SGS-THOMSON
MICROELECTRONICS

TEA2014A

VIDEO SWITCH

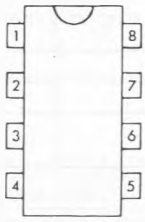
- 1 VIDEO OUTPUT 75 Ω - 1 V_{PP} NOT SWITCHED
- 1 SWITCHED VIDEO OUTPUT 2 V_{PP}
- VIDEO CROSSTALK : 50 dB TYPICAL
- SHORT CIRCUIT PROTECTION OF INPUTS AND OUTPUTS
- CLAMPED VIDEO INPUTS

TEA2014A
DIP8
(Plastic package)

DESCRIPTION

This integrated circuit provides all video switching allowing connections between the peri TV plug and video sections in the TV set. The TEA2014A is supplied in a DIL8.

PIN CONNECTIONS



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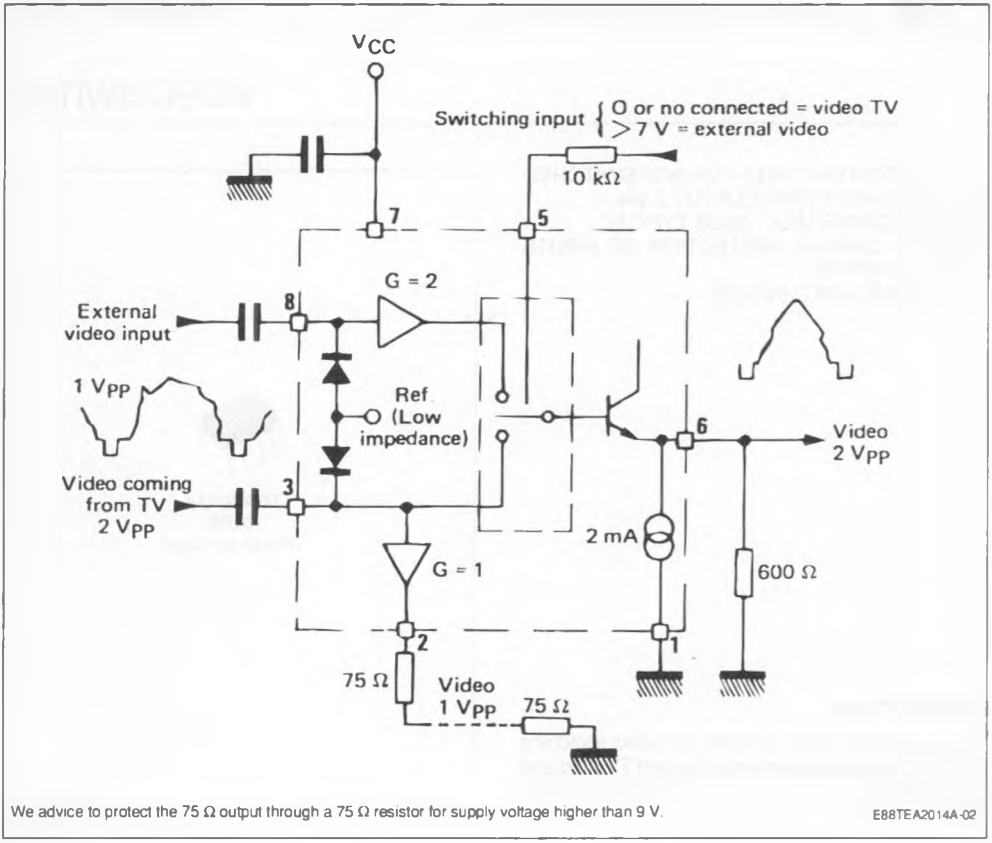
1 - Ground
2 - 75 Ω video output
3 - Internal video input
4 - Not to be used
5 - Switching input
6 - Switched video output
7 - Supply voltage
8 - External video input

TYPICAL APPLICATION AND TEST CIRCUIT



We advice to protect the 75 Ω output through a 75 Ω resistor for supply voltage higher than 9 V.

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ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	18	V
T_{oper}	Operating Temperature with Load > 150 Ω on PIN 2 with Load = 75 Ω on PIN 2	 0, + 100 0, + 70	°C
T_j	Junction Temperature	– 40, + 150	°C
T_{stg}	Storage Temperature	– 40, + 150	°C
–	Minimum DC Load Resistor PIN 6 Minimum DC Load Resistor PIN 2	600 75	Ω Ω

THERMAL DATA

$R_{th\ (j-a)}$	Junction-ambient Thermal Resistance	90 Typ	°C/W

ELECTRICAL CHARACTERISTICS

T_{amb} = + 25 °C, V_{CC} = 9 V (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
V_{CC}	Supply Voltage Range	8	–	14	V
I_{CC}	Supply Current (no load on pin 2 and pin 6)	–	–	20	mA
I_{CC}	Supply Current (with 75 Ω pin 2.1, with 600 Ω between pin 6.1)	–	75	–	mA
P_{tot}	Total Power Dissipation with Load	–	450	–	mW
	INPUTS (pin 8 and pin 3)				
–	Internal Video Input Swing from Picture IF (positive Video)	–	–	4.5	Vpp
–	Internal Video Input Impedance (positive video)	50	–	–	kΩ
–	Internal Video Input Bias Current (positive video)	6	25	40	µA
–	External Video Input Swing (positive video)	–	–	2	Vpp
–	External Video Input Impedance (positive video)	50	–	–	kΩ
	SWITCHED OUTPUT (pin 6) - R_{LOAD} = 600 Ω				
–	Video Output Swing	4.5	–	–	Vpp
–	Video Output Dynamic Impedance	–	–	25	Ω
–	Video DC Output Voltage (sync. pulse level note 1)	1.7	2	2.4	V
–	Video Bandwith Pin 6 – from Internal Input pin 3 (– 1 dB)	6	–	–	MHz
–	Video Bandwith Pin 6 – from External Input Pin 8 (– 3 dB)	6	–	–	MHz
–	Output Gain Pin 6 – Pin 8	+ 5	+ 6	+ 7	dB
–	Output Gain Pin 6 – Pin 3	– 1	– 0.5	0	dB
	EXTERNAL OUTPUT (pin 2) - R_{LOAD} = 75 Ω				
–	Video Output Swing	2.2	–	–	Vpp
–	Video Output Dynamic Impedance	–	10	–	Ω
–	Video DC Output Voltage (sync. pulse level , note 1)	1.7	2	2.4	V
–	Video Bandwidth (– 1dB)	6	–	–	MHz
–	Video Output Gain (pin 2 – pin 3)	– 1.8	– 1	– 0.4	dB
	SWITCHING INPUT (pin 5)				
–	Switching Input Unactive Low Level or Unconnected Pin (TV receiving)	0	–	3	V
–	Switching Input Active Level (ext. receiving)	7	–	V_{CC}	V
–	Switching Input Impedance	10	–	–	kΩ
	OTHER DYNAMIC FEATURES				
–	Video rejection Between Two Inputs 1MHz 1kHz	 – – 50	 – 50 –	 – –	 dB dB
–	Linearity Distortion Luma (test line 17) Chroma (test line 331) Intermodulation Luma – Chroma (test line 331)	 – – –	 2 2 5	 – – –	 % % %
–	Supply Voltage Rejection (1 kHz)	40	50	–	dB

Note : 1. Use a video signal with a synchro pulse in order to make the clamp work in a correct way. (75 Ω to the ground and 10 µF in series).

PACKAGE MECHANICAL DATA

8 PINS – PLASTIC DIP