



SANYO Semiconductors

DATA SHEET

LA2110M — Monolithic Linear IC FM Noise Canceller

Overview

The LA2110M has the capability to effectively remove external noise (pulse noise) caused by engine, etc. and is used in conjunction with a PLL FM multiplex stereo demodulator (such as LA3375) with pilot signal canceller.

Functions

- FM Noise Canceller.

Features

- Pilot signal compensation function.
- By using in conjunction with PLL FM multiplex stereo demodulator with pilot signal canceller, adverse effect caused by pilot signal can be compensated.
- Low distortion factor : THD = 0.02%, 300mV.
- Good space factor due to single end package.
- Variable input type noise AGC system. This system widens the noise detector's dynamic range, so that pulse noise can be satisfactorily detected even in a weak electric field, and pulse noise is removed without adversely affecting distortion factor.

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply rating	V _{CC} max		15	V
Allowable power dissipation	Pd max (1)		420	mW
	Pd max (2)	Ta ≤ 75°C	210	
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-40 to +125	°C

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92706 / 71505 MS OT No.2730-1/5

LA2110M

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V _{CC}		10	V
Supply voltage range	V _{CC op}		8 to 12	V

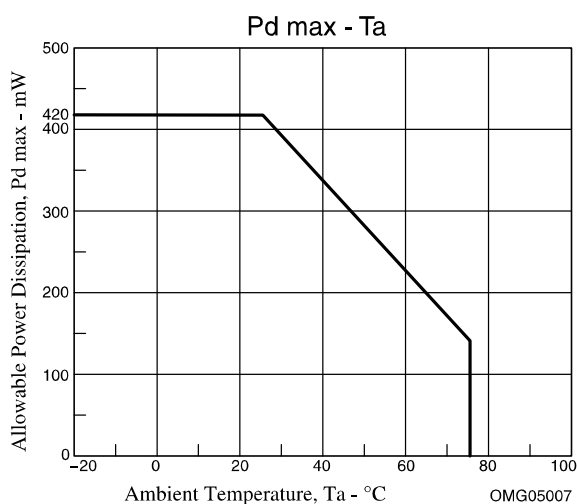
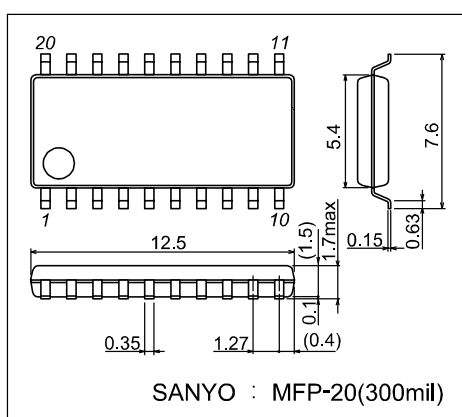
Electrical Characteristics at Ta = 25°C, V_{CC} = 10.0V, Reference value with the specified circuit Screening is made only for DC. Values in parentheses are for reference.

Parameter	Symbol	Input pin	Output pin	Ratings			Unit
				min	typ	max	
Quiescent current	I _{CCO}				16	25	mA
Voltage gain	V _G	V8 = 300mV, f = 1kHz	OUTPUT	(-0.2)	0.8	(1.8)	dB
Input signal dynamic range	V _D	V8, f = 1kHz	OUTPUT, THD = 1%	(1.3)	2.0		V
Input impedance	Z _{in}	V8 = 300mV, f = 1kHz		(36k)	51 k	(67k)	Ω
Total harmonic distortion	THD	V8 = 300mV, f = 1kHz	OUTPUT		0.01	(0.03)	%
Low-pass amp gain	V _{GL}	V8 = 300mV, f = 1kHz	V5	(1.0)	1.1	(1.2)	times
High-pass amp gain	V _{GH}	V11 = 100mV, f = 200kHz	V13	(1.2)	1.4	(1.65)	times
Inverting amp distortion gain	THD1	V18 = 100mV, f = 19kHz	OUTPUT		0.03	(0.1)	%
Inverting amp dynamic range	V _{D1}	V18, f = 19kHz	OUTPUT, THD = 1%	(300)	650		mV
Inverting amp gain	V _{G1}	V18 = 100mV, f = 19kHz	OUTPUT,	(1.0)	1.3	(1.6)	times
Output noise voltage	V _{NO}	V8, V18 shorted to GND	OUTPUT, 100kHz, Low-pass filter		30	(60)	μV
Gate time	t _{gate}	V8 = 100 mVpp, 1μs	OUTPUT	(13)	21	(30)	μs
Noise sensitivity	SN	V8, 1μs, f = 1kHz	OUTPUT		18	(30)	mVp-o

Package Dimensions

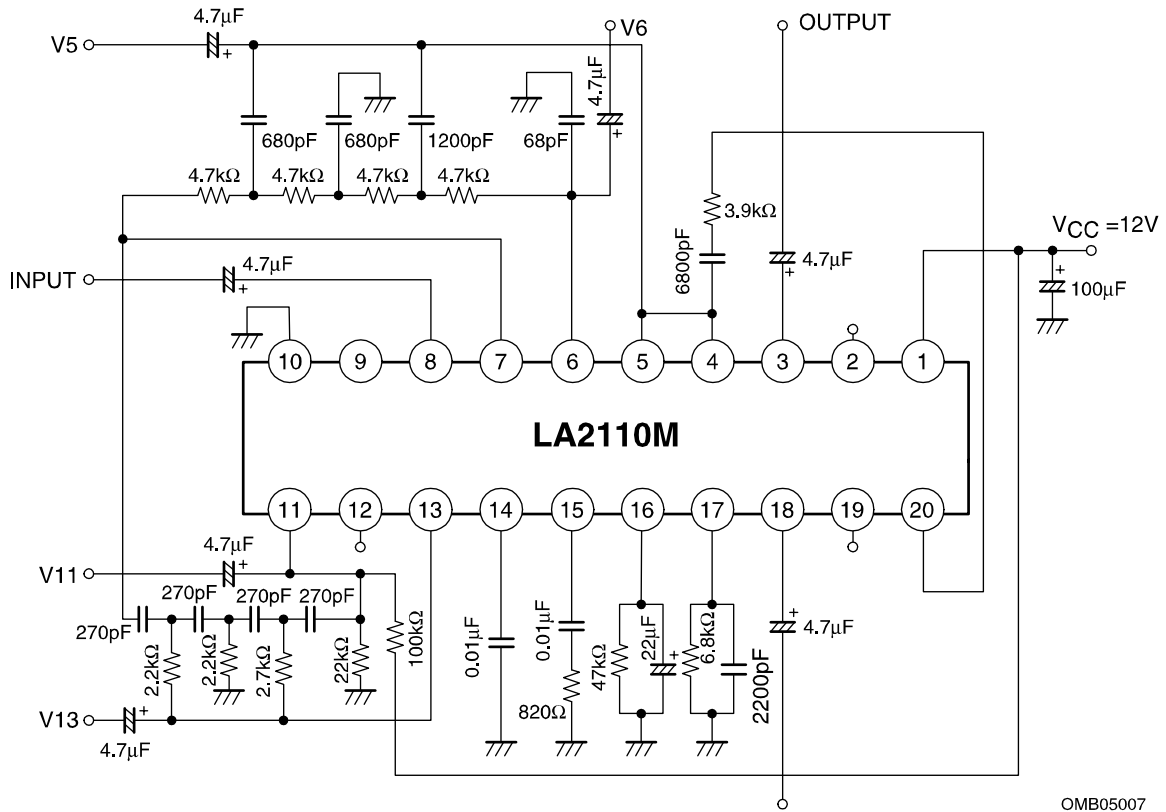
unit: mm

3036C



LA2110M

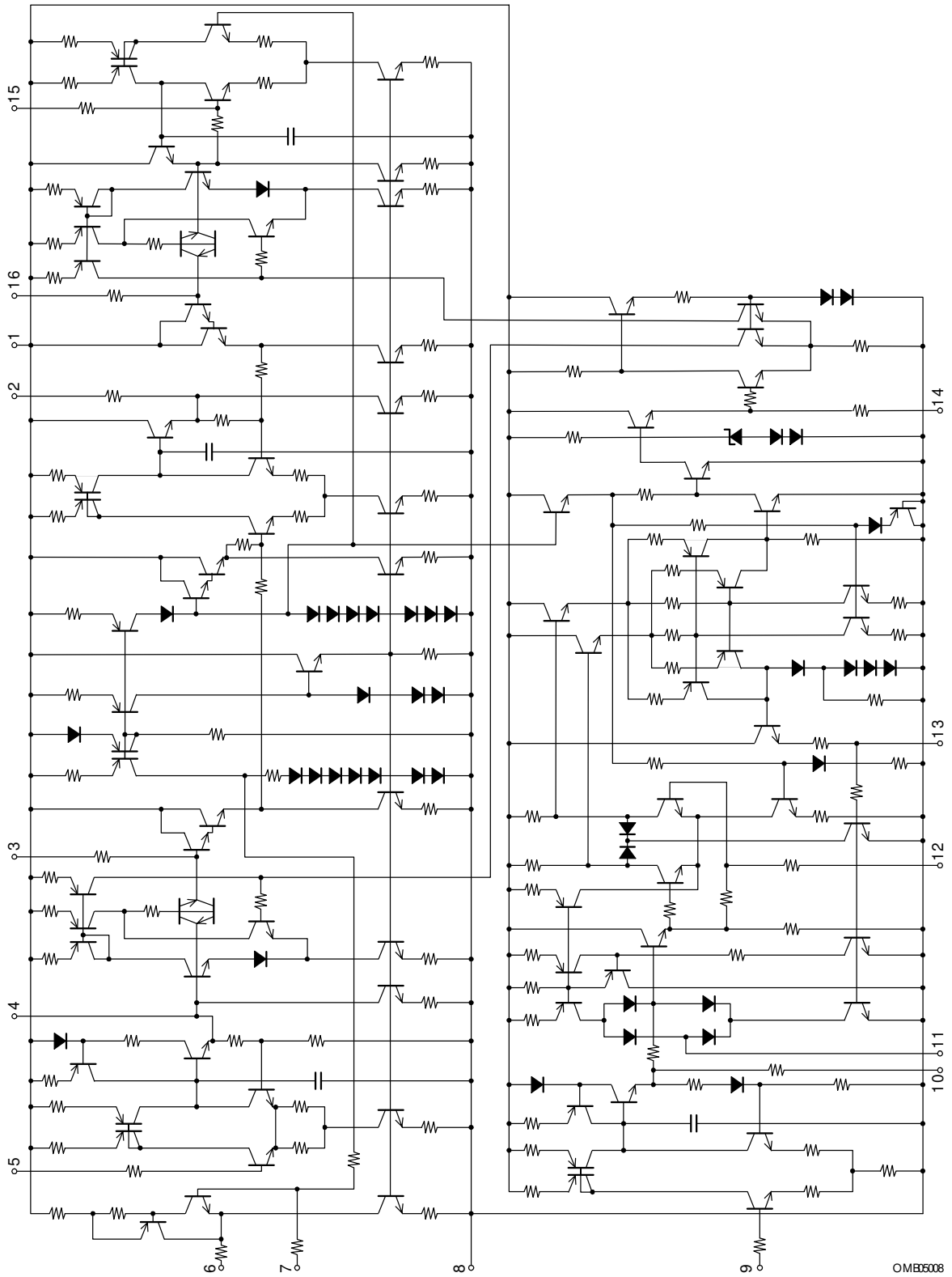
Test Circuit



OMB05007

LA2110M

Equivalent Circuit Block Diagram



OMB5008

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