



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	θ_{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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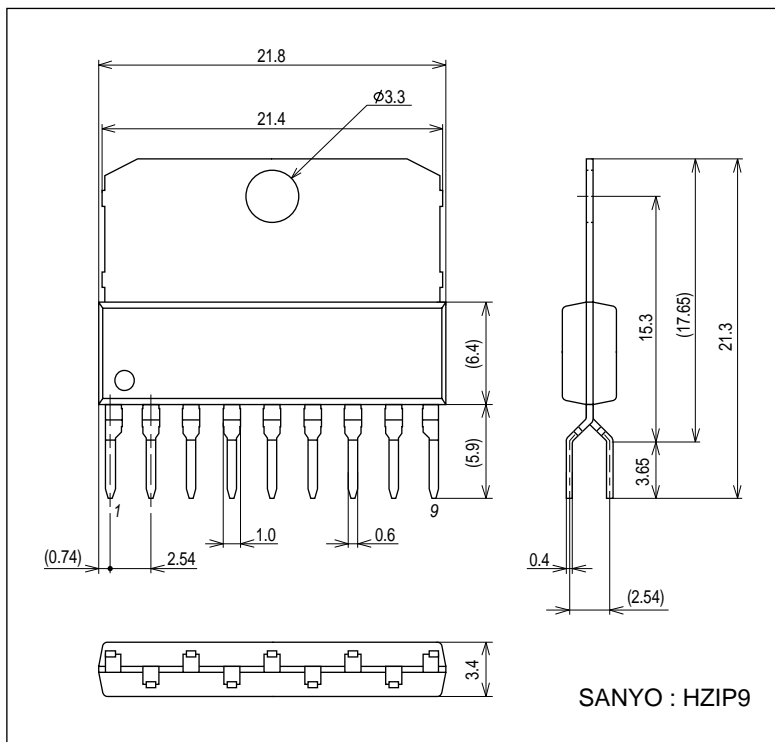
Electrical Characteristics at Ta = 25°C, V_{DD} = 200V, V_{OUT} = 1/2V_{DD}, C_{cath} = 10pF

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

Package Dimensions

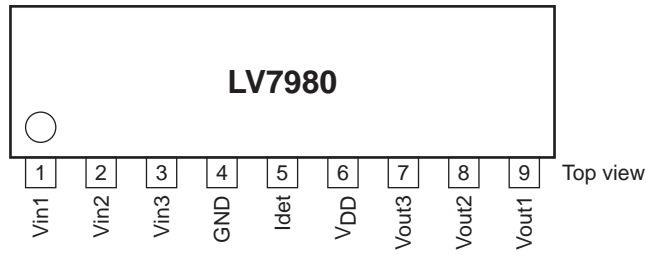
unit : mm (typ)

3374

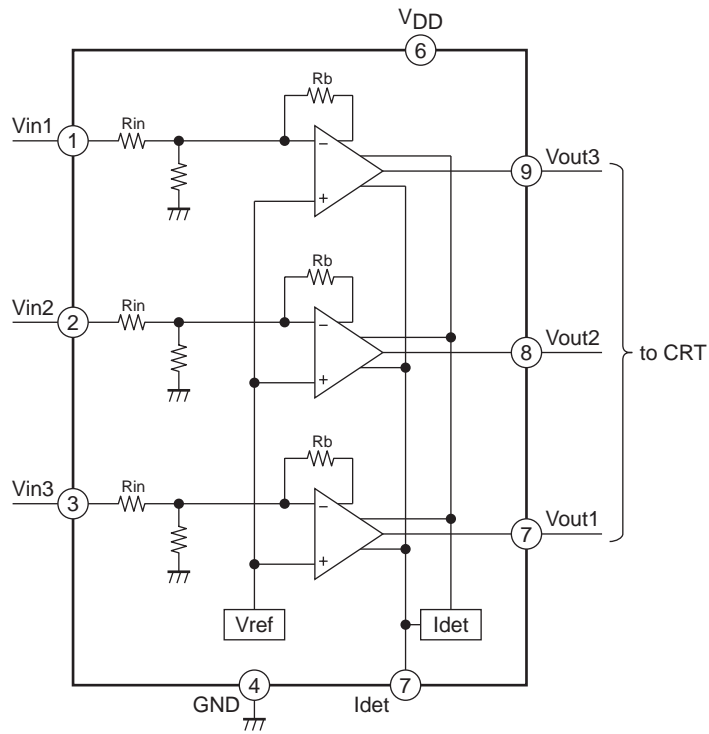


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Pin Assignment



Block Diagram

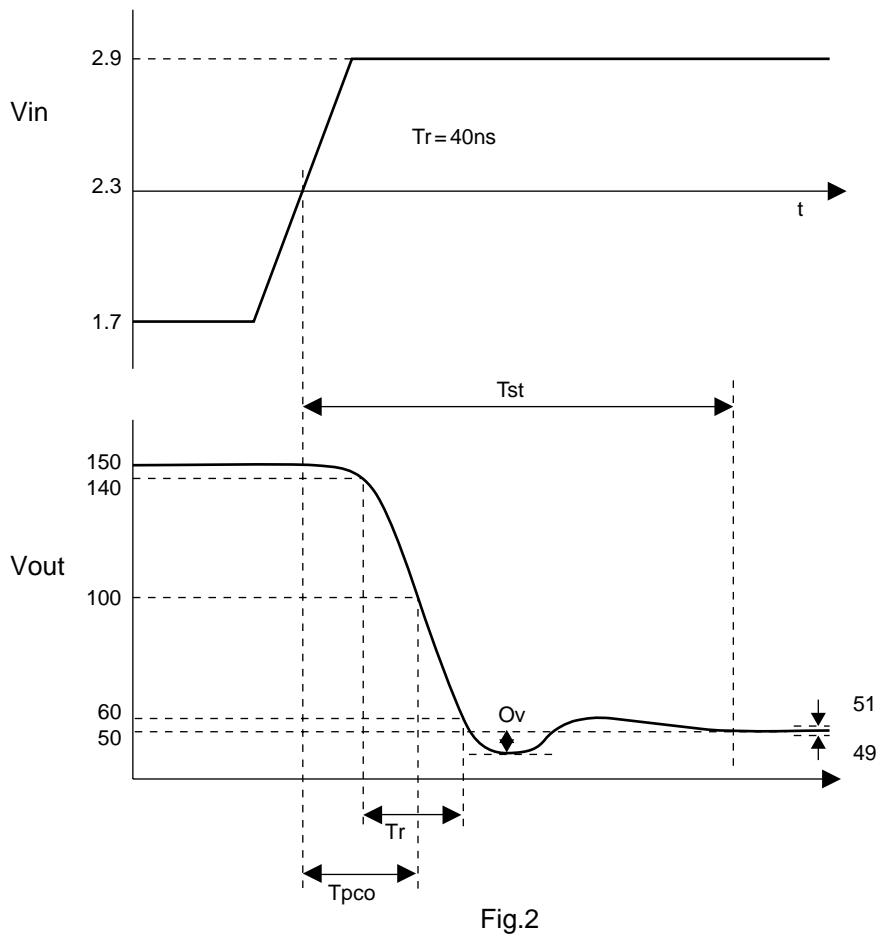
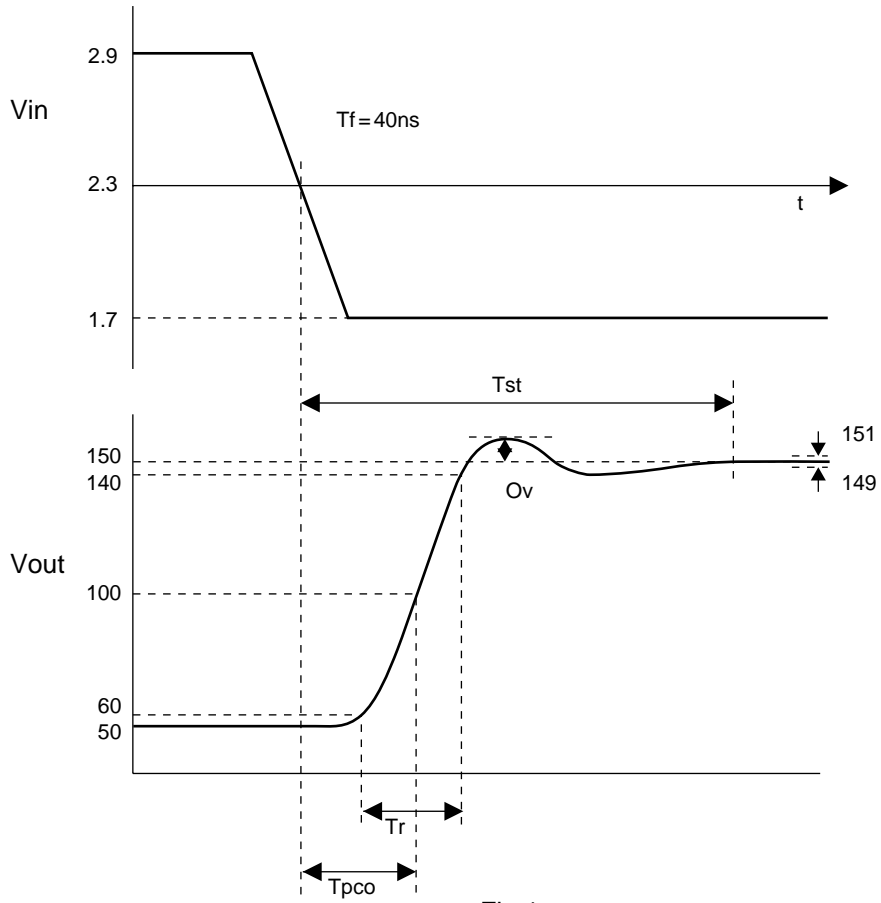


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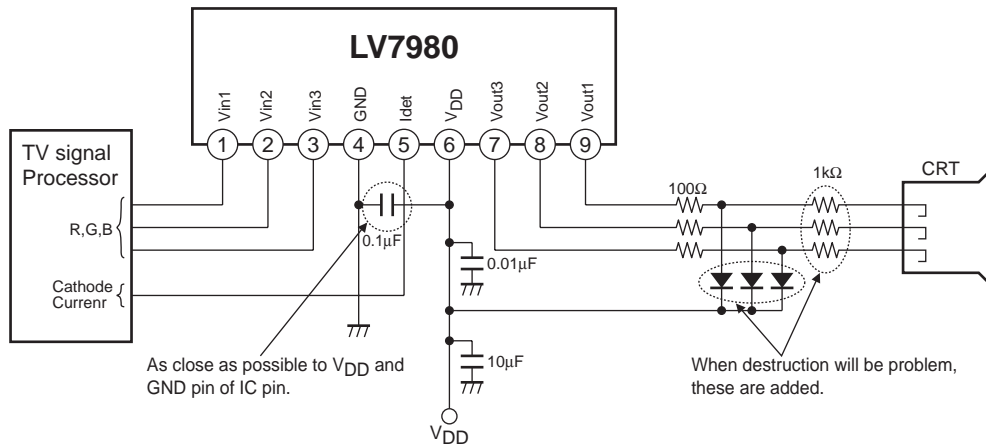
Pin Function

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 _{DD}	Supply voltage	
7 8 9	Vout3 Vout2 Vout1	Output.	

Input Signal and Output Waveform



Application Circuit Example



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