Ordering number : ENN2730

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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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

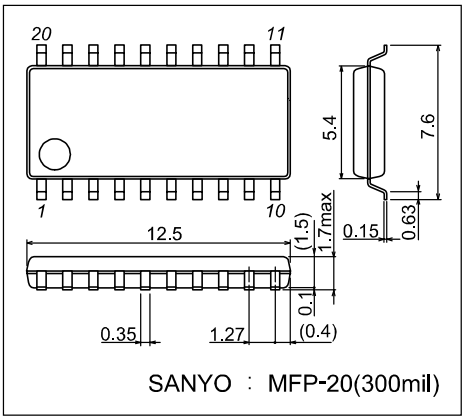
at Ta = 25°C, V_{CC} = 10.0V, Reference value with the specified circuit
Screening is made only for DC. Values in parentheses are for reference.

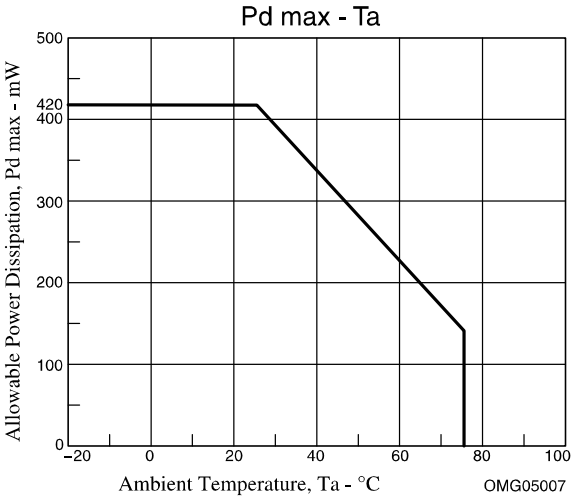
Parameter	Symbol	Input pin	Output pin	Ratings			Unit
				min	typ	max	
Quiescent current	I_{CCO}				16	25	mA
Voltage gain	V_G	V8 = 300mV, f = 1kHz	OUTPUT	(-0.2)	0.8	(1.8)	dB
Input signal dynamic range	V_D	V8, f = 1kHz	OUTPUT, THD = 1%	(1.3)	2.0		V
Input impedance	Z_{in}	V8 = 300mV, f = 1kHz		(36k)	51 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	tgate	V8 = 100 mVpp, 1μs	OUTPUT	(13)	21	(30)	μs
Noise sensitivity	SN	V8, 1μs, f = 1kHz	OUTPUT		18	(30)	mVp-o

Package Dimensions

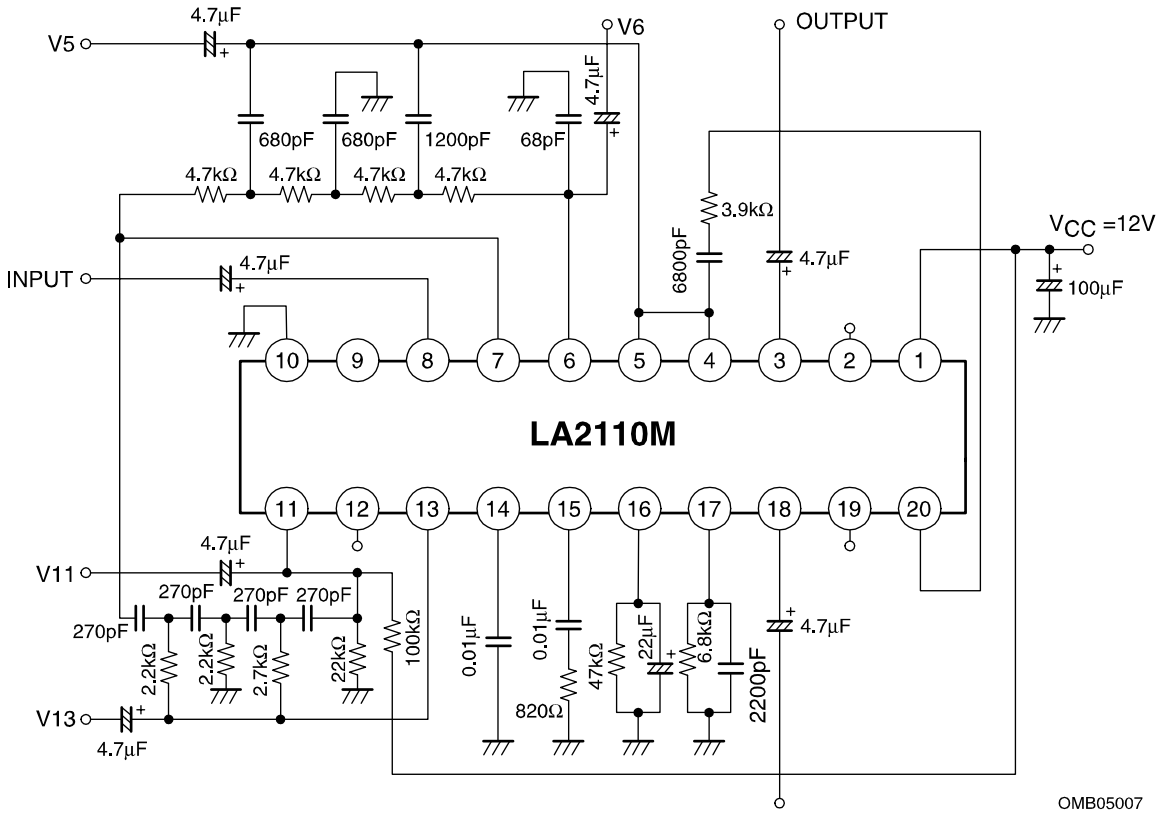
unit: mm

3036C





Test Circuit



Equivalent Circuit Block Diagram