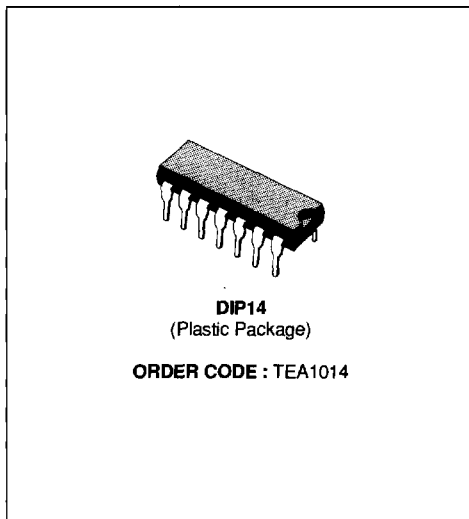


**VIDEO AND AUDIO SIGNALS SWITCHING  
FOR THE PERI-TELEVISION PLUG**

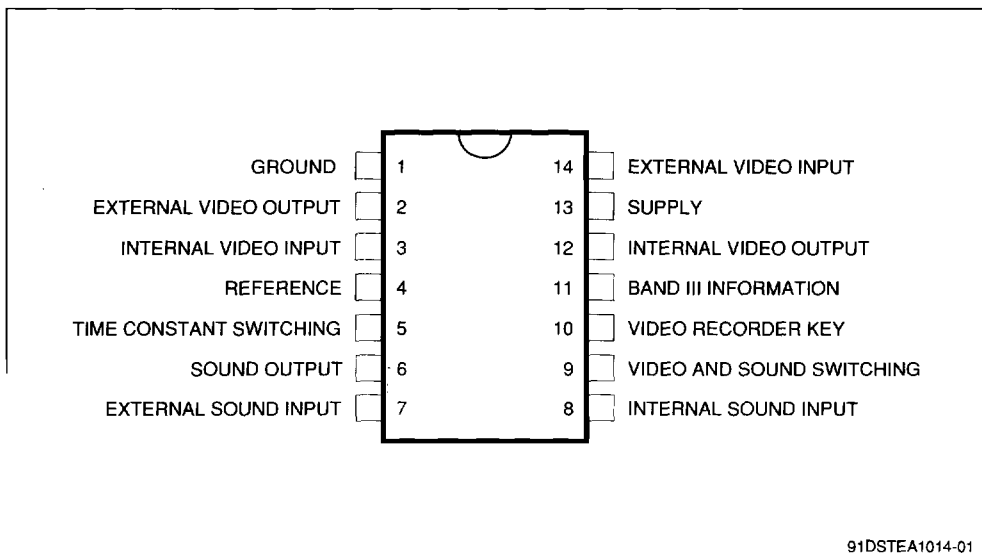
- VIDEO CROSSTALK : 60 dB TYPICAL
- LOW IMPEDANCE VIDEO OUTPUT 75  $\Omega$
- SHORT-CIRCUIT PROTECTION OF INPUTS AND OUTPUTS
- INTERNAL HORIZONTAL PLL TIME CONSTANT SWITCHING IN CASE OF VIDEO RECORDER RECEPTION



**DESCRIPTION**

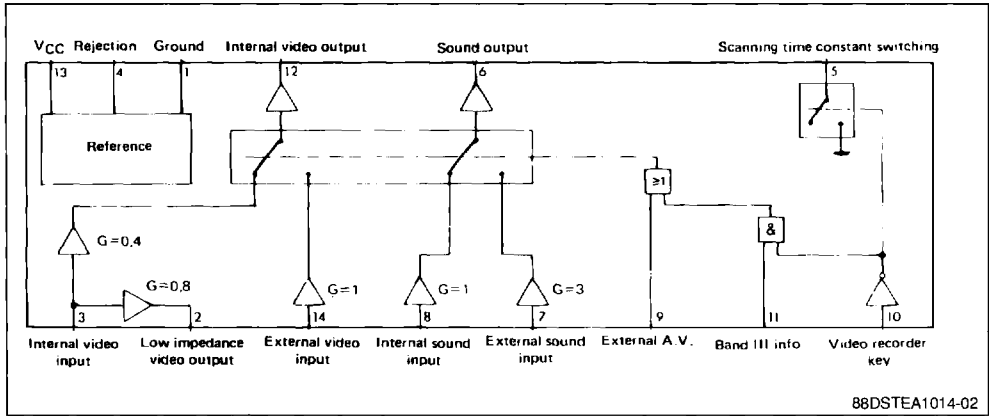
This integrated circuit provides both video and sound switching allowing connections between the peri-TV plug and video, sound sections in the TV set. Input and output signal characteristics follow the NFC 92250/EN 50049 norms.

**PIN CONNECTIONS**



91DSTEA1014-01

## BLOCK DIAGRAM



## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CC}$	Supply Voltage	18	V
$T_{stg}$	Storage Temperature Range	- 40, + 150	°C
$T_j$	Junction Temperature	+ 150	°C
$T_{oper}$	Operating Ambient Temperature Range	0 to 70	°C

## THERMAL DATA

$R_{th(j-a)}$	Junction Ambient Thermal Resistance	90	°C/W
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## ELECTRICAL OPERATING CHARACTERISTICS

$V_{CC} = 12\text{ V}$  ;  $T_{amb} = + 25\text{ °C}$  (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
	Supply Current, with no Load		37	50	mA
	Internal Video Input (coming from picture IF) (pin 3) Video Signal Amplitude (positive video) Input Voltage Range (referred to D. C. input Voltage) Input Impedance Input Capacitance	- 2.9 5	2.5	6.8 + 3.9 5	V <sub>pp</sub> V kΩ pF
	External Video Input (coming from peri-TV plug) (pin 14) Video Signal Amplitude (positive video) Input Voltage Range (referred to D. C. input Voltage) Input Impedance Input Capacitance	- 1.2 5	1	2.8 + 1.6 5	V <sub>pp</sub> V kΩ pF
	TV Video Output (pin 12) Signal Amplitude Output Voltage Swing (referred to D. C. output Voltage) Output Dynamic Impedance D.C. Output Voltage (without input signal) Loading Resistance Video Bandwidth (- 1 dB)	- 1.2 300 6	1 3.5	2.8 + 1.6 10	V <sub>pp</sub> V Ω V Ω MHz

**ELECTRICAL OPERATING CHARACTERISTICS** (continued) $V_{CC} = 12\text{ V}$  ;  $T_{amb} = +25\text{ }^{\circ}\text{C}$  (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
	Gain/internal Video	-9.5	-8	-6.5	dB
	Gain/external Video	-1.5	0	+1.5	dB
	External Video Output (low impedance) (pin 2)				
	Signal Amplitude (on 150 $\Omega$ grounded)	-2.4	2	5.5	$V_{pp}$
	Output Voltage Swing			+3.1	V
	Dynamic Output Impedance		10		$\Omega$
	D.C. Output Voltage (without input signal)		3.5		V
	Minimum Loading Resistance (electrical performance non specified)	75			$\Omega$
	Gain/internal Video	-3.5	-2	-0.5	dB
	Output Video Signals Characteristics				
	Video Rejection between two Inputs (1 MHz)	-55			dB
	Differential Group Delay			20	ns
	Linearity Distortion				
	Luma (test line 17)		2		%
	Chroma (test line 331)		2		%
	Intermodulation Luma-chroma (test line 331)		5		%
	Supply Voltage Rejection	45			dB
	Internal Sound Input (pin 8)				
	Input Signal		0.3	2	$V_{RMS}$
	Input Impedance		20		$k\Omega$
	External Sound Input (pin 7)				
	Input Signal		0.1	0.7	$V_{RMS}$
	Input Impedance		20		$k\Omega$
	Sound Output (pin 6)				
	Output Signal Amplitude		0.3		$V_{RMS}$
	Output Voltage Swing		2		$V_{RMS}$
	Distortion ( $V_O = 0.6 V_{eff}$ )			0.5	%
	Bandwidth	16			kHz
	Output Impedance		40		$\Omega$
	Load Impedance	-2			$k\Omega$
	Gain/internal Input	-1.5	0	+1.5	dB
	Gain/external Input	8	9.5	11	dB
	Supply Voltage Rejection	60			dB
	Crosstalk	-57			dB
	Video/sound Crosstalk	-60			dB
	LOGIC				
	External A. V. Input (peri-TV plug) (pin 9)				
	Unactive Low Level or Unconnected Pin (logic state 0) – (TV receiving)	0		3	V
	Active High Level (logic state 1) (ext. receiving)	9		$V_{CC}$	V
	Input Impedance		10		$k\Omega$
	"Band III" Input (pin 11)				
	Unactive Low Level or Unconnected Pin (logic state 0)	0		+3	V
	Active High Level (logic state 1)	9		$V_{CC}$	V
	Input Impedance High Level		10		$k\Omega$
	Input Current Low Level			1	$\mu\text{A}$
	Video-recorder Key Input (pin 10)				
	Unactive High Level or Unconnected Pin (logic state 1)	9		$V_{CC}$	V
	Active Low Level (logic state 0)	0		3	V
	Input Impedance		10		$k\Omega$
	Open Collector Output (time-constant switching) (pin 5)				
	Leakage Current (open collector)			1	$\mu\text{A}$
	Maximum Low Level Voltage ( $I(5) = 4\text{ mA}$ )			1.5	V

TAB.04

**CIRCUIT DESCRIPTION**

The main functions of the I.C. are following :

**VIDEO SWITCHING**

2 electronically switched inputs :

- one 2.5 Vpp input for internal video.
- one 1 Vpp input for signal coming from the peri-TV plug.

2 outputs :

- 1 Vpp output (low impedance 75  $\Omega$ ) for peri-TV plug.
- 1 Vpp output low impedance for video section of the TV set.

Each input and output is protected from ground short-circuit. The 75  $\Omega$  output is protected through a 75  $\Omega$  resistor.

**AUDIO SWITCHING**

Two electronically switched inputs :

- 300 mV rms input coming from internal audio.
- 100 mV rms input coming from the peri-TV plug one low impedance output 300 mV rms.

Inputs and outputs are also protected against ground short-circuit.

**SWITCHING LOGIC**

The logic takes into account the information on 4 pins.

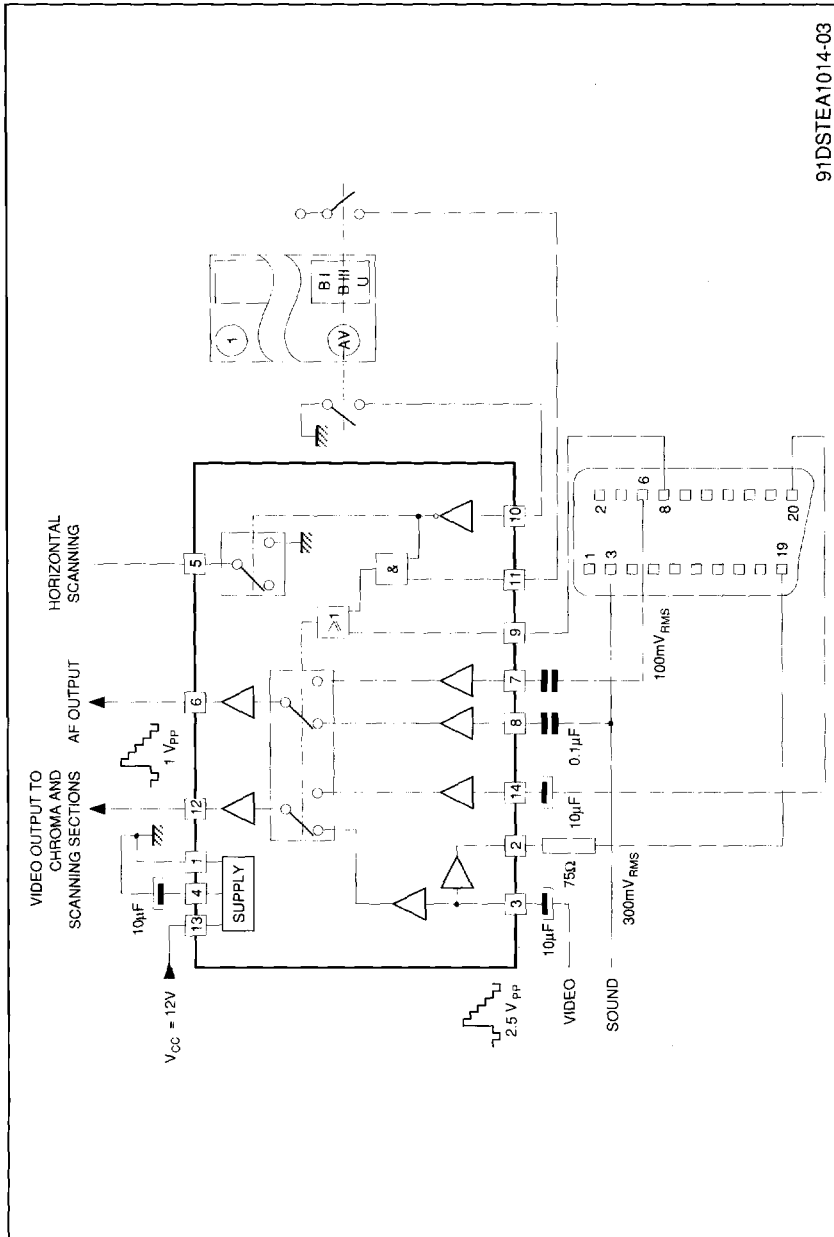
- Internal or external video and sound (pin 10 peri TV plug)
- Band III information
- Video recorder key.

External Video and Audio signals are selected in two cases.

- When there is a voltage information coming from peri-TV plug.
- When the video recorder key is selected (on TV front panel) and programmed on band I.

This I.C. includes an internal switch (open collector transistor) which commutes the time constant of the horizontal PLL circuit in case of video recorder reception.

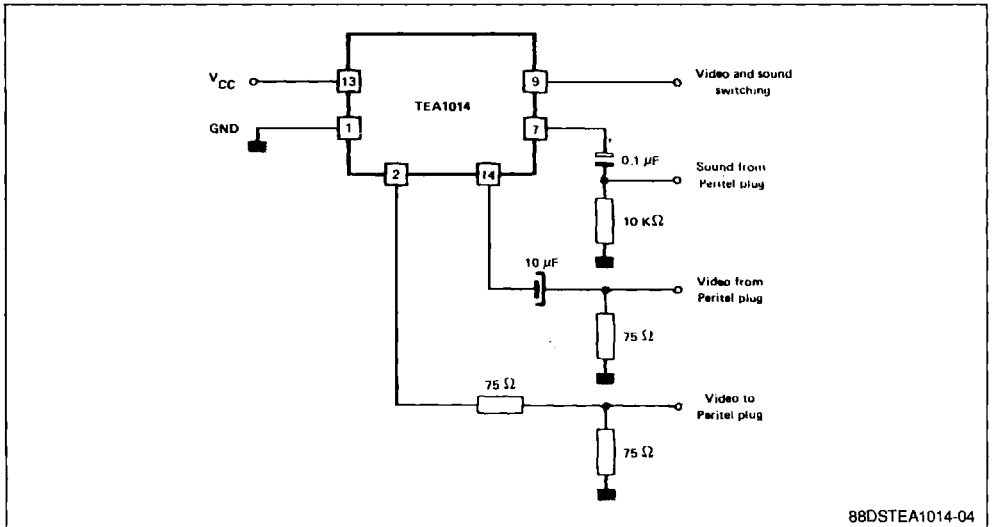
APPLICATION CIRCUIT



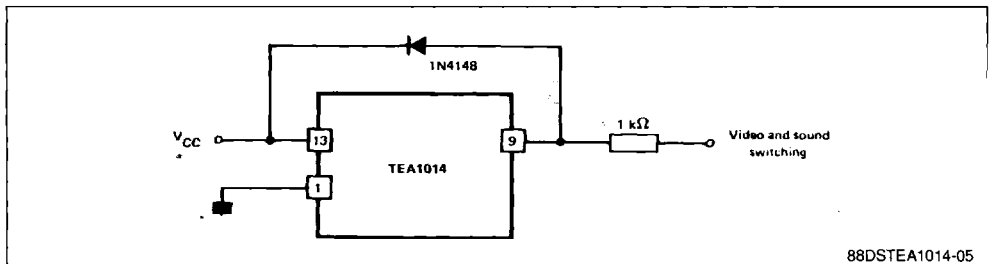
91DSTE1014-03

SAFETY INFORMATION FOR CRITICAL APPLICATIONS

Typical Connection Between Peritel Plug and TEA1014.

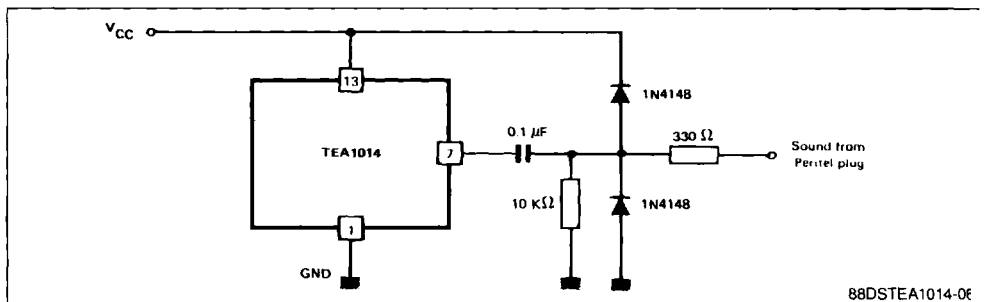


Voltage on pin 9 must not exceed the  $V_{CC}$  voltage on pin 13. In case of risk of over voltage, use the protection as described as below s :



All connections to Peritel plug are terminated by low impedance loads ( $75 \Omega$ ), except the external sound input.

In case of risk of electrostatic discharge, use the protection as described as below.



## PACKAGE MECHANICAL DATA

## 14 PINS – PLASTIC DIP

