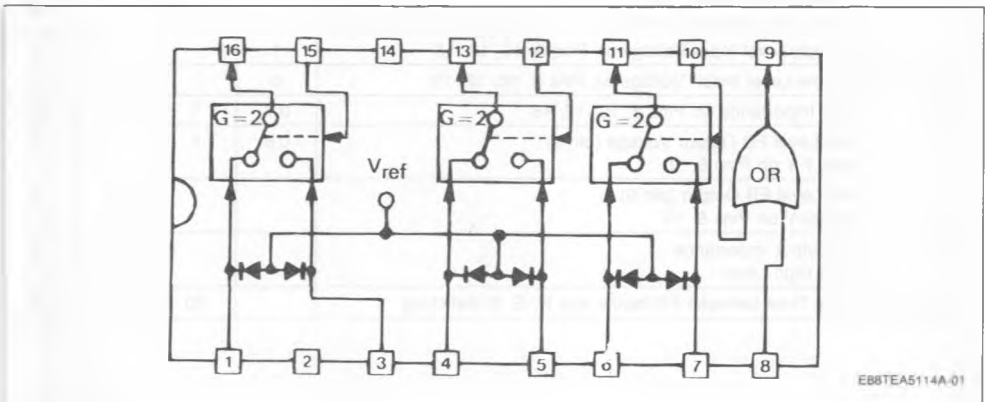
An AC output signal higher than 2 V<sub>pp</sub> makes gain going slowly down to 0 dB to protect the TV set video amplifier from saturation.

Fast blanking output is a logical OR between FB1 (Pin 8) and FB2 (Pin 10).

**PIN CONNECTIONS**

R <sub>1</sub> input	1	16	R output
GND	2	15	FB <sub>R</sub> input
R <sub>2</sub> input	3	14	V <sub>CC</sub>
G <sub>1</sub> input	4	13	G output
G <sub>2</sub> input	5	12	FB <sub>G</sub> input
B <sub>1</sub> input	6	11	B output
B <sub>2</sub> input	7	10	FB <sub>2</sub> + FB <sub>B</sub> input
FB <sub>1</sub> input	8	9	FB output

E88TEA5114A-02

**BLOCK DIAGRAM**


E88TEA5114A-01

## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CC}$	Supply Voltage	18	V
$T_j$	Junction Temperature	- 40 to 150	°C
$T_{stg}$	Storage Temperature	- 40 to 150	°C
$Z_L$	Minimum Load Resistor on Each Output	$V_{CC} = 12\text{ V}$ 300 $V_{CC} = 10\text{ V}$ 150	$\Omega$ $\Omega$
$T_{amb}$	Operating Ambient Temperature	0 to 70	°C

## THERMAL DATA

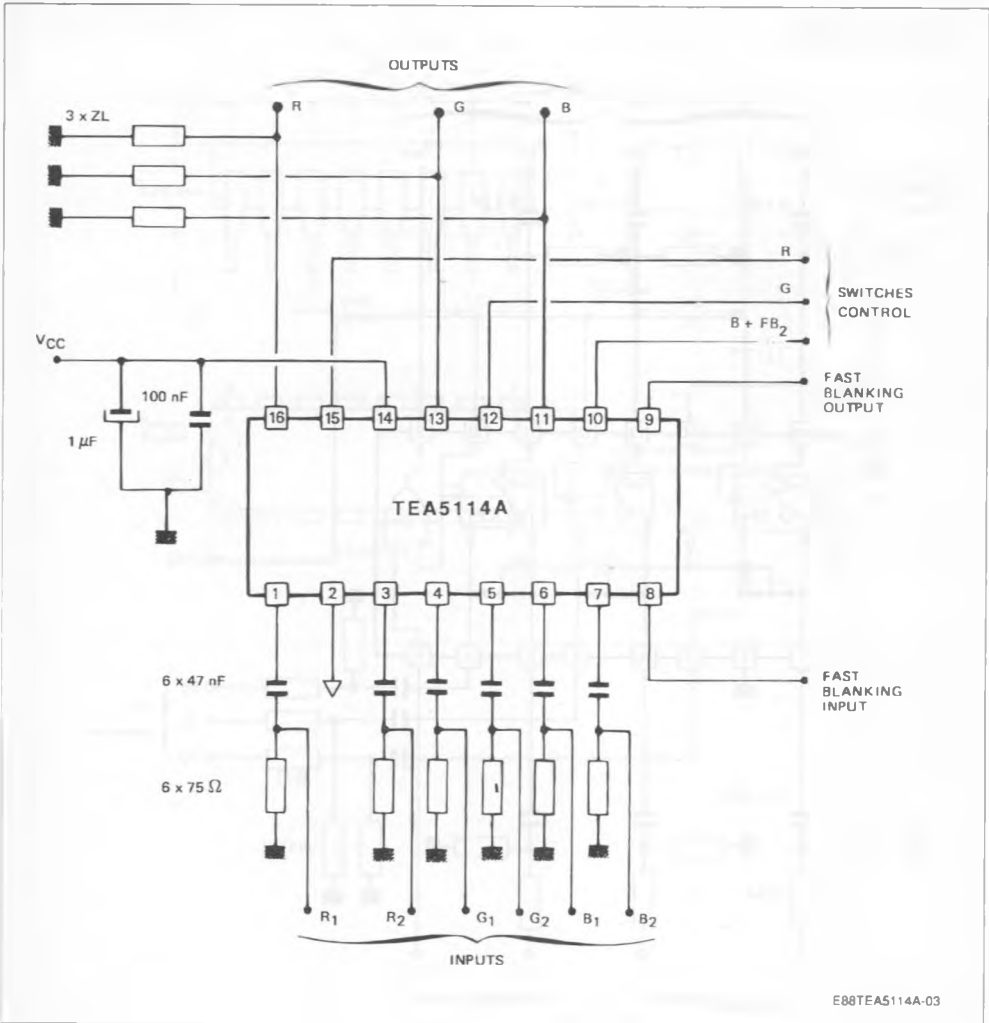
$R_{th(j-a)}$	Junction-ambient Thermal Resistance	80	°C/W
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## ELECTRICAL OPERATING CHARACTERISTICS

$T_{amb} = 25\text{ °C}$ ,  $V_{CC} = 12\text{ V}$ ,  $Z_L$  (RGB) = 300  $\Omega$   
 $V_{CC} = 10\text{ V}$ ,  $Z_L$  (RGB) = 150  $\Omega$  (unless otherwise specified)

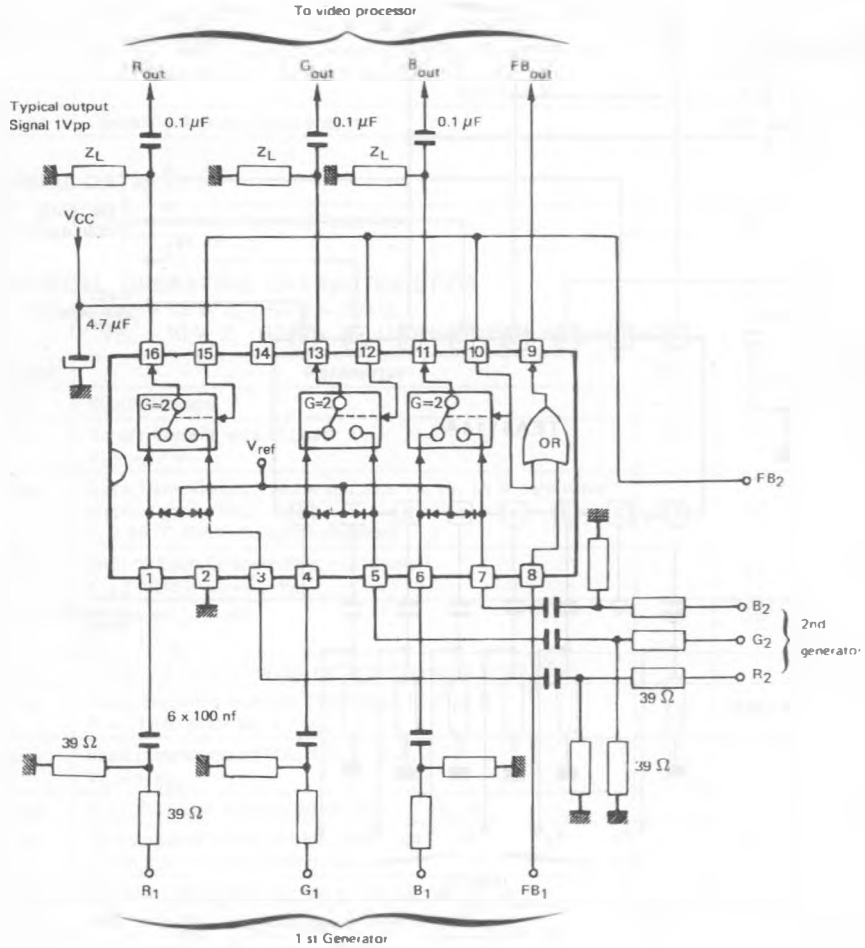
Symbol	Parameter	Min.	Typ.	Max.	Unit
$V_{CC}$	Supply Voltage	9	12	13.2	V
$I_{CC}$	Supply Current without Load $V_{CC} = 12\text{ V}$	20	30	40	mA
$V_{ON}$	Black Level Output Voltage (on pins 11, 13, 16 square wave output signal 1 kHz - 1 V <sub>pp</sub> ) $T_j = 25\text{ °C}$ (5mV/°C typical variation)	1.8	2.5	2.9	V
$G_{RGB}$	Gain of Each Channel Pins 11, 13, 16 $F = 1\text{ MHz}$ , $V_{in} = 0.5\text{ V}_{pp}$	5	5.5	6	dB
$B_{RGB}$	Bandwidth (- 3 dB) $V_O = 1\text{ V}_{pp}$	20	25		MHz
$V_{GC}$	Threshold Output Voltage for Gain Changing (- 0.5 dB)	2			$V_{pp}$
$V_R$	Video Rejection between Two Inputs R, G or B $F = 1\text{ MHz}$ Sinus $V_O = 1\text{ V}_{pp}$	50	55		dB
$Z_{IRGB}$	Input Impedance on Pins 1, 3, 4, 5, 6, 7 $V_O = 1\text{ V}_{pp}$	10			k $\Omega$
$Z_{ORGB}$	R, G, B Output Impedance on Pins 11, 13, 16			15	$\Omega$
$T_{FB}$	FB rising and falling time on pin 9. 1 V <sub>pp</sub> Input Voltage Pins 8, 10		20		ns
$V_{IHFB}$	FB High Level Input Voltage on Pins 8, 10, 12, 15	1		4	V
$V_{ILFB}$	FB Low Level Input Voltage on Pins 8, 10, 12, 15	0		0.4	V
$Z_{IFB}$	Input Impedance on Pins 8, 10, 12, 15	0.7	1	1.3	k $\Omega$
$V_{OHFB}$	High Level FB Output Voltage (pin 9) Input 1 V on Pins 8, 10	0.8	1	1.2	V
$V_{OLFB}$	Low Level FB Output (pin 9) Input 0 V on Pins 8, 10			0.3	V
$Z_{OFB}$	FB Output Impedance Pin 9 High Level			30	$\Omega$
$T_{dFBRGB}$	Delay Time between FB Inputs and R, G, B Switching		20		ns

## TEST DIAGRAM



TYPICAL R, G, B SWITCHING APPLICATION

$V_{CC} = 12\text{ V}$   $Z_L \geq 300\ \Omega$   
 $V_{CC} = 10\text{ V}$   $Z_L \geq 150\ \Omega$



Peritelevision plug standard input value 1 Vpp.

E88TEA5114A-04

## PACKAGE MECHANICAL DATA

16 Pins – Plastic DIP

