



SANYO Semiconductors

# DATA SHEET

## LV7980 — Bi-CMOS IC For CRT-TV 3 in 1 RGB Driver

### Overview

The LV7980 is a 3 in 1 RGB driver for CRT-TV.

### Functions

- 3 in 1 RGB driver
- Wide bandwidth: 4.5MHz ( $V_O = 60V_{p-p}$ )

### Specifications

#### Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{DD \text{ max}}$		250	V
Output voltage	$V_{OUT \text{ max}}$		0 to $V_{DD}$	V
Input Voltage	$V_{IN \text{ max}}$		10	V
Allowable power dissipation	$P_d \text{ max}$	$T_a \leq 25^\circ\text{C}$ , With infinite heat sink	6	W
Thermal resistance	$\theta_{jc}$		11	$^\circ\text{C/W}$
Operating temperature	$T_{opr}$		-20 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to +150	$^\circ\text{C}$

#### Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	$V_{DD}$		200	V
Operating supply voltage range	$V_{DD \text{ op}}$		180 to 210	V

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# LV7980

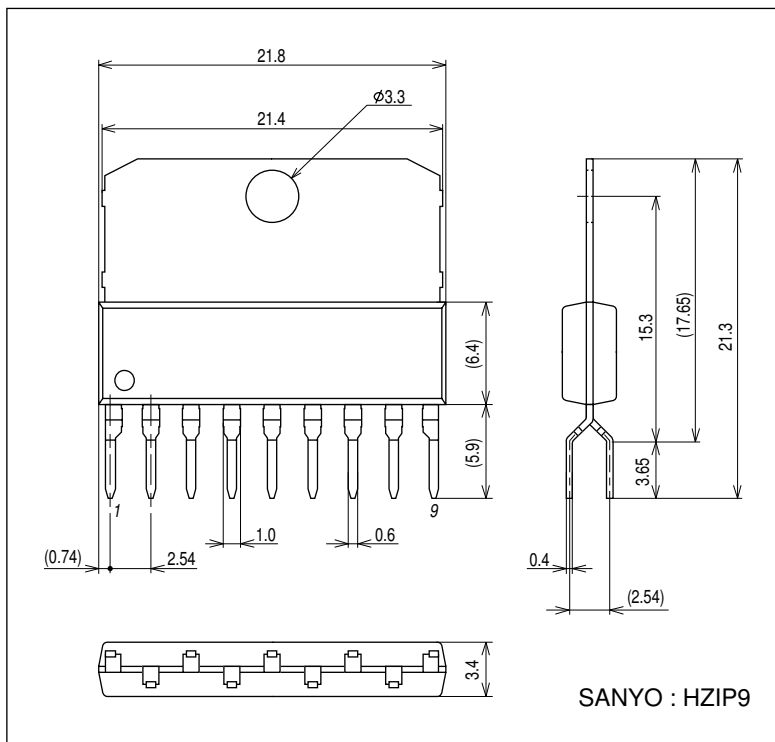
**Electrical Characteristics** at Ta = 25°C, VDD = 200V, VOUT = 1/2VDD, Ccath = 10pF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply current	I <sub>Q</sub>	No signal	8.0	9.4	11.0	mA
Internal reference voltage	V <sub>ref</sub>			2.5		V
Input resistance	R <sub>i</sub>			1.5		kΩ
Amplifier gain	G <sub>v</sub>		76	84	92	
Output voltage	V <sub>O</sub>	No signal	84	94	104	V
Differential Output voltage between each channels	ΔV <sub>O</sub>		-5	0	+5	V
Idet offset current	I <sub>do</sub>	V <sub>Idet</sub> = 1.8V to 5V	-50		+50	μA
Idet linearity	I <sub>dlin</sub>	I <sub>O</sub> = -100μA to +100μA, V <sub>Idet</sub> = 1.8V to 5V	-0.9	-1.0	-1.1	
		I <sub>O</sub> = -100μA to +10mA, V <sub>Idet</sub> = 1.8V to 4V	-0.9	-1.0	-1.1	
Maximum output current	I <sub>O</sub> max			20		mA
Maximum output voltage	V <sub>O</sub> max		V <sub>DD</sub> -15			V
Minimum output voltage	V <sub>O</sub> min				10	V
Frequency bandwidth	F1	V <sub>O</sub> = 60Vp-p		4.5		MHz
	F2	V <sub>O</sub> = 100Vp-p		3.5		MHz
Slew rate	SR	V <sub>i</sub> = 2.5Vp-p square wave		800		V/μs
Propagation time	T <sub>pco</sub>	V <sub>O</sub> = 100Vp-p square wave		80		ns
Settling time	T <sub>st</sub>	V <sub>O</sub> = 100Vp-p square wave			350	ns
Rise time	T <sub>r</sub>	V <sub>O</sub> = 50V to 150V square wave		100		ns
Fall time	T <sub>f</sub>	V <sub>O</sub> = 150V to 50V square wave		100		ns
Output voltage overshoot	O <sub>v</sub>	V <sub>O</sub> = 100Vp-p square wave		2		%
Ripple rejection	PSRR	f = 10kHz		43		dB
Cross talk between channels	CT			30		dB

## Package Dimensions

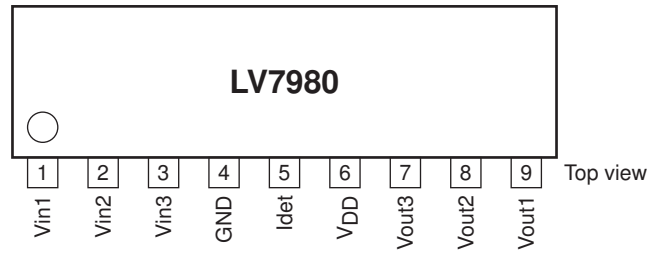
unit : mm (typ)

3374

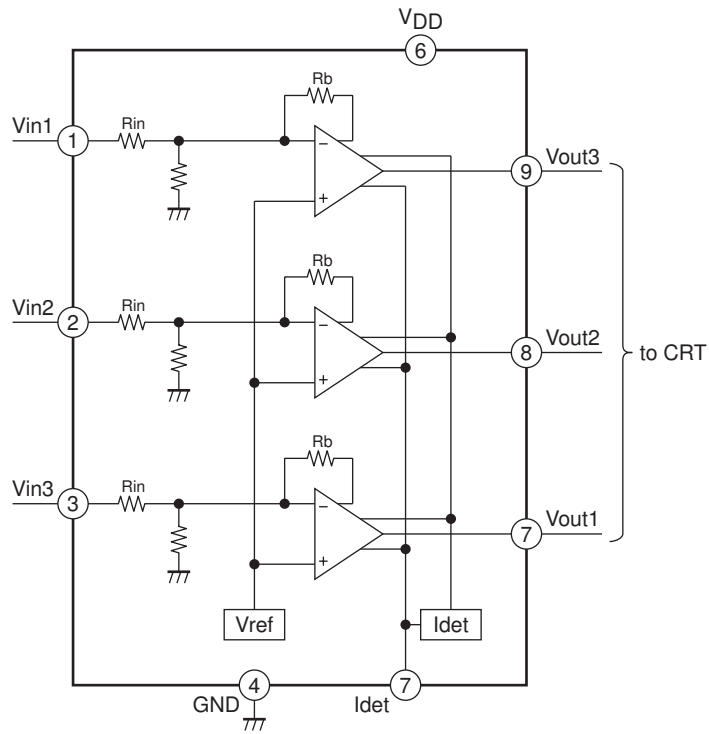


# LV7980

## Pin Assignment



## Block Diagram



# LV7980

## Pin Function

Pin No.	Pin name	Function	Equivalent circuit
1 2 3	Vin1 Vin2 Vin3	Inverting input.	
4	GND	Ground.	
5	Idet	Cathode current output	
6	V <sub>DD</sub>	Supply voltage	
7 8 9	Vout3 Vout2 Vout1	Output.	

Input Signal and Output Waveform

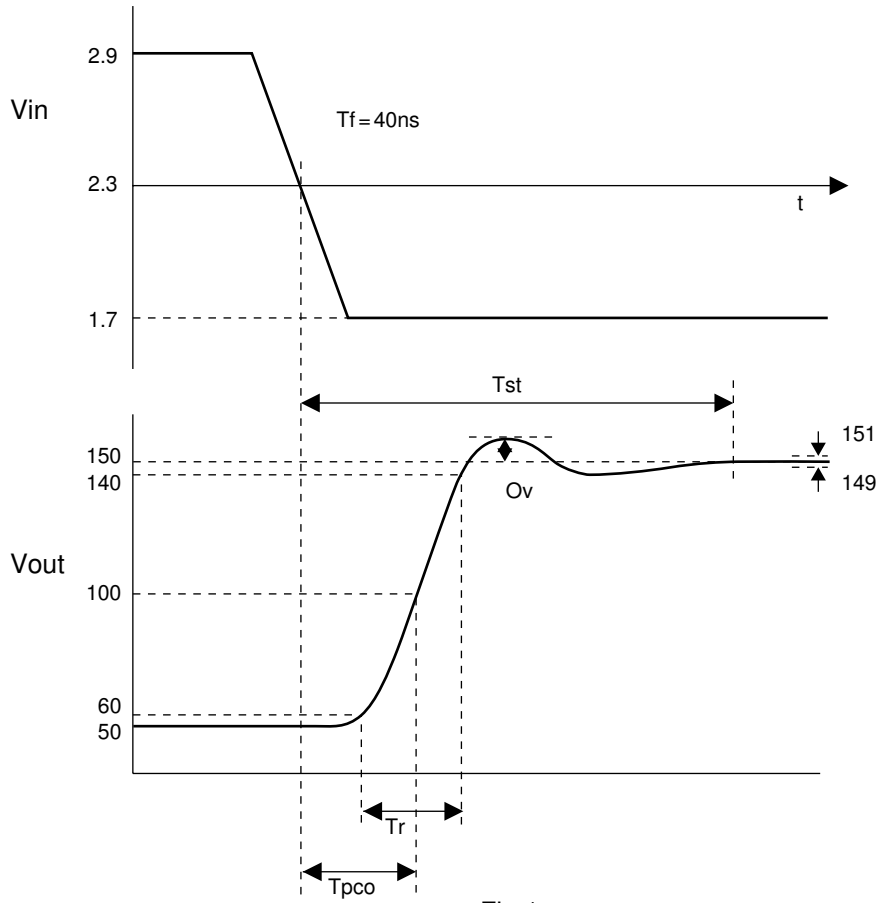


Fig.1

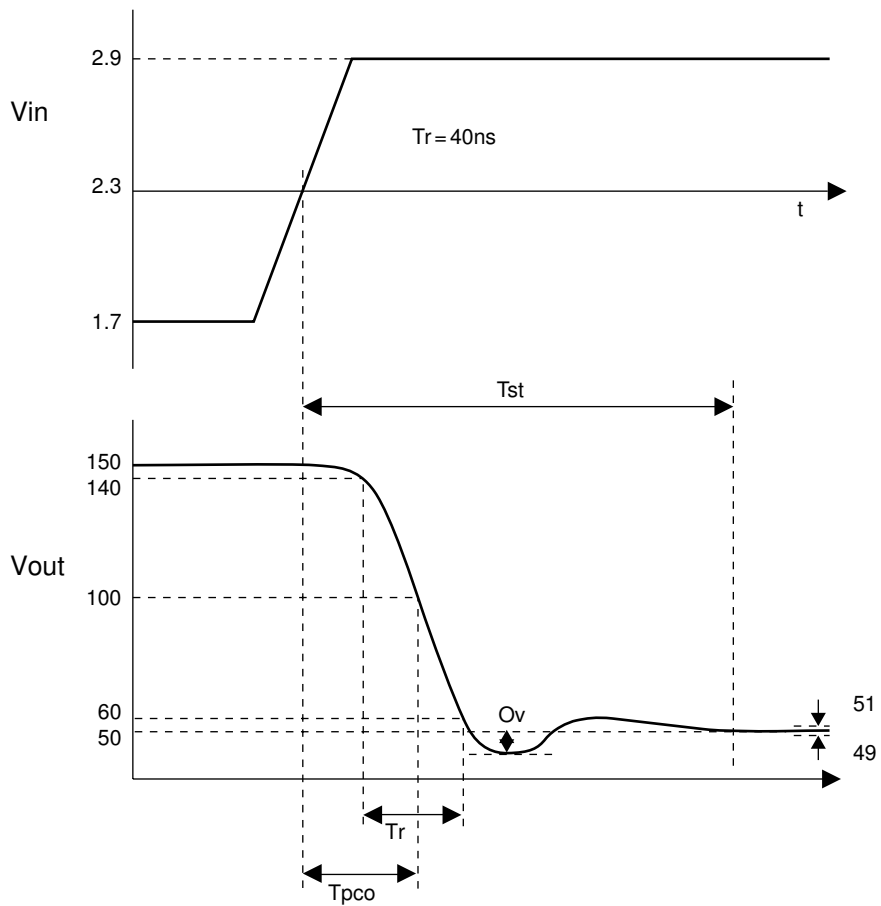
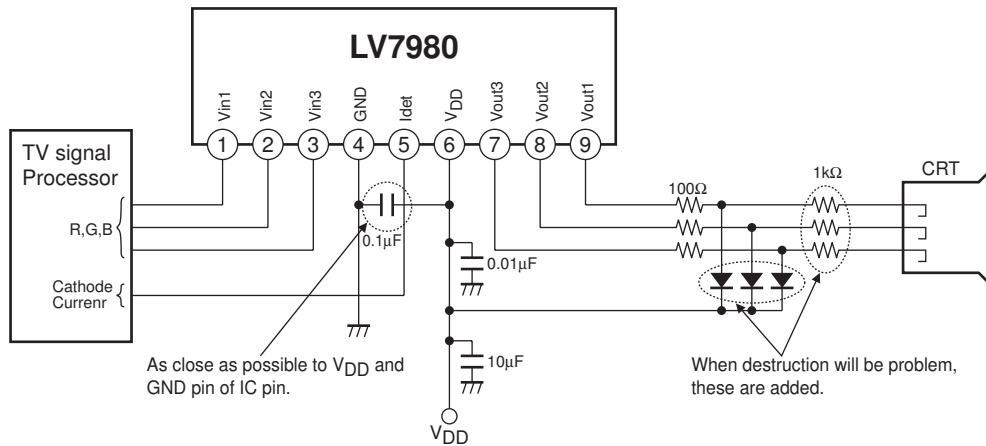


Fig.2

Application Circuit Example



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