



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

- I²C 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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SANYO Semiconductor Co., Ltd.

www.semiconductor-sanyo.com/network

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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	P _d max	Ta ≤ 65°C *	1.3	W
Operating temperature	T _{opr}		-10 to +65	°C
Storage temperature	T _{stg}		-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 voltage	V _{DD} max	CpuV _{DD}		-0.3		+6.0	V
Input voltage	V _I	XT1, RES		-0.3		V _{DD} +0.3	V
Output voltage	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 voltage	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 each pin		20	mA
	Mean output current	I _{OML} (1)	P02, P03, P06, P07 Ports1	For each pin		1	mA
		I _{OML} (2)	P00, P01, P04, P05	For each pin		8	mA
	Total 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	

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V48		8.0	V
	V69		5.0	V
	V78		5.0	V
Recommended supply current	I11		11	mA
	I17		13	mA
	I51		13	mA
Operating supply voltage range	V48		7.7 to 8.3	V
	V69		4.7 to 5.3	V
	V78		4.7 to 5.3	V
Operating supply current range	I11		9 to 13	mA
	I17		11 to 15	mA
	I51		11 to 15	mA

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

Parameter	Symbol	Pins	Conditions	VDD [V]	Ratings			Unit
					min	typ	max	
Operating supply voltage	VDD	CpuVDD	$0.229\mu\text{s} \leq t_{\text{CYC}} \leq 200\mu\text{s}$		4.5		5.5	V
Hold voltage	VHD	CpuVDD	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	$0.3V_{\text{DD}} + 0.7$		VDD	V
	VIH (2)	Port00 Watch-dog timer		4.5 to 5.5	$0.9V_{\text{DD}}$		VDD	V
	VIH (3)	RES		4.5 to 5.5	$0.75V_{\text{DD}}$		VDD	V
Low level input voltage	VIL (1)	Ports0, 1, P00 port input /interrupt		4.5 to 5.5	VSS		$0.1V_{\text{DD}} + 0.4$	V
	VIL (2)	Port00 Watch-dog timer		4.5 to 5.5	VSS		$0.15V_{\text{DD}} + 0.4$	V
	VIL (3)	RES		4.5 to 5.5	VSS		$0.25V_{\text{DD}}$	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	4.5 to 5.5	OCKSEL = 0		12.5	MHz
					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 (VDD = 4.5 to 5.5V)

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

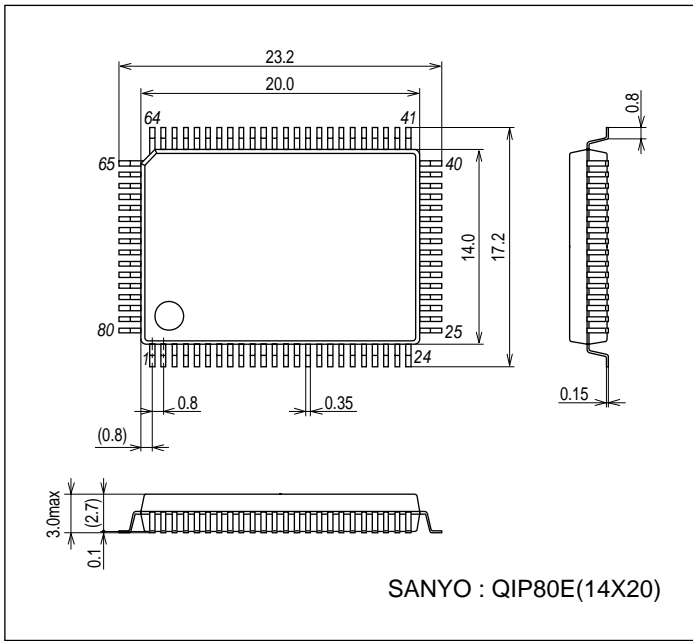
(*2) OCKSEL is the selectable register for OSD clock frequency. (See the LC873200 users manual for details.)

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Package Dimensions

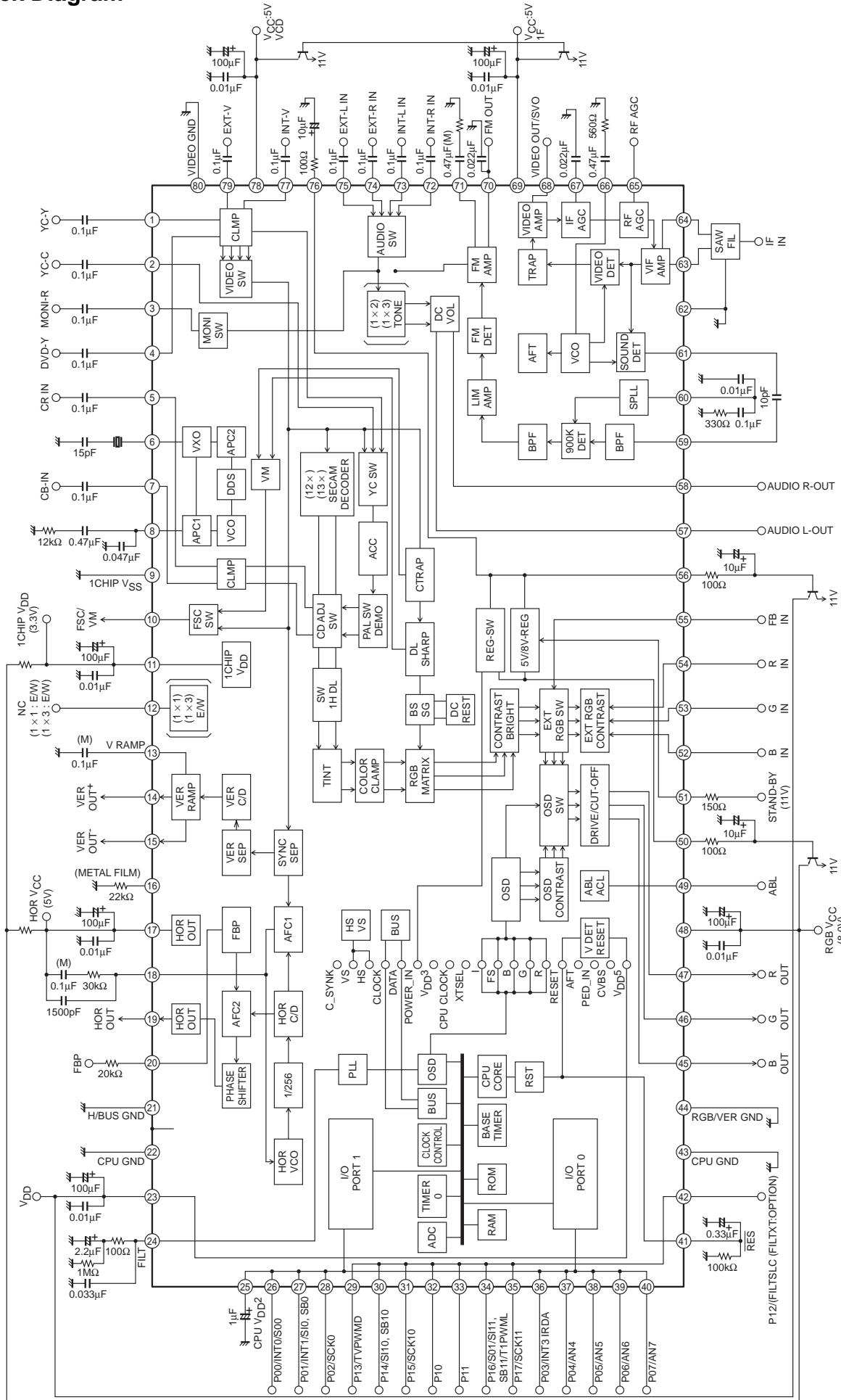
unit : mm (typ)

3174A



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Block Diagram



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