Ordering number : ENN*8263

Preliminary

SANYO Semiconductors
DATA SHEET

Bi-CMOS LSI

LV1115/M — Surround Processor ICs for Electronic Volume Control

Overview

The LV1115/M are a sound processor ICs developed for use in TV sets.
They incorporate surround processing function (AViSS™) , pseudo stereo function, auto gain control, and the major functional blocks of an electronic volume control IC.

Functions

- Input gain control (-6dB, -4dB, 0dB, 4dB, 6dB: 5 positions)
- AViSS™ (ON/OFF/6-stage level control)
- Tone control (BASS: ±20dB, TREBLE: ±18dB [in 2dB steps])
- Master volume control (0dB to -14dB: 1dB steps/-14dB to -80dB: 2dB steps/-∞ = -82dB)
- Balance control
- THROUGH mode/MUTE mode
- Pseudo stereo function (ON/OFF/MONO control)
- Auto gain control function
- I^2C bus control

Specifications

Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		10.5	V
Allowable power dissipation 1 (DIP)	Pd max1	Ta ≤ 70°C*	700	mW
Allowable power dissipation 2 (MFP)	Pd max2	Ta ≤ 70°C*	450	mW
Operating temperature	Topr		-25 to +70	°C
Storage temperature	Tstg		-40 to +125	°C

* When mounted on a 76.1×114.3×1.6mm glass epoxy board

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Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		9.0	V
Operating supply voltage 1 (DIP)	V_{CC} opg1		8.0 to 10.0	V
Operating supply voltage 2 (MFP)	V_{CC} opg2		8.0 to 9.0	V
Control data				
"H" level voltage	V_{IH}		2.0 to 3.3	V
"L" level voltage	V_{IL}		0.0 to 1.0	V
Pulse width	tϕw		1.0	μs
Hold time	thold		1.0	μs
Operating frequency	fopg		500	kHz

Electrical Characteristics at Ta=25°C, V_{CC}=9.0V, fin=1kHz, VIN=300mVrms=0dB, RL=10kΩ

(Output=L/R-VROUT, VCA circuit though)

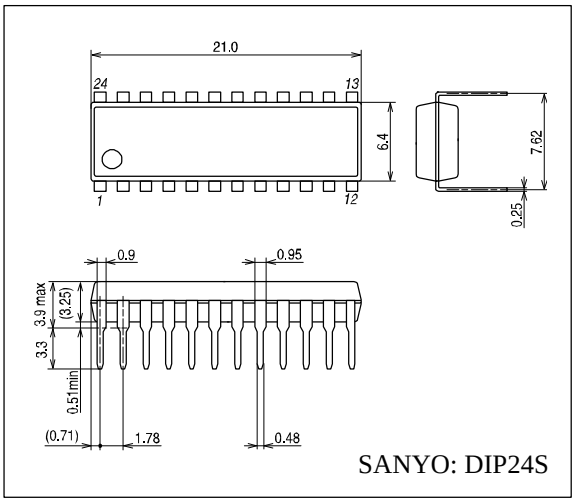
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	ICCO			50		mA
[Total through (Total through mode, Volume control : 0dB)]						
Voltage gain	VG_T		-1.5	-0.5	+0.5	dB
Maximum output voltage	VO_T	THD=1%	2.00	2.45		Vrms
Total harmonic distortion	THD_T	DIN AUDIO		0.01	0.1	%
Output noise voltage	VNO_T	DIN AUDIO		-94	-85	dBV
Cross talk	CT_T	DIN AUDIO	80	90		dB
[Matrix through (Matrix mode, Volume control: 0dB)]						
Voltage gain	VG_F		-1.6	-0.6	+0.6	dB
Maximum output voltage	VO_M	THD=1%	1.50	1.85		Vrms
Total harmonic distortion	THD_M	DIN AUDIO		0.05	0.1	%
Output noise voltage	VNO_M	DIN AUDIO		-92	-85	dBV
Cross talk	CT_M	DIN AUDIO	80	90		dB
[MONO mode (MONO mode, Volume control: 0dB)]						
Maximum output voltage	VO_S	THD=1%	1.50	1.85		Vrms
Total harmonic distortion	THD_S	DIN AUDIO		0.05	0.5	%
Output noise voltage	VNO_S	DIN AUDIO		-92	-85	dBV
[Surround (Surround mode-A, Volume control: 0dB)]						
Maximum output voltage	VO_S	THD=1%	1.50	1.85		Vrms
Total harmonic distortion	THD_S	DIN AUDIO		0.26	0.5	%
Output noise voltage	VNO_S	DIN AUDIO		-90	-80	dBV
[Pseudo stereo (Pseudo mode, Volume control: 0dB)]						
Maximum output voltage	VO_S	THD=1%	1.50	1.85		Vrms
Total harmonic distortion	THD_S	DIN AUDIO		0.06	0.5	%
Output noise voltage	VNO_S	DIN AUDIO		-92	-85	dBV
[Bass band EQR (Matrix through mode, Volume control: 0dB)]						
Control range	Geq_B	Max. Boost/Cut	±17	±20	±23	dB
Step resolution	$Estep_B$		1.0	2.0	3.0	dB
[Treble band EQR (Matrix through mode, Volume control: 0dB)]						
Control range	Geq_T	Max. Boost/Cut	±15	±18	±21	dB
Step resolution	$Estep_T$		1.0	2.0	3.0	dB

Package Dimensions

LV1115

Unit: mm

3067B

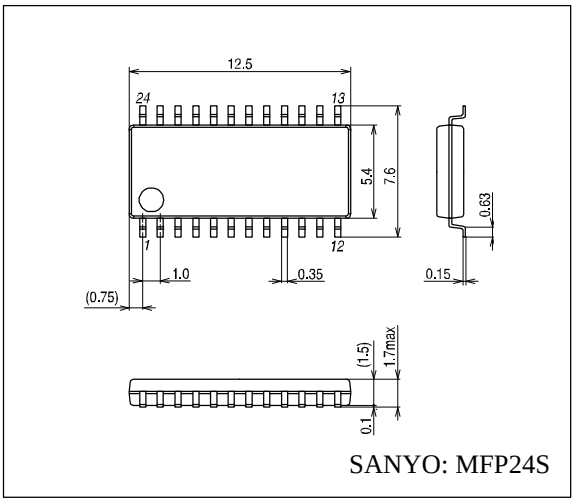


SANYO: DIP24S

LV1115M

Unit: mm

3112B



SANYO: MFP24S