



SANYO Semiconductors DATA SHEET

LV1115/M — Bi-CMOS LSI 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
- I²C 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	t _{pw}		1.0	μs
Hold time	t _{hold}		1.0	μs
Operating frequency	f _{opg}		500	kHz

Electrical Characteristics at Ta=25°C, V_{CC}=9.0V, f_{in}=1kHz, V_{IN}=300mV_{rms}=0dB, R_L=10kΩ
 (Output=L/R-VROUT, VCA circuit though)

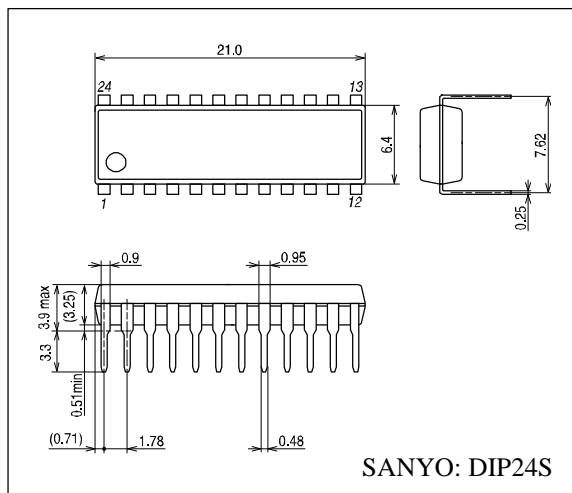
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	ICCO			50		mA
[Total through (Total through mode, Volume control : 0dB)]						
Voltage gain	VG _T		-1.5	-0.5	+0.5	dB
Maximum output voltage	VO _T	THD=1%	2.00	2.45		V _{rms}
Total harmonic distortion	THD _T	DIN AUDIO		0.01	0.1	%
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		V _{rms}
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		V _{rms}
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		V _{rms}
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		V _{rms}
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

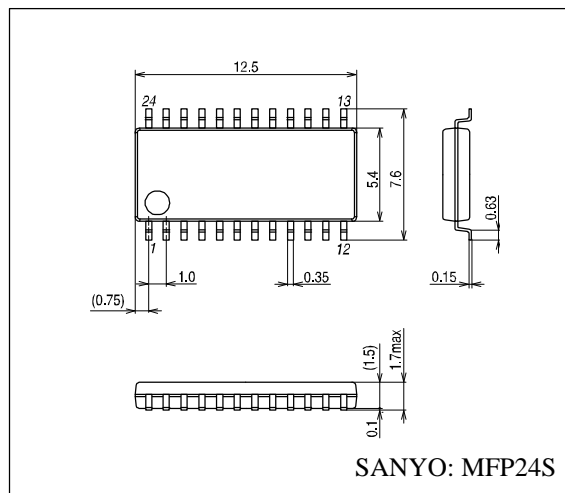
3067B



LV1115M

Unit: mm

3112B



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