

SANYO	No.2667A	LA4538M
	Ripple Filter-Provided Stereo Power Amp for 1.5V Headphone Stereos	

Features

- Low current dissipation
- Excellent reduced voltage characteristics
- Minimum number of external parts required
- On-chip power switch function
- Power amp section
 - Output power 8mW typ ($V_{CC}=1.5V, R_L=16\Omega, f=1kHz, THD=10\%$)
 - Ripple rejection 46dB typ ($V_{CC}=1.0V, V_R=-30dBm, f_R=100Hz$)
 - On-chip muting function
- Ripple filter section
 - Ripple rejection 39dB typ ($V_{CC}=1.0V, V_R=-35dBm, f_R=100Hz$)
 - Less output voltage loss
 - Pin 8 can be used to perform the muting function.

Maximum Ratings at $T_a=25^\circ C$

Maximum Supply Voltage	V _{CC} max	Quiescent	4.5	unit	V
Maximum Output Current	I _{o7}	Pin 7 flow-out current	5.0		mA
Allowable Power Dissipation	P _d max		300		mW
Operating Temperature	T _{opr}		-20 to +75		°C
Storage Temperature	T _{stg}		-40 to +125		°C

Operating Conditions at $T_a=25^\circ C$

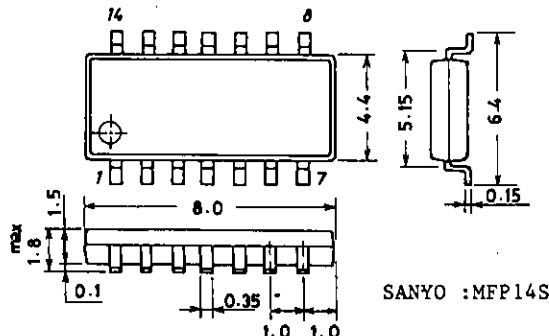
Recommended Operating Voltage	V _{CC}		1.5	unit	V
Operating Voltage Range	V _{CC op}		0.9 to 4.0		V
Recommended Load Resistance	R _L		16 to 32		Ω

Operating Characteristics at $T_a=25^\circ C, R_L=16\Omega, R_g=600\Omega$, See specified Test Circuit.

			min	typ	max	unit
Quiescent Current	I _{CCO(1)}	V _{CC} =1.20V, quiescent, R _{L3} →OFF		4.5	7.0	mA
	I _{CCO(2)}	V _{CC} =2.50V, pin 14→GND, R _{L3} →OFF		1.5	2.5	mA
	I _{CCO(3)}	V _{CC} =2.50V, pin 1→GND, R _{L3} →OFF			1.0	μA
Voltage Gain	VG	V _{CC} =0.90V, f=1kHz, V _o =-20dBm	27.5	29	31.5	dB
Voltage Gain Difference	ΔVG	V _{CC} =0.90V, f=1kHz, V _o =-20dBm			1.0	dB
Total Harmonic Distortion	THD	V _{CC} =1.20V, f=1kHz, P _o =0.5mW		0.9	1.5	%
Output Power	P _o	V _{CC} =1.50V, f=1kHz, THD=10%	5	8		mW

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Package Dimensions 3111-M14SIC
(unit: mm)

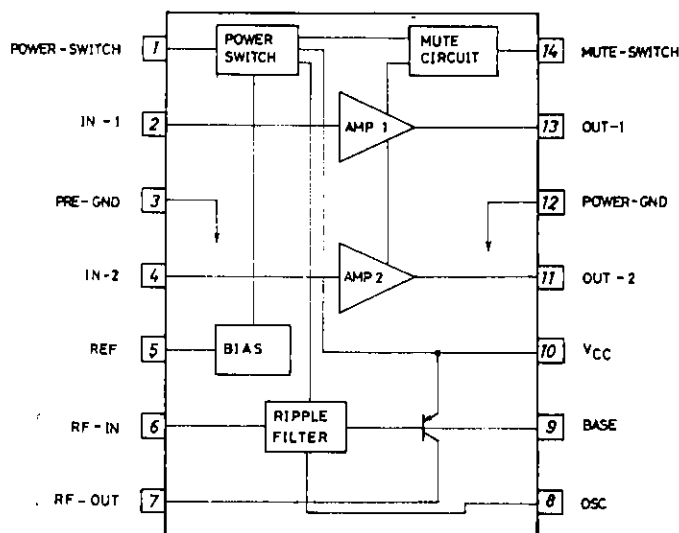


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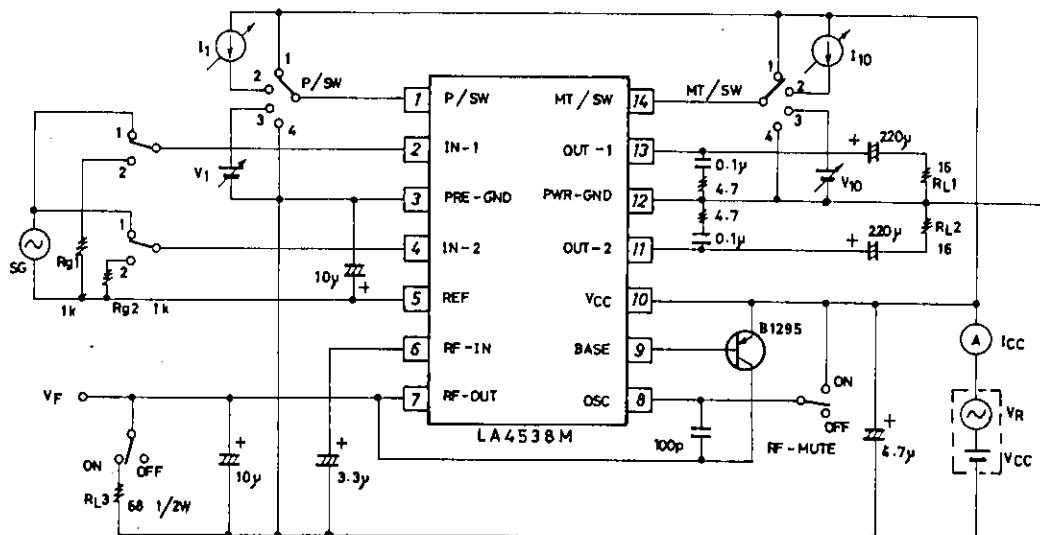
			min	typ	max	unit
Crosstalk	CT	$V_{CC}=1.20V, f=100Hz, R_g=1k\Omega, V_o=-20dBm$	40	45		dB
Ripple Rejection (Amp Section)	SVRR(1)	$V_{CC}=1.00V, f=100Hz, R_g=1k\Omega, V_R=-30dBm, BPF=100Hz$	40	46		dB
Ripple Rejection (Filter Section)	SVRR(2)	$V_{CC}=1.00V, f=100Hz, V_R=-35dBm$	34	39		dB
Output Noise Voltage	V_{NO}	$V_{CC}=2.50V, R_g=1k\Omega, BPF=20Hz$ to 20kHz		55	80	μV
Power ON-State Current Sensitivity	$I_{1(ON)}$	$V_{CC}=0.85V, V_{pin5} \cong 0.5V$		0.1	1.0	μA
Power OFF-State Voltage Sensitivity	$V_{1(OFF)}$	$V_{CC}=0.85V, V_{pin5} \leq 0.1V$	0.5	0.6		V
Muting ON-State Current Sensitivity	$I_{14(ON)}$	$V_{CC}=0.85V, V_{pin5} \cong 0.5V$		0.1	1.0	μA
Muting OFF-State Voltage Sensitivity	$V_{14(OFF)}$	$V_{CC}=0.85V, V_{pin5} \leq 0.1V$	0.5	0.6		V
Ripple Filter Output Voltage	V_F	$V_{CC}=1.00V, R_L=68\Omega$	0.90	0.94		V

Equivalent Circuit Block Diagram



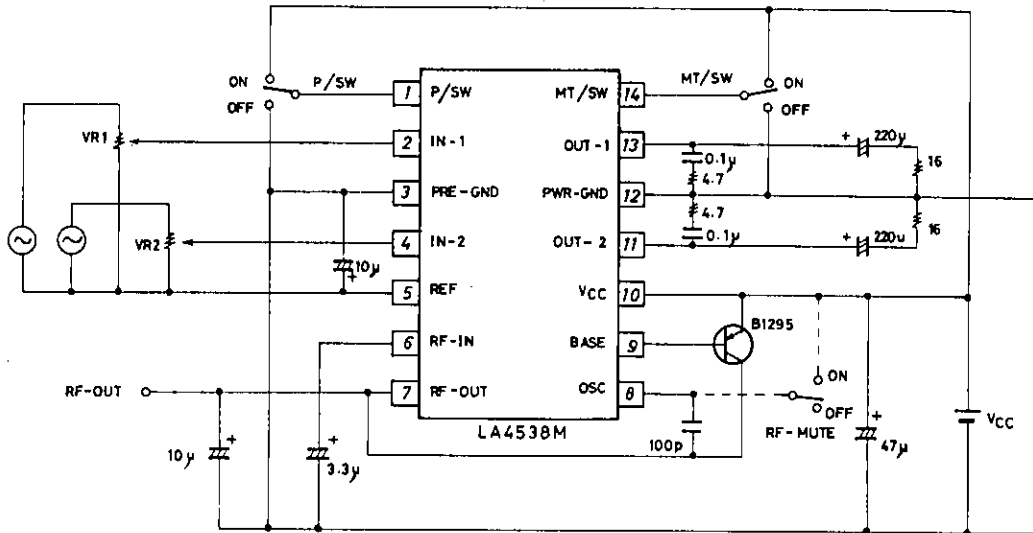
Test Circuit

Unit (resistance: Ω , capacitance: F)



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Sample Application Circuit



Unit (resistance: Ω , capacitance: F)

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