



**SANYO Semiconductors**

# DATA SHEET

## LV762XXX 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 LV762XXX 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<sup>2</sup>C bus control system with a built-in microcontroller
- 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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# LV762XXX Series

## Lineup

Type No.	SECAM	Tone/Surround	E/W	Teletext	ROM
LV762102F					Flash 64K(P:48K,GC:16K)
LV762102C					MASK 64K(P:48K,GC:16K)
LV762113F			○		Flash 128K(P:96K,GC:32K)
LV762113C			○		MASK 128K(P:96K,GC:32K)
LV762133F		○	○		Flash 128K(P:96K,GC:32K)
LV762133C		○	○		MASK 128K(P:96K,GC:32K)
LV762213F	○		○		Flash 128K(P:96K,GC:32K)
LV762213C	○		○		MASK 128K(P:96K,GC:32K)
LV762232F	○	○	○		Flash 64K(P:48K,GC:16K)
LV762232C	○	○	○		MASK 64K(P:48K,GC:16K)
LV762233F	○	○	○		Flash 128K(P:96K,GC:32K)
LV762233C	○	○	○		MASK 128K(P:96K,GC:32K)
LV76233N5F	○	○	○	○	Flash 192K(P:140K,GC:52K)

## Specifications

### Maximum Ratings (BIP Chip) at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{62}$ max		6.0	V
	$V_4$ max		6.0	V
Maximum supply current	$I_g$ max		15	mA
	$I_{20}$ max		20	mA
	$I_{49}$ max		26.5	mA
Allowable power dissipation	$P_d$ max	$T_a \leq 65^\circ\text{C} *$	1.3	W
Operating temperature	$T_{opr}$		-10 to +65	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

### Absolute Maximum Ratings (Micro-computer Chip) at $T_a = 25^\circ\text{C}$ , $V_{SS} = 0\text{V}$

Parameter	Symbol	Pins	Conditions	Ratings			Unit
				min	typ	max	
Maximum supply voltage	$V_{DD}$ max	Cpu $V_{DD}$		-0.3		+6.0	V
Input voltage	$V_I$	XT1, $\overline{\text{RES}}$		-0.3		$V_{DD}+0.3$	V
Output voltage	$V_O(1)$	XT2, FILT		-0.3		$V_{DD}+0.3$	V
	$V_O(2)$	Cpu $V_{DD}2$		-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	$\Sigma I_{OAH}$	Ports04 to 07, 1	The total of all pins.	-25		mA
Low level 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	$\Sigma I_{OAL}(1)$	P02, P03, P06, P07 Ports1	The total of all pins.		45	mA
$\Sigma I_{OAL}(2)$		P00, P01, P04, P05	The total of all pins.		16	mA	

## LV762XXX Series

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V <sub>62</sub>		5.0	V
	V <sub>4</sub>		5.0	V
Recommended supply current	I <sub>g</sub>		11	mA
	I <sub>20</sub>		13	mA
	I <sub>49</sub>		22	mA
Operating supply voltage range	V <sub>62</sub>		4.7 to 5.3	V
	V <sub>4</sub>		4.7 to 5.3	V
Operating supply current range	I <sub>g</sub>		9 to 13	mA
	I <sub>20</sub>		11 to 15	mA
	I <sub>49</sub>		20.5 to 26.5	mA

### Recommended Operating Range (Micro-computer Chip) at Ta = -10°C to +65°C, V<sub>SS</sub> = 0V

Parameter	Symbol	Pins	Conditions	V <sub>DD</sub> [V]	Ratings			Unit
					min	typ	max	
Operating supply voltage	V <sub>DD</sub>	CpuV <sub>DD</sub>	0.229μs ≤ t <sub>CYC</sub> ≤ 200μs		4.5		5.5	V
Hold voltage	V <sub>HD</sub>	CpuV <sub>DD</sub>	RAMs and the registers data are kept in HOLD mode.		2.0		5.5	V
High level input voltage	V <sub>IH</sub> (1)	Ports0, 1, P00 port input /interrupt		4.5 to 5.5	0.3V <sub>DD</sub> +0.7		V <sub>DD</sub>	V
	V <sub>IH</sub> (2)	Port00 Watch-dog timer		4.5 to 5.5	0.9V <sub>DD</sub>		V <sub>DD</sub>	V
	V <sub>IH</sub> (3)	RES		4.5 to 5.5	0.75V <sub>DD</sub>		V <sub>DD</sub>	V
Low level input voltage	V <sub>IL</sub> (1)	Ports0, 1, P00 port input /interrupt		4.5 to 5.5	V <sub>SS</sub>		0.1V <sub>DD</sub> +0.4	V
	V <sub>IL</sub> (2)	Port00 Watch-dog timer		4.5 to 5.5	V <sub>SS</sub>		0.15V <sub>DD</sub> +0.4	V
	V <sub>IL</sub> (3)	RES		4.5 to 5.5	V <sub>SS</sub>		0.25V <sub>DD</sub>	V
Operation cycle time (*1)	t <sub>CYC</sub> (1)		All functions operating	4.5 to 5.5		0.231		μs
	t <sub>CYC</sub> (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 See the figure 1	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<sub>DD</sub> = 4.5 to 5.5V)

(\*1) Relational expression between t<sub>CYC</sub> and oscillation frequency ;

1/1 frequency dividing : 3/FmVCO1, 1/2 frequency dividing : 6/FVCO1.

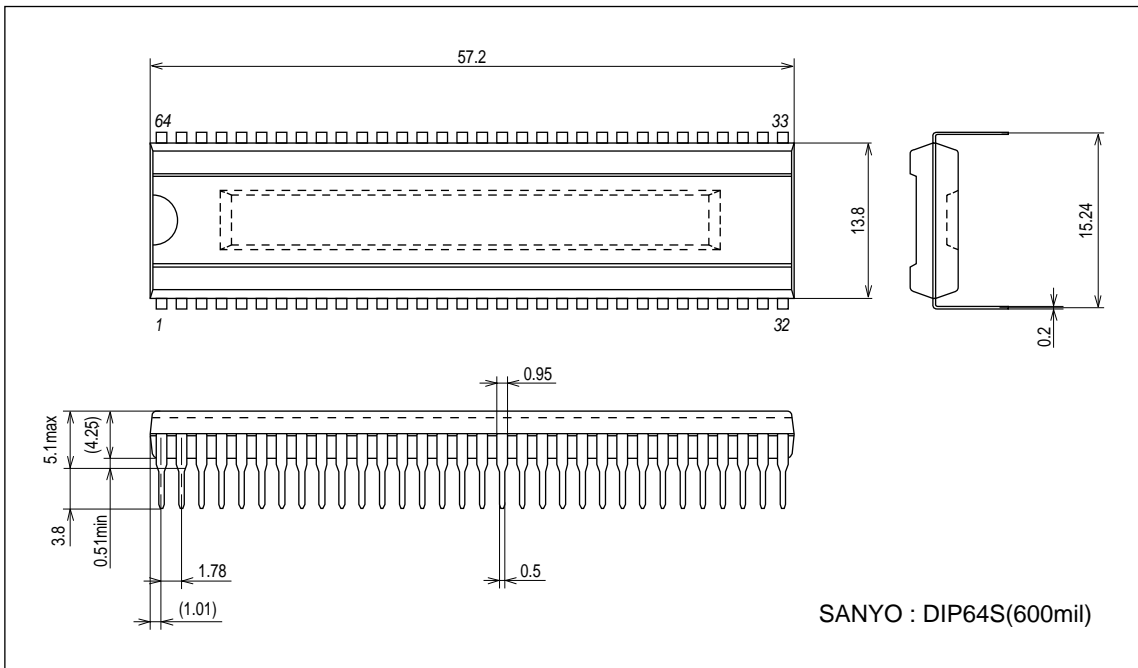
(\*2) OCKSEL is the selectable register for OSD clock frequency. (See the LC873200 users manual for details.)

# LV762XXX Series

## Package Dimensions

unit : mm (typ)

3300





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