Ordering number : ENA1426

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 = 60Vp-p)

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{DD} max		250	V
Output voltage	V_{OUT} max		0 to V_{DD}	V
Input Voltage	V_{IN} max		10	V
Allowable power dissipation	Pd max	Ta ≤ 25°C, With infinite heat sink	6	W
Thermal resistance	θjc		11	°C/W
Operating temperature	Topr		-20 to +85	°C
Storage temperature	Tstg		-40 to +150	°C

Operating Conditions at Ta = 25°C

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

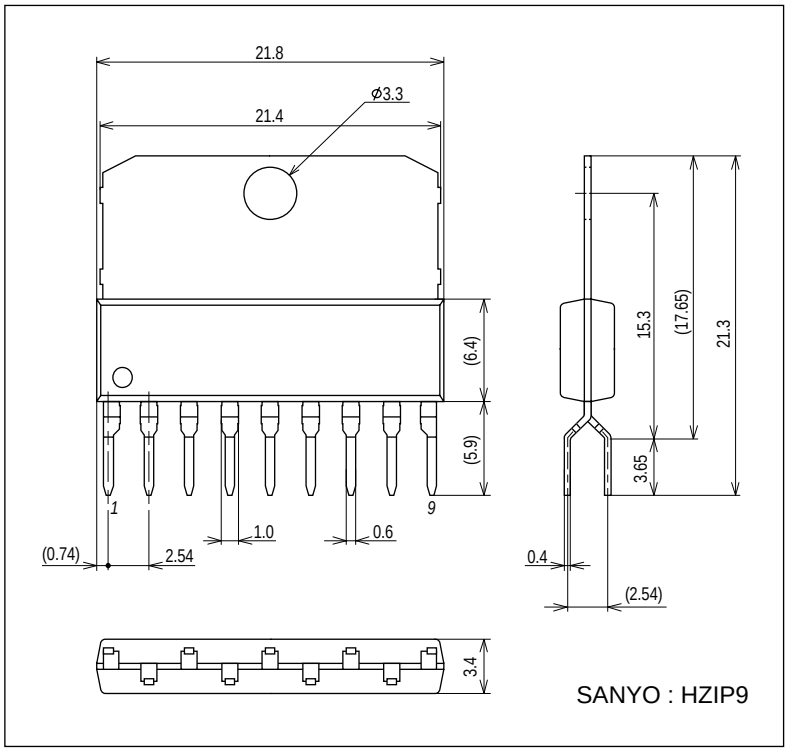
Electrical Characteristics at Ta = 25°C, V_{DD} = 200V, VOUT = 1/2V_{DD}, Ccath = 10pF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply current	I_Q	No signal	8.0	9.4	11.0	mA
Internal reference voltage	Vref			2.5		V
Input resistance	Ri			1.5		kΩ
Amplifier gain	Gv		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	Ido	VIdet = 1.8V to 5V	-50		+50	μA
Idet linearity	Idlin	I_O = -100μA to +100μA, VIdet = 1.8V to 5V	-0.9	-1.0	-1.1	
		I_O = -100μA to +10mA, VIdet = 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	Vi = 2.5Vp-p square wave		800		V/μs
Propagation time	Tpco	V_O = 100Vp-p square wave		80		ns
Settling time	Tst	V_O = 100Vp-p square wave			350	ns
Rise time	Tr	V_O = 50V to 150V square wave		100		ns
Fall time	Tf	V_O = 150V to 50V square wave		100		ns
Output voltage overshoot	Ov	V_O = 100Vp-p square wave		2		%
Ripple rejection	PSRR	f = 10kHz		43		dB
Cross talk between channels	CT			30		dB

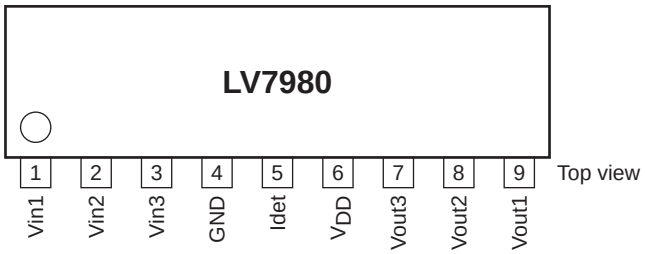
Package Dimensions

unit : mm (typ)

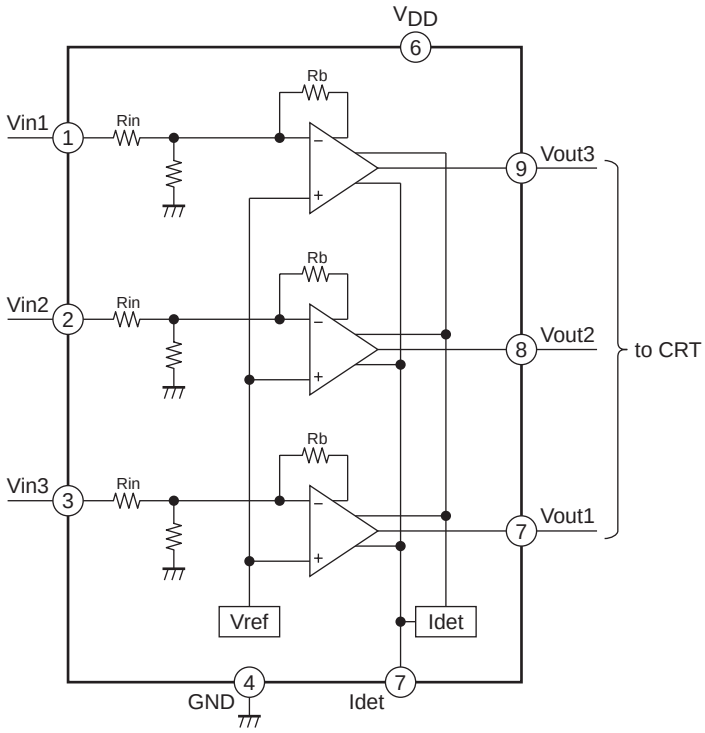
3374



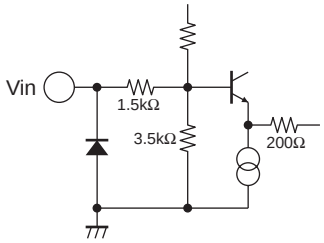
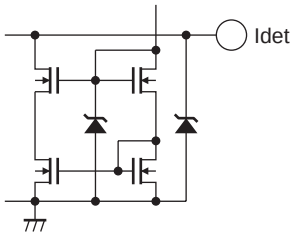
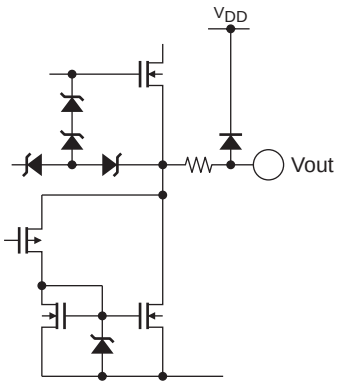
Pin Assignment



Block Diagram



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

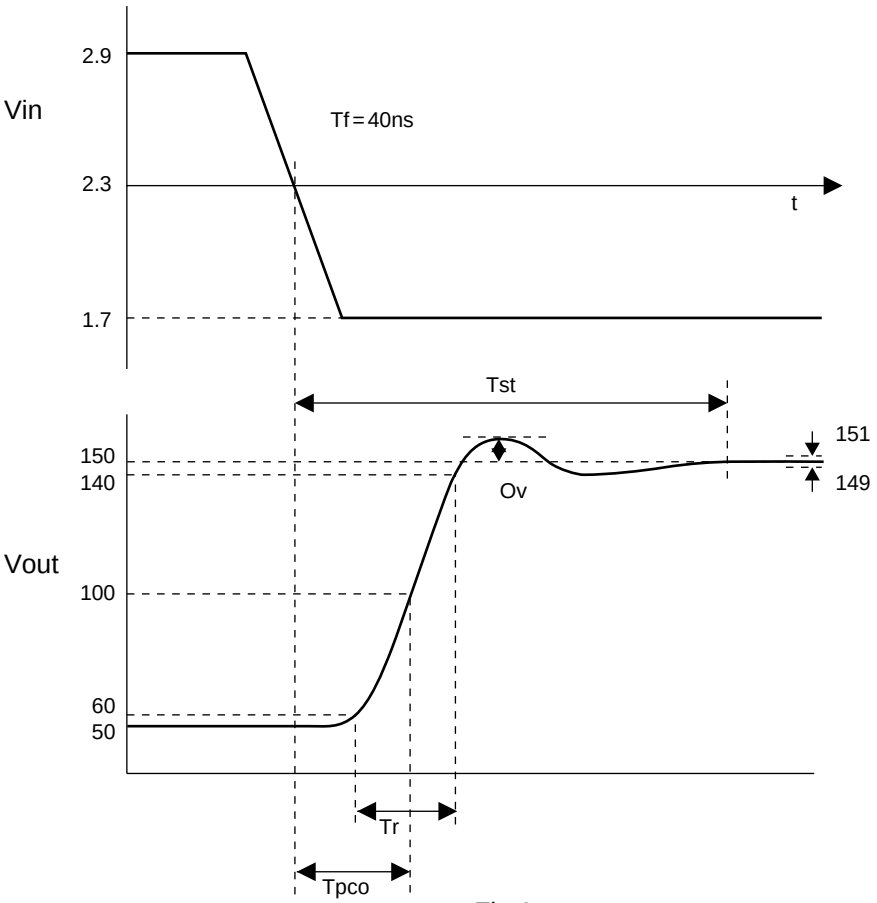


Fig.1

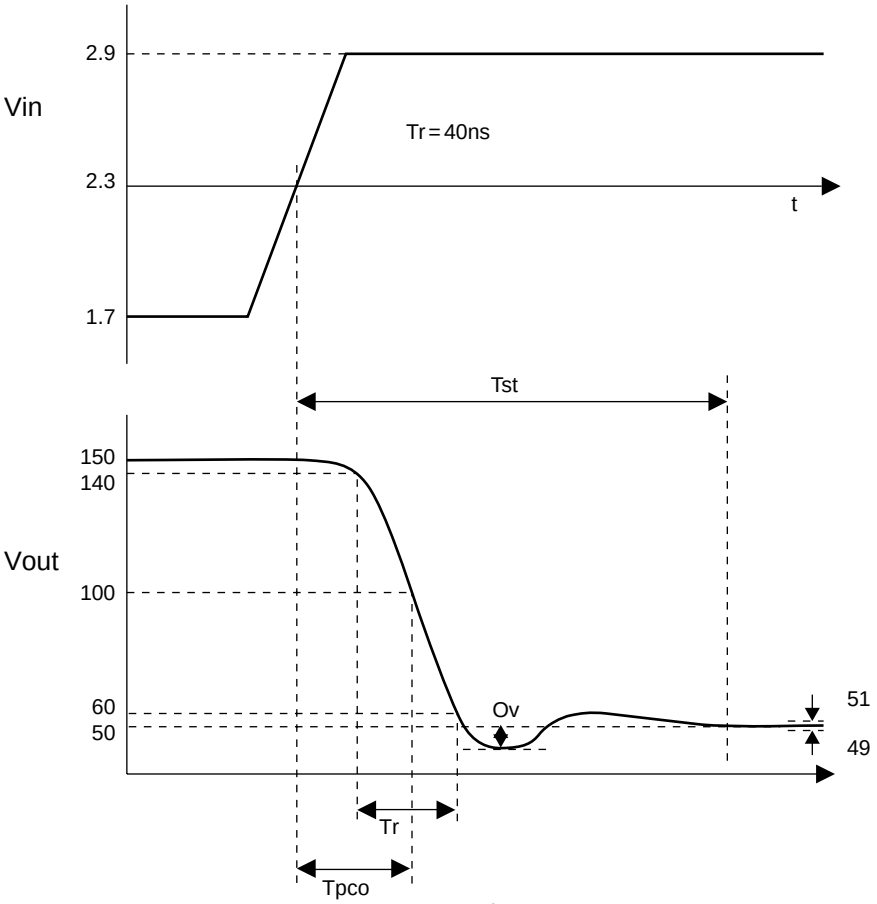


Fig.2

Application Circuit Example