Ordering number : ENA1398A

SANYO Semiconductors
DATA SHEET

LV761XXX Series

Bi-CMOS IC

For NTSC/PAL/SECAM Color TVs Built-in CTV Microcontroller Video and Sound Processing ICs (VIF/SIF/Y/C/Deflection/CbCr IN)

Overview

The LV761XXX series is a single-chip video and sound processor IC with a built-in microcontroller that supports all of the NTSC, PAL and SECAM broadcasting systems. The IC provides fully integrated solution to rationalize the design of color TV sets, increase productivity, and reduce total costs.

Functions

- I^2C bus control system with a built-in microcontroller
- ROM 64K byte (Program: 48K, CG-ROM: 16K)
- VIF/SIF/Y/C/Deflection/CbCr IN
- Adjustment-free VIF/SIF
- 1X'tal multi-system that supports NTSC, PAL and SECAM broadcasting systems
- No VCO coil required
- Internal sound carrier BPF, 4-system sound carrier trap
- Digital AFT system

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Lineup

Type No.	SECAM	Tone/Surround	E/W	ROM
LV761102F				Flash
LV761102C				Mask
LV761112F			○	Flash
LV761112C			○	Mask
LV761122F		○		Flash
LV761122C		○		Mask
LV761132F		○	○	Flash
LV761132C		○	○	Mask
LV761202F	○			Flash
LV761202C	○			Mask
LV761222F	○	○		Flash
LV761222C	○	○		Mask
LV761232F	○	○	○	Flash
LV761232C	○	○	○	Mask

Specifications

Maximum Ratings (BIP Chip) at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{48} max		9.0	V
	V_{69} max		6.0	V
	V_{78} max		6.0	V
Maximum supply current	I_{11} max		15	mA
	I_{17} max		20	mA
	I_{51} max		19	mA
Allowable power dissipation	Pd max	Ta ≤ 65°C *	1.3	W
Operating temperature	Topr		-10 to +65	°C
Storage temperature	Tstg		-55 to +150	°C

* Mounted on a substrate : 230mm×150mm×1.6mm, glass epoxy board.

Absolute Maximum Ratings (Micro-computer Chip) at Ta = 25°C, V_{SS} = 0V

Parameter		Symbol	Pins	Conditions	Ratings			Unit
					min	typ	max	
Maximum supply voltege		V_{DD} max	CpuV_{DD}		-0.3		+6.0	V
Input voltege		V_I	XT1, $\overline{RES}$		-0.3		V_{DD}+0.3	V
Output voltege		V_O(1)	XT2, FILT		-0.3		V_{DD}+0.3	V
		V_O(2)	CpuV_{DD}2		-0.3		3.3V+0.3	V
Input/output voltege		V_{IO}	Ports0, 1		-0.3		V_{DD}+0.3	V
High level output current	Peak output current	I_OPH	Ports04 to 07, 1	•CMOS output •For each pin.	-10			mA
	Mean output current	I_OMH	Ports04 to 07, 1	•CMOS output •For each pin.	-1			mA
	Total output current	ΣI_OAH	Ports04 to 07, 1	The total of all pins.	-25			mA
Low lever output current	Peak output current	I_OPL	Ports0, 1	For cach pin			20	mA
	Mean output current	I_OML(1)	P02, P03, P06, P07 Ports1	For cach pin			1	mA
		I_OML(2)	P00, P01, P04, P05	For cach pin			8	mA
	Toral output current	ΣI_OAL(1)	P02, P03, P06, P07 Ports1	The total of all pins.			45	mA
		ΣI_OAL(2)	P00, P01, P04, P05	The total of all pins.			16	mA

Operating Conditions (BIP Chip) at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{48}		8.0	V
	V_{69}		5.0	V
	V_{78}		5.0	V
Recommended supply current	I_{11}		11	mA
	I_{17}		13	mA
	I_{51}		13	mA
Operating supply voltage range	V_{48}		7.7 to 8.3	V
	V_{69}		4.7 to 5.3	V
	V_{78}		4.7 to 5.3	V
Operating supply current range	I_{11}		9 to 13	mA
	I_{17}		11 to 15	mA
	I_{51}		11 to 15	mA

Recommended Operating Range (Micro-computer Chip) at Ta = -10°C to +65°C, V_{SS} = 0V

Parameter	Symbol	Pins	Conditions	V_{DD} [V]	Ratings			Unit
					min	typ	max	
Operating supply voltege	V_{DD}	CpuV_{DD}	0.229µs ≤ t_{CYC} ≤ 200µs		4.5		5.5	V
Hold voltage	V_{HD}	CpuV_{DD}	RAMs and the registers data are kept in HOLD mode.		2.0		5.5	V
High level input voltage	VIH (1)	Ports0, 1, P00 port input /interrupt		4.5 to 5.5	0.3V_{DD} +0.7		V_{DD}	V
	VIH (2)	Port00 Watch-dog timer		4.5 to 5.5	0.9V_{DD}		V_{DD}	V
	VIH (3)	$\overline{RES}$		4.5 to 5.5	0.75V_{DD}		V_{DD}	V
Low level input voltage	VIL (1)	Ports0, 1, P00 port input /interrupt		4.5 to 5.5	V_{SS}		0.1V_{DD} +0.4	V
	VIL (2)	Port00 Watch-dog timer		4.5 to 5.5	V_{SS}		0.15V_{DD} +0.4	V
	VIL (3)	$\overline{RES}$		4.5 to 5.5	V_{SS}		0.25V_{DD}	V
Operation cycle time (*1)	tCYC (1)		All functions operating	4.5 to 5.5		0.231		µs
	tCYC (2)		OSD and Data slicer are not operating	4.5 to 5.5	0.231		200	µs
Oscillation frequency range	FmVCO1		Built-in VCO1 Oscillation System clock	4.5 to 5.5		13.0		MHz
	FmVCO1 (*2)		Built-in VCO2 oscillation OSD clock, OCKSEL = 0	4.5 to 5.5		12.5		MHz
			Built-in VCO2 oscillation OSD clock, OCKSEL = 1			16.6		MHz
	FmRC		Built-in RC oscillation	4.5 to 5.5	0.3	1.0	2.0	MHz
	FsX'tal	XT1 (P07) XT2 (P06)	At the 32.768KHz crystal oscillating	4.5 to 5.5		32.768		kHz
Oscillation stabilizing time	tmsVCO		•after the HOLD mode •Power-On	4.5 to 5.5		300		mS

(Note) FLASH-ROM erase/write temperature range : Ta = 25±2°C (V_{DD} = 4.5 to 5.5V)

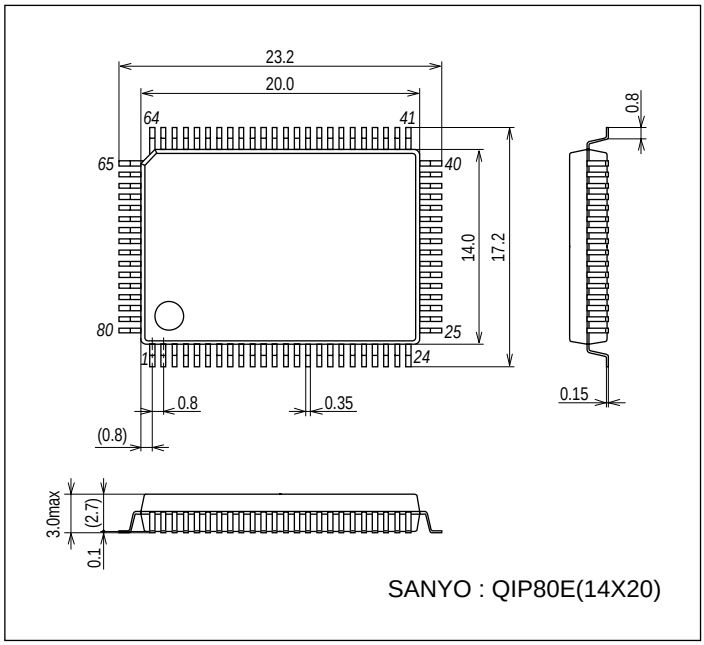
(*1) Relational expression between t_{CYC} and oscillation frequency: 1/1 frequency dividing : 3/FmVCO1, 1/2 frequency dividing : 6/FVCO1.

(*2) OCKSEL is the selectable register for OSD clock frequency. (See the LC873200 users manual for details.)

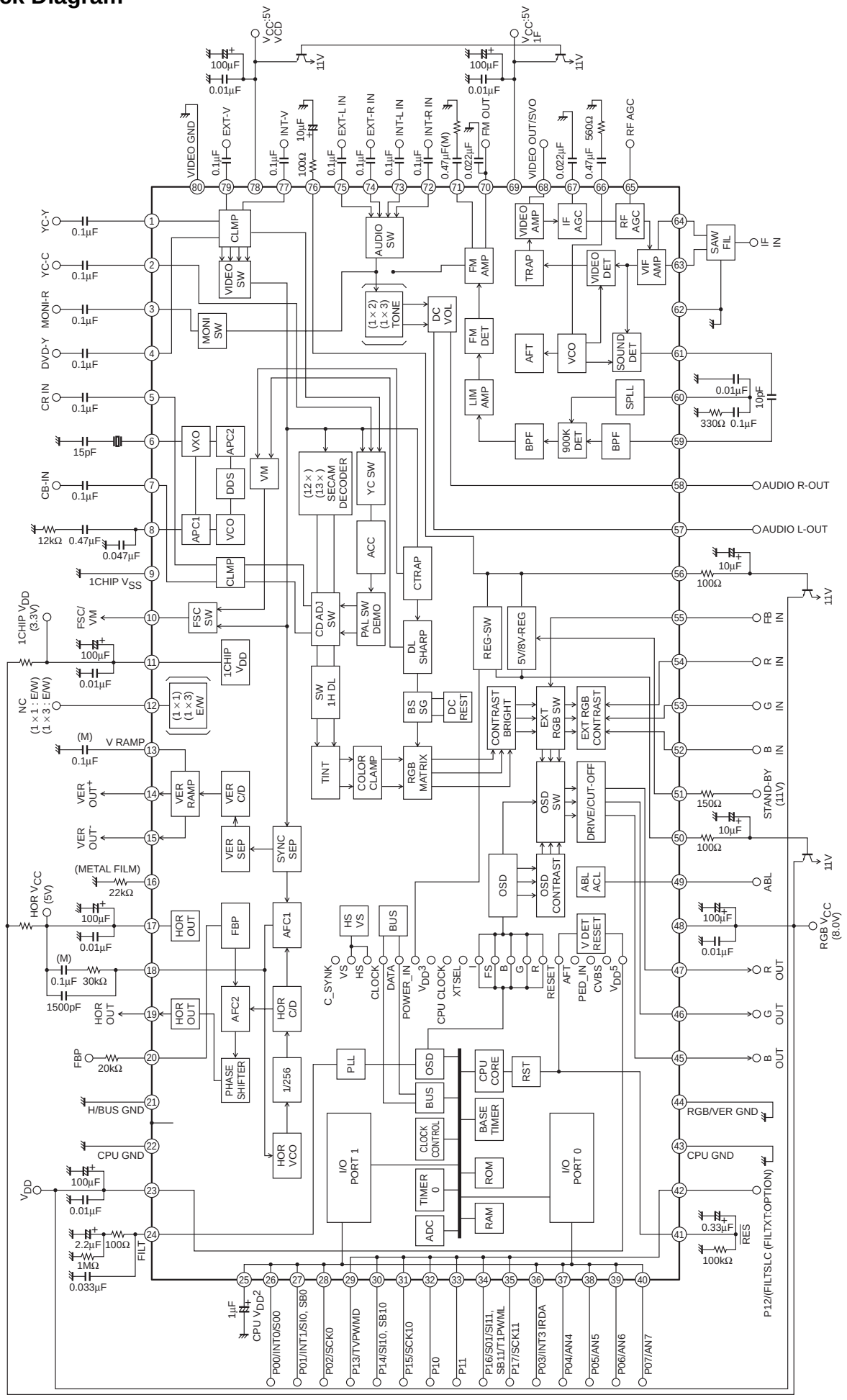
Package Dimensions

unit : mm (typ)

3174A



Block Diagram



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