

■ Description

■ Features

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- Unit : mm
- Technical drawing of a 23-Lead ZSIL Plastic Package with Fin (23-ZSIP-FP). The drawing includes three views: a top view, a side view, and a cross-sectional view.
- Top View Dimensions:**
- Overall width: 29.96
 - Distance from left edge to center of first lead: 28.0
 - Distance from left edge to center of last lead: 20.0
 - Lead pitch: 0.6
 - Radius of lead curve: R1.8
 - Distance from center of last lead to right edge: 21.9
 - Distance from center of last lead to center of fin: 8.2
 - Fin width: 2.3
 - Lead width: 0.3
 - Lead spacing: 0.6
- Side View Dimensions:**
- Overall height: 29.6
 - Lead height: 1.27
- Cross-sectional View Dimensions:**
- Lead height: 1.2
 - Lead width: 1.45
 - Lead spacing: 1.9
 - Lead pitch: 3.5
 - Fin width: 2.54
 - Distance from lead center to fin center: 12.33
 - Distance from lead center to fin center: 13.96
 - Distance from lead center to fin center: 17.42
 - Distance from lead center to fin center: 19.1

■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	24	V
Supply Current	I _{CC}	6	A
Power Dissipation	P _D	62.5	W
Operating Ambient Temperature	T _{opr}	-25 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

Operating Supply Voltage Range: V_{CC} = 6.0V ~ 18.0V

■ Electrical Characteristics (V_{CC}=15V, R_L=3Ω, f=1kHz, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	I _{CQ}	V _{in} = 0mV, V _{STB} = 0Ω		20	35	mA
Standby Current	I _{STB}	STB-Off			100	μA

Power Amp. Section

Output Noise Voltage	V _{no}	V _{in} = 0mV, R _g = 10kΩ, DIN/AUDIO		0.29	0.75	mV
Voltage Gain	G _V	V _{in} = 10mV	43	45	47	dB
Total Harmonic Distortion	THD	V _{in} = 10mV		0.2	0.6	%
Maximum Output	P _O	THD = 10%	7	7.5		W
Ripple Rejection	RR	V _{in} = 0mV, R _g = 0Ω, V _r = 300mV, f _r = 120Hz	45	54		dB
Channel Balance	CB	V _{in} = 10mV	-1	0	+1	dB
Muting Effect	MUT	I _{mute} = 2mA, Source Impedance = 5kΩ	42	47		dB

9V Power Supply Section

Output Voltage	V _{out 1}	I _{out} = 300mA	8.5	9	9.5	V
Load Stability	REG _{L1}	I _{out} = 0mA/300mA			5	%
Ripple Rejection	RR ₁	I _{out} = 300mA, V _r = 300mV, f _r = 120Hz	40	45		dB

5V Power Supply Section

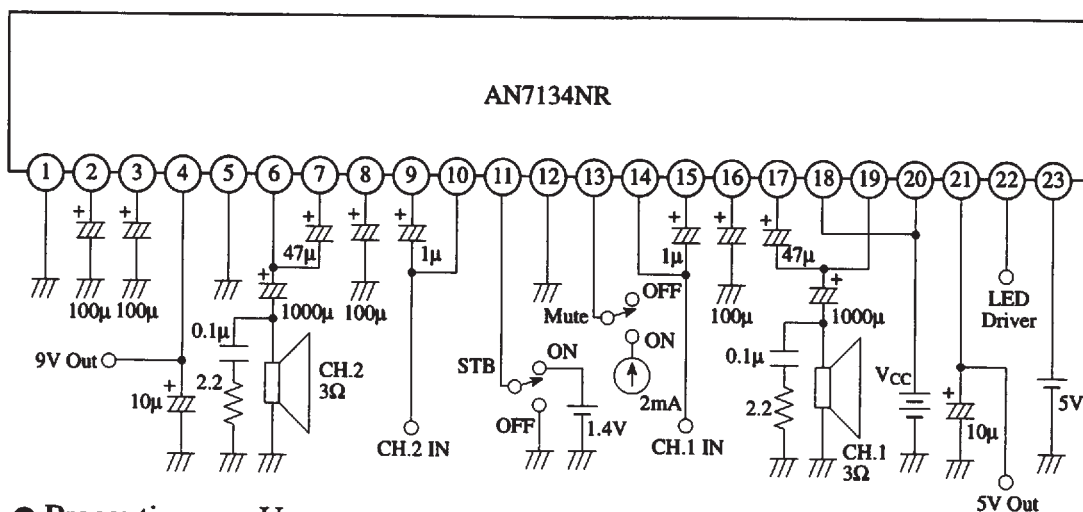
Output Voltage	V _{out 2}	I _{out} = 300mA	4.75	5	5.25	V
Load Stability	REG _{L2}	I _{out} = 0mA/300mA			5	%
Ripple Rejection	RR ₂	I _{out} = 300mA, V _r = 300mV, f _r = 120Hz	50	58		dB

LED Driver Section

Maximum Output	I _{out 3}	R _L = 300Ω	30			mA
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■ Application Circuit



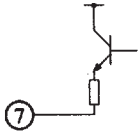
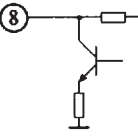
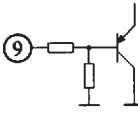
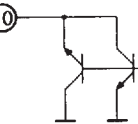
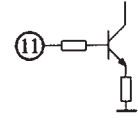
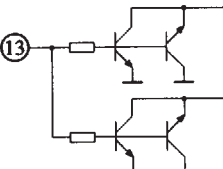
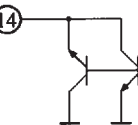
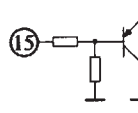
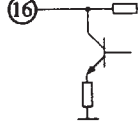
● Precautions on Use

- 1) Don't short output pin to power supply and GND at $V_{CC} \geq 18V$
- 2) Don't short inter-pin

■ Pin Descriptions

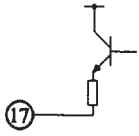
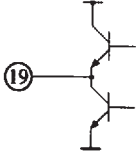
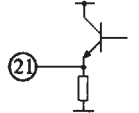
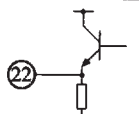
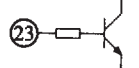
Pin No.	Pin Name	Equivalent Circuit	Description
1	GND (regulator side)		GND pin for regulator.
2	Ripple Filter (audio side)		Connect capacitor to raise audio output circuit ripple rejection ratio.
3	Ripple filter (9V regulator side)		Connect capacitor to raise 9V regulator ripple rejection ratio.
4	9V Regulator Output		9V constant voltage output pin (Output current more than 300mA).
5	GND (audio output side)		GND pin for audio output circuit.
6	Ch. 2 Audio Output		Ch. 2 audio output pin.

Pin Descriptions (Continue)

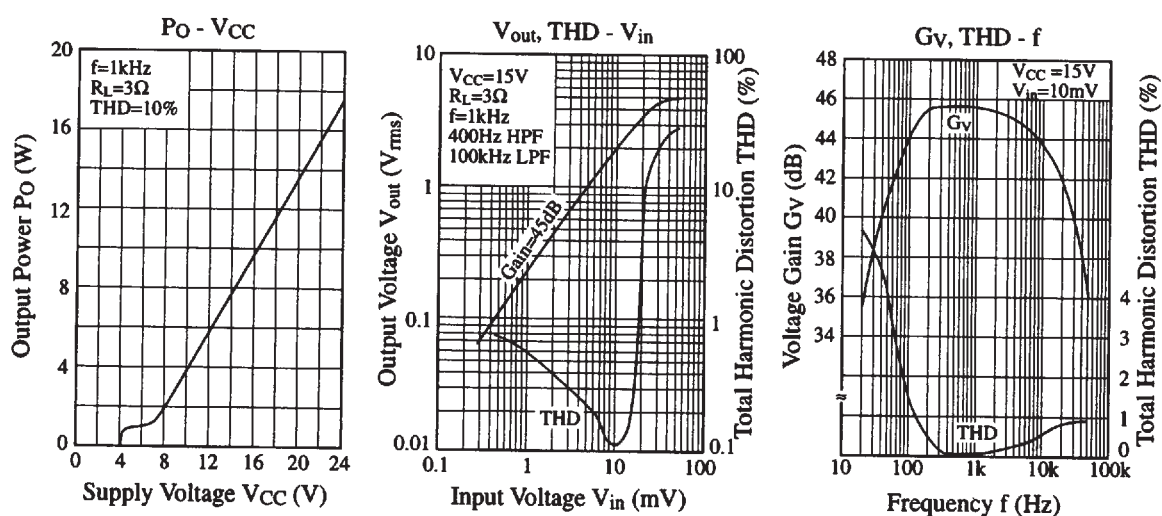
Pin No.	Pin Name	Equivalent Circuit	Description
7	Ch. 2 Bootstrap		Ch. 2 bootstrap pin.
8	Ch. 2 Negative Feedback		Ch. 2 negative feedback pin.
9	Ch. 2 Input		Ch. 2 input signal applied pin.
10	Ch. 2 Muting		Ch. 2 input signal muting pin.
11	Stand-by		Circuit mode (stand-by ↔ Operation) switching pin.
12	GND (audio input side)		GND pin for input signal source.
13	Muting Control		Muting ON ↔ OFF switching pin.
14	Ch. 1 Muting		Ch. 1 input signal muting pin.
15	Ch. 1 Input		Ch. 1 input signal applied pin.
16	Ch. 1 Negative Feedback		Ch. 1 negative feedback pin.

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■ Pin Descriptions (Continue)

Pin No.	Pin Name	Equivalent Circuit	Description
17	Ch.1 Bootstrap		Ch. 1 bootstrap pin
18	Supply Pin (audio output side)		Supply pin for audio output circuit
19	Ch. 1 Audio Output		Ch. 1 Audio Signal Output Pin (Gv = 45dB)
20	Supply Pin (regulator side)		Supply pin for regulator
21	5V Regulator Output		5V constant voltage output pin (Output current more than 300mA)
22	LED Driver		LED driver pin (Output current more than 300mA)
23	5V Input		5V voltage input pin

■ Characteristics Curve



P_D vs T_a , please refer to AN7177.