Ordering number : ENA2032

SANYO Semiconductors
DATA SHEET

An ON Semiconductor Company

Monolithic Linear IC

LA4535MC — For 1.5V Headphone Stereo Power Amplifier

Features

- Low current drain.
- 16Ω load drive capability.
- Excellent reduced voltage characteristics.
- Excellent power supply ripple rejection.
- Minimum number of external parts required (no input capacitor, feedback capacitor required).
- Less harmonic interference in radio band.
- On-chip power switch function, muting function.

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max	Quiescent	4.5	V
Allowable power dissipation	Pd max		290	mW
Operating temperature	Topr		–20 to +75	°C
Storage temperature	Tstg		–40 to +125	°C

Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		1.5	V
Operating voltage range	V_{CC} op		0.9 to 4.0	V
Recommended load resistance	R_L		16 to 32	Ω

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Electrical Characteristics at Ta = 25°C, R_L = 16Ω, Rg = 600Ω, See specified Test Circuit.

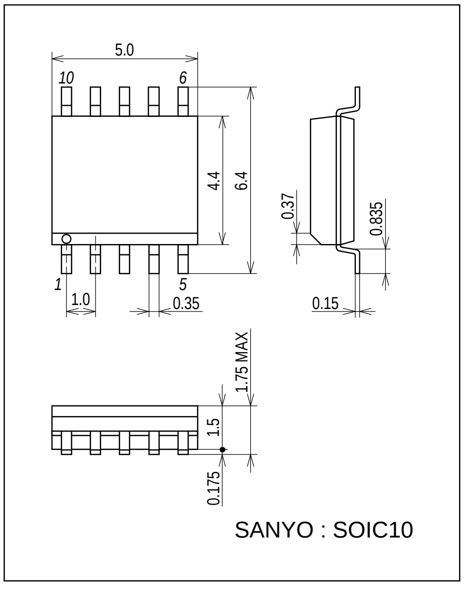
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current *1	$I_{CCO}1$	V_{CC} = 1.2V, quiescent		3.5	6.0	mA
	$I_{CCO}2$	V_{CC} = 2.5V, pin 10 →GND		1.5	2.5	mA
	$I_{CCO}3$	V_{CC} = 2.5V, pin 1 →GND			1.0	μA
Voltage gain	VG1	V_{CC} = 1.2V, f = 1kHz, V_O = –20dBm	20.5	22	23	dB
	VG2	V_{CC} = 0.9V, f = 1kHz, V_O = –20dBm	19.5	22	23	dB
Voltage gain difference	ΔVG1	V_{CC} = 1.2V, f = 1kHz, V_O = –20dBm			1.0	dB
	ΔVG2	V_{CC} = 0.9V, f = 1kHz, V_O = –20dBm			1.0	dB
Total harmonic distortion	THD	V_{CC} = 1.2V, f = 1kHz, P_O = 0.5mW		0.8	1.5	%
Output power	P_O	V_{CC} = 1.5V, f = 1kHz, THD = 10%	5	8		mW
Crosstalk	CT	V_{CC} = 1.2V, f = 100Hz, Rg = 1kΩ, V_O = –20dB	40	45		dB
Ripple rejection	SVRR	V_{CC} = 1.0V, f = 100Hz, Rg = 1kΩ, V_R = –30dBm, BPF = 100Hz	45	50		dB
Output noise voltage	V_{NO}	V_{CC} = 2.5V, Rg = 1kΩ, BPF= 20Hz to 20kHz		30	44	μV
Power off effect	V_O(off)	V_{CC} = 0.9V, f = 100Hz, pin 1 →GND, V_{IN} = –10dB			-80	dBm
Muting effect	V_O(MT)	V_{CC} = 0.9V, f = 100Hz, pin 10 → GND, V_{IN} = –10dB			-80	dBm
Power on current sensitivity	I_1(on)	V_{CC} = 0.85V, V5 ≥ 0.5V		0.1	1.0	μA
Power off voltage sensitivity	V_1(off)	V_{CC} = 0.85V, V5 ≤ 0.1V	0.5	0.65		V
Muting off current sensitivity	I_{10}(off)	V_{CC} = 0.85V, V5 ≥ 0.5V		0.3	1.0	μA
Muting on voltage sensitivity	V_{10}(on)	V_{CC} = 0.85V, V5 ≤ 0.1V	0.5	0.65		V

Note) The quiescent current is represented by the current flowing into pin 6. The respective maximum currents flowing into pin 1 and pin 10 are calculated by (V pin –0.5) / 16 [V/ kΩ] and the total current increases by these current values.

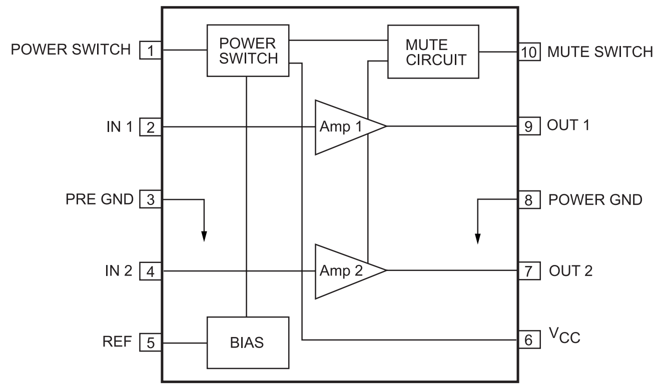
Package Dimensions

unit : mm (typ)

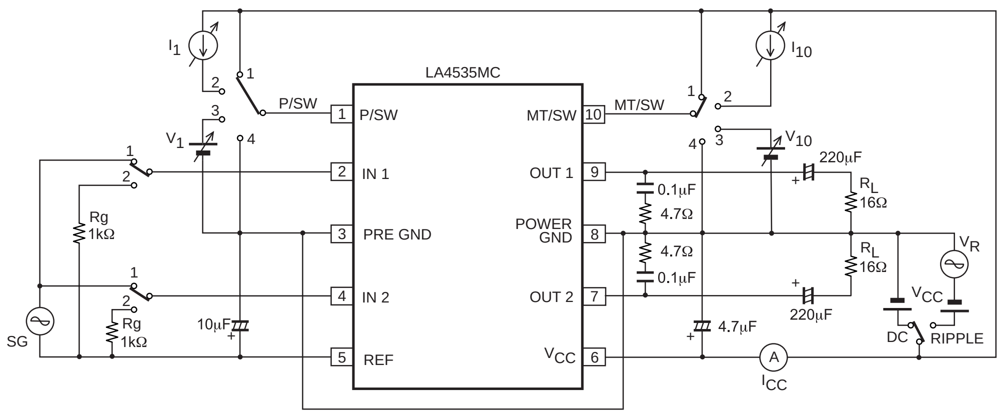
3426



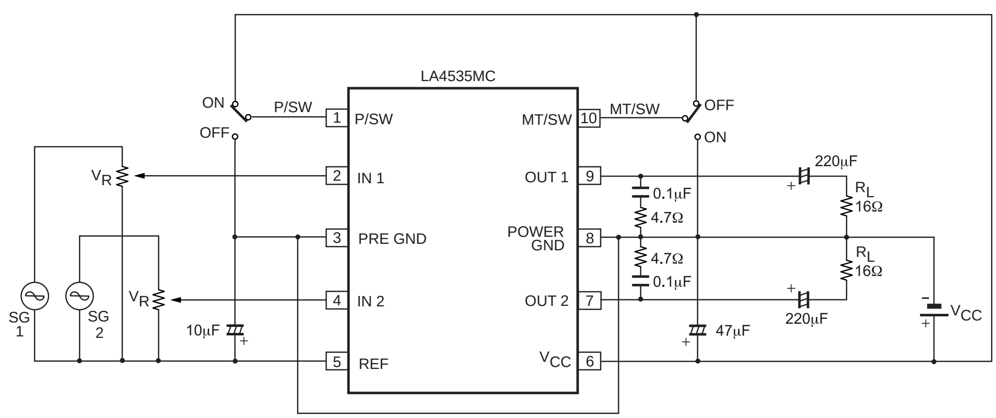
Block Diagram



Test Circuit



Sample Application Circuit



This catalog provides information as of March, 2012.Specifications and information herein are subject to change without notice.