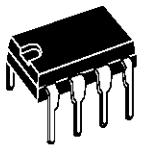
SGS-THOMSON MICROELECTRONICS

TEA2014A

VIDEO SWITCH

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



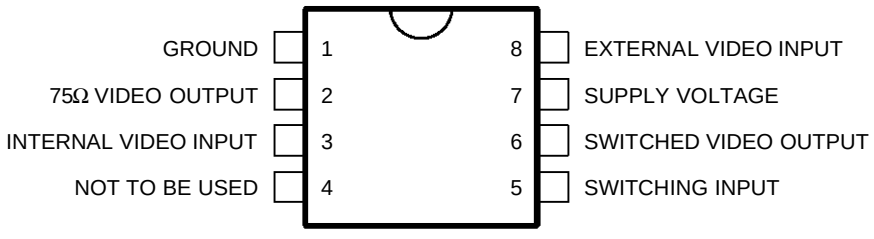
DIP8
(Plastic package)

ORDER CODE : TEA2014A

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 DIP8.

PIN CONNECTIONS



2014A-01.EPS

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

2014A-01.TBL

THERMAL DATA

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

2014A-02.TBL

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)	–	45	–	mA
P_{tot}	Total Power Dissipation with Load	–	400	–	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	–	–	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)	1.7	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

2014A-03.TBL

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

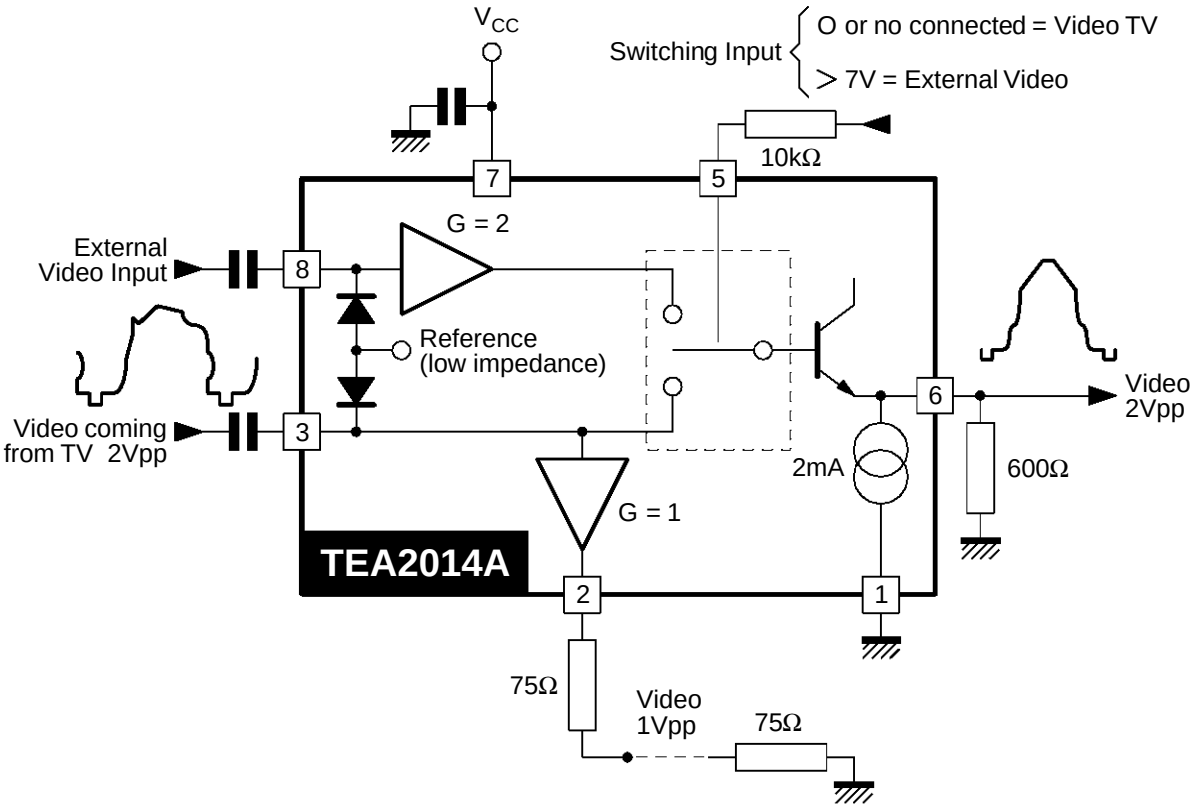
ELECTRICAL CHARACTERISTICS (continued)

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

Symbol	Parameter	Min.	Typ.	Max.	Unit
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

2014A-04.TBL

TYPICAL APPLICATION

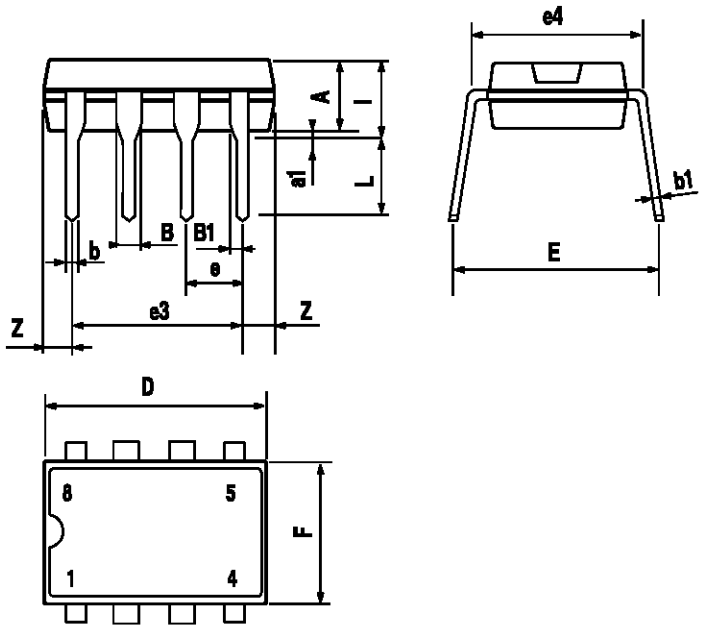


2014A-02.EPS

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

PACKAGE MECHANICAL DATA

8 PINS – PLASTIC DIP



PM-DIP8.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0260
I			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

DIP8.TBL