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**EXTERNAL ISSUE**

Prepared	<i>Chang</i>	<b>Product Specifications</b> <b>AN7161N</b>	Ref No.	A 1
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Structure	Silicon Monolithic Bipolar IC
Appearance	SIL-12 Pin Plastic Package (Power Type with Fin attached)
Application	Hi-Fi and Car Stereo
Function	BTL 23W Audio Power Amplifier

A Absolute Maximum Ratings					
No.	Item	Symbol	Ratings	Unit	Note
1	Storage Temperature	Tstg	-55 ~ +150	° C	1
2	Operating Ambient Temperature	Topr	-30 ~ +75	° C	1
3	Supply Voltage	Vcc	26	V	
4	Supply Current	Icc	4.0	A	
5	Power Dissipation	P <sub>D</sub>	62.5	W	
6	Surge Voltage	V <sub>surge</sub>	50	V	

Note: 1) The temperature of all items shall be Ta=25°C except storage temperature and operating ambient temperature.



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B Electrical Characteristics (Unless otherwise specified, the ambient temperature is 25°C ± 2°C)									
No	Item	Symbol	Test Circuit	Conditions	Limits			Unit	Note
					min	typ	max		
1	Quiescent Circuit Current	I <sub>CQ</sub>	1	V <sub>CC</sub> =15V, V <sub>in</sub> =0V	-	45	75	mA	
Power Amplifier (V <sub>CC</sub> =15V, R <sub>L</sub> =4Ω, freq.=1kHz)									
2	Output Noise Voltage	V <sub>N</sub>	1	f=15Hz ~ 30kHz, 12dB/oct, R <sub>g</sub> =10kΩ	-	0.6	1.0	mV	
3	Voltage Gain	G <sub>V</sub>	1	V <sub>in</sub> =5mV	48.5	50.5	52.5	dB	
4	Total Harmonic Distortion	THD	1	V <sub>in</sub> =5mV	-	0.15	0.5	%	
5	Maximum Power Output	P <sub>O</sub>	1	THD=10%	20	23	-	W	
6	Output Offset Voltage	V <sub>OS</sub>	1	R <sub>g</sub> =0Ω	-	-	150	mV	
Headphone Amplifier (V <sub>CC</sub> =15V, R <sub>L</sub> =33Ω, freq.=1kHz)									
7	Output Noise Voltage	V <sub>N-H</sub>	1	f=15Hz ~ 30kHz, 12dB/oct, R <sub>g</sub> =10kΩ	-	0.1	0.7	mV	
8	Voltage Gain	G <sub>V-H</sub>	1	V <sub>in</sub> =10mV Power Amplifier mute	17.5	19.5	21.5	dB	
9	Maximum Output Power	P <sub>O-H</sub>	1	THD=1% Power Amplifier mute	10	-	-	mW	

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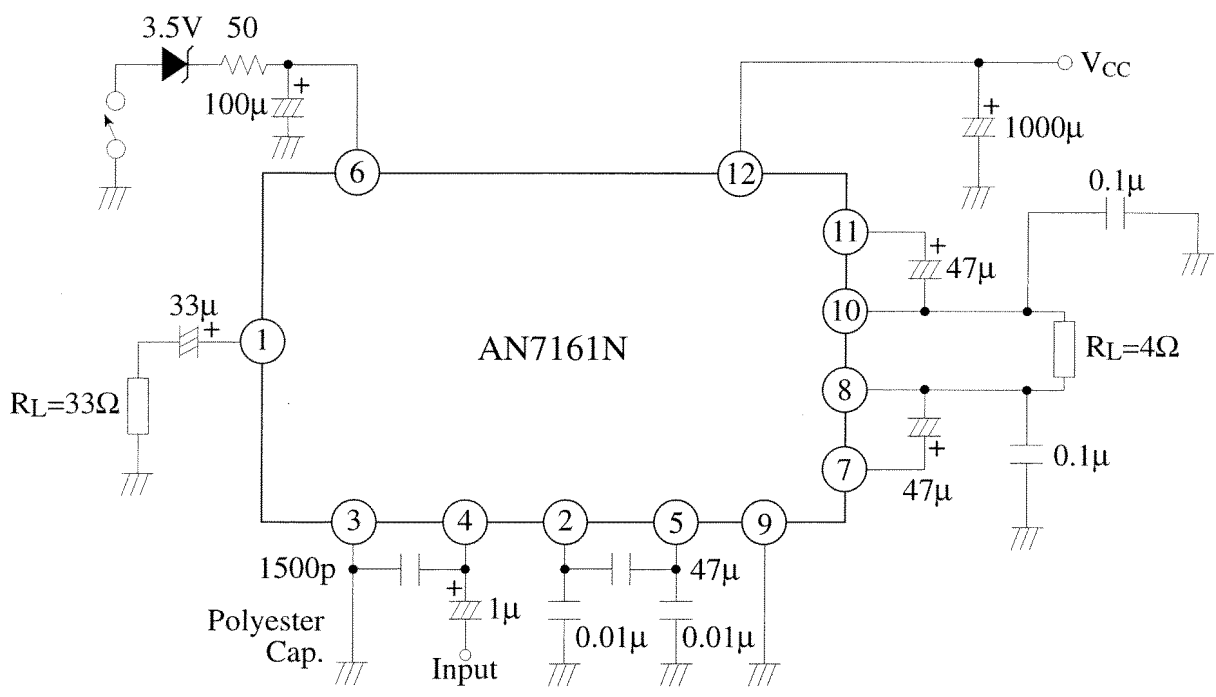
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(Description of test circuit and test method)

Test Circuit 1



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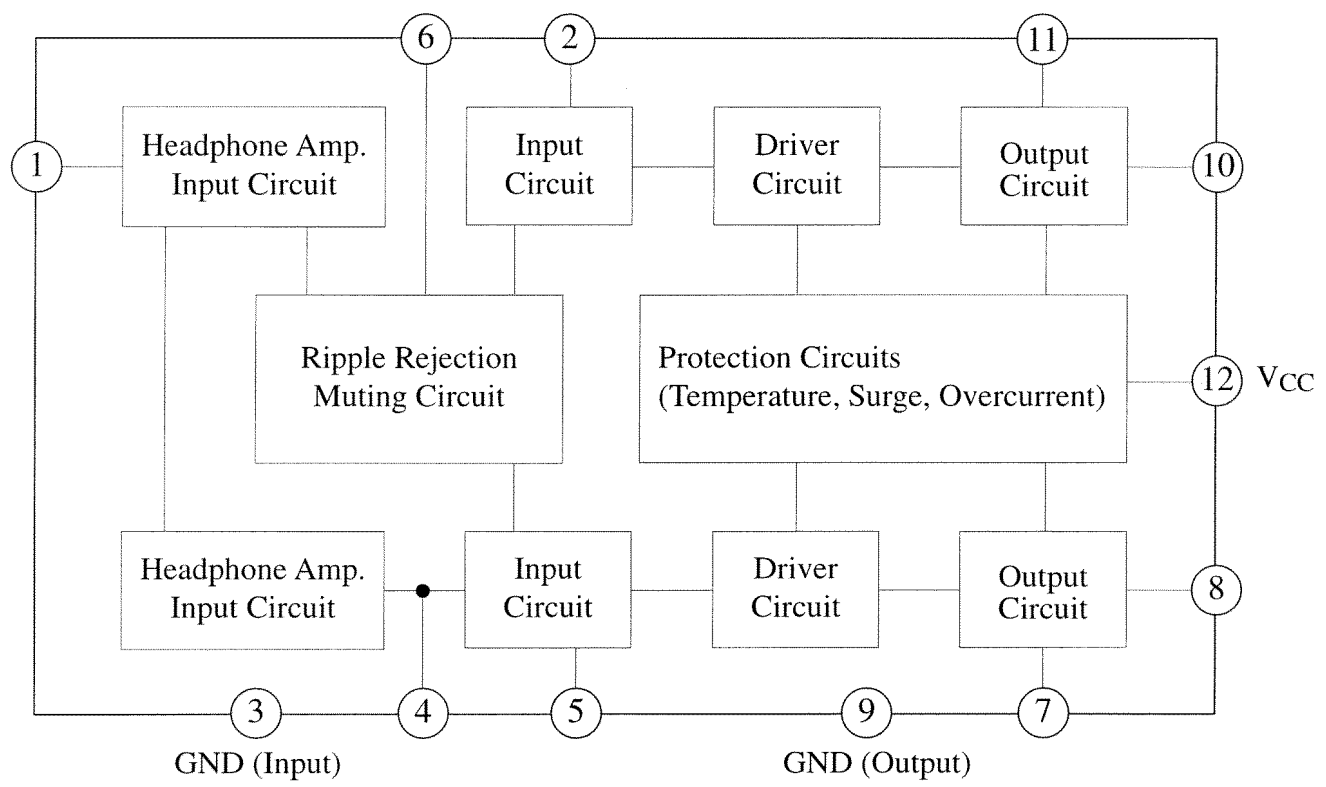
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### Circuit Function Block Diagram



### Pin Descriptions

Pin No.	Description	Pin No.	Description
1	Output (Headphone)	7	Bootstrap Channel 1
2	Negative Feedback Channel 2	8	Output Channel 1
3	GND (Input)	9	GND (Output)
4	Input	10	Output Channel 2
5	Negative Feedback Channel 1	11	Bootstrap Channel 2
6	Ripple Filter	12	VCC

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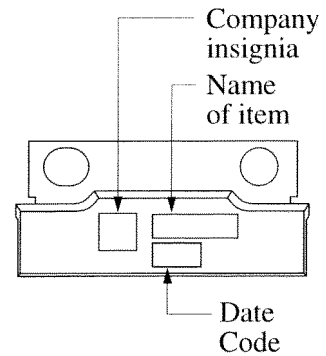
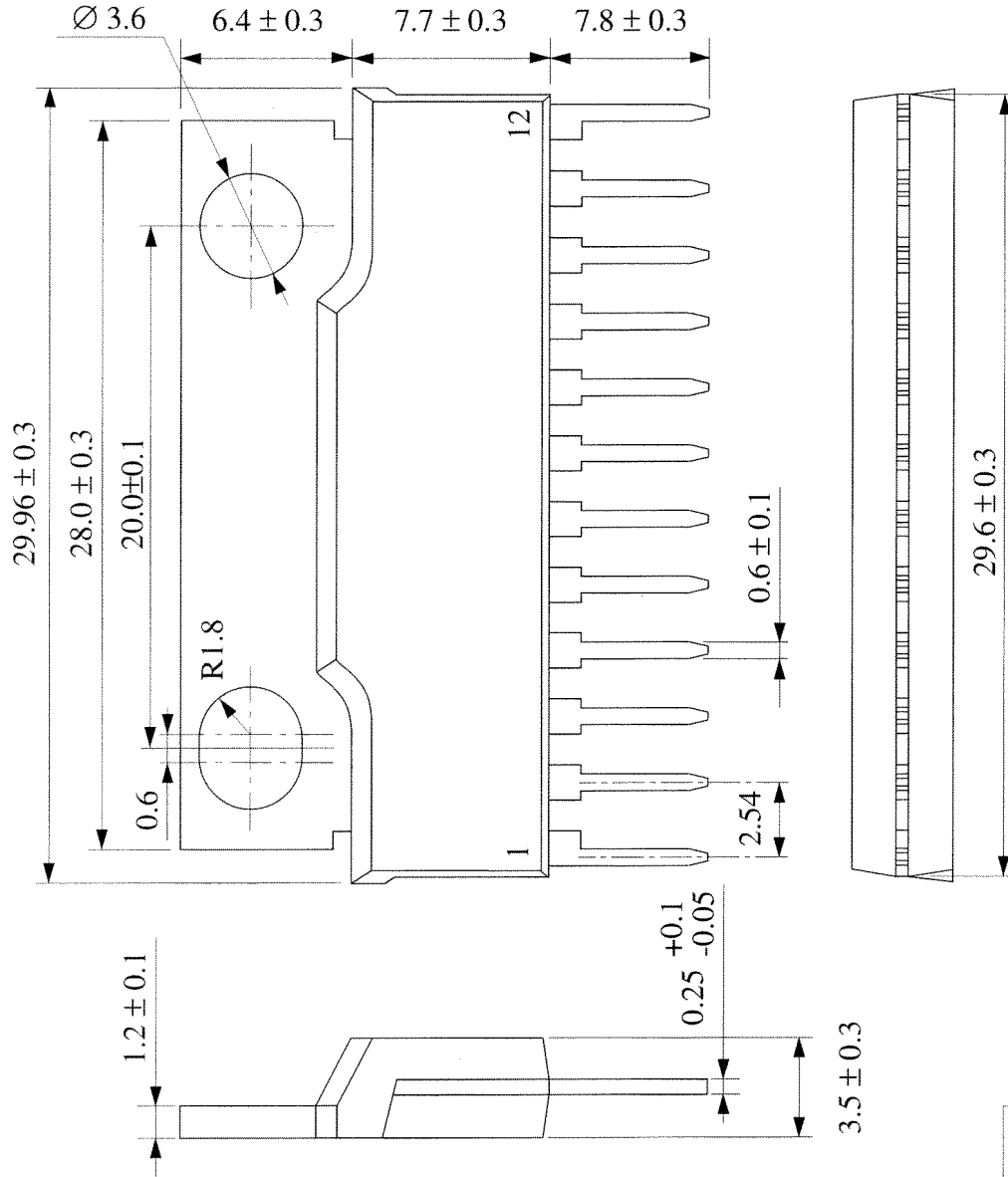
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Package Name FP-12S

Unit : mm



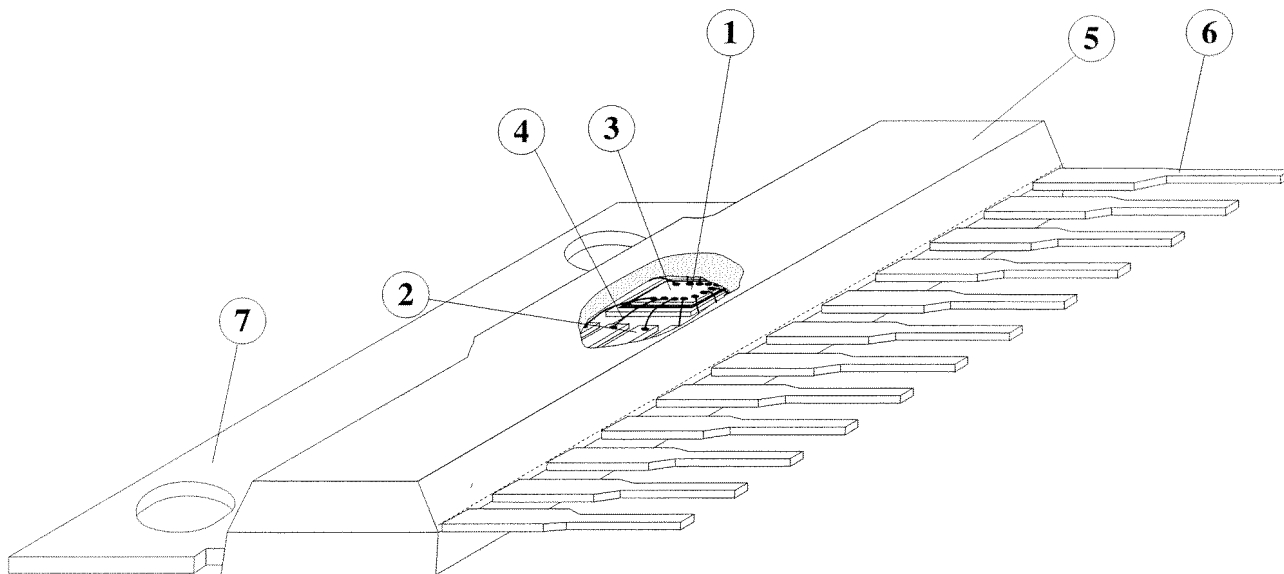
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**(Structure Description)**

Chip surface passivation	SiN, <span style="border: 1px solid black; border-radius: 5px; padding: 2px;">PSG,</span> Others ( )	①
Lead frame material	Fe group, <span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Cu group,</span> Others ( )	②, ⑥
Inner lead surface process	<span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Ag plating,</span> Au plating, Others ( )	②
Outer lead surface process	Solder plating, <span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Solder dip,</span> Others ( )	⑥
Chip mounting method	Ag paste, Au-Si alloy, <span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Solder,</span> Others ( )	③
Wire bonding method	<span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Thermalsonic bonding,</span> Others ( )	④
Wire material, Diameter	<span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Au,</span> Diameter <u>50</u> μm Others ( )	④
Mold material	<span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Epoxy,</span> Others ( )	⑤
Molding method	<span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Transfer mold,</span> Multiplunger mold, Others ( )	⑤
Fin material	<span style="border: 1px solid black; border-radius: 5px; padding: 2px;">Cu Group</span> Others ( )	⑦

**Package FP-12S**



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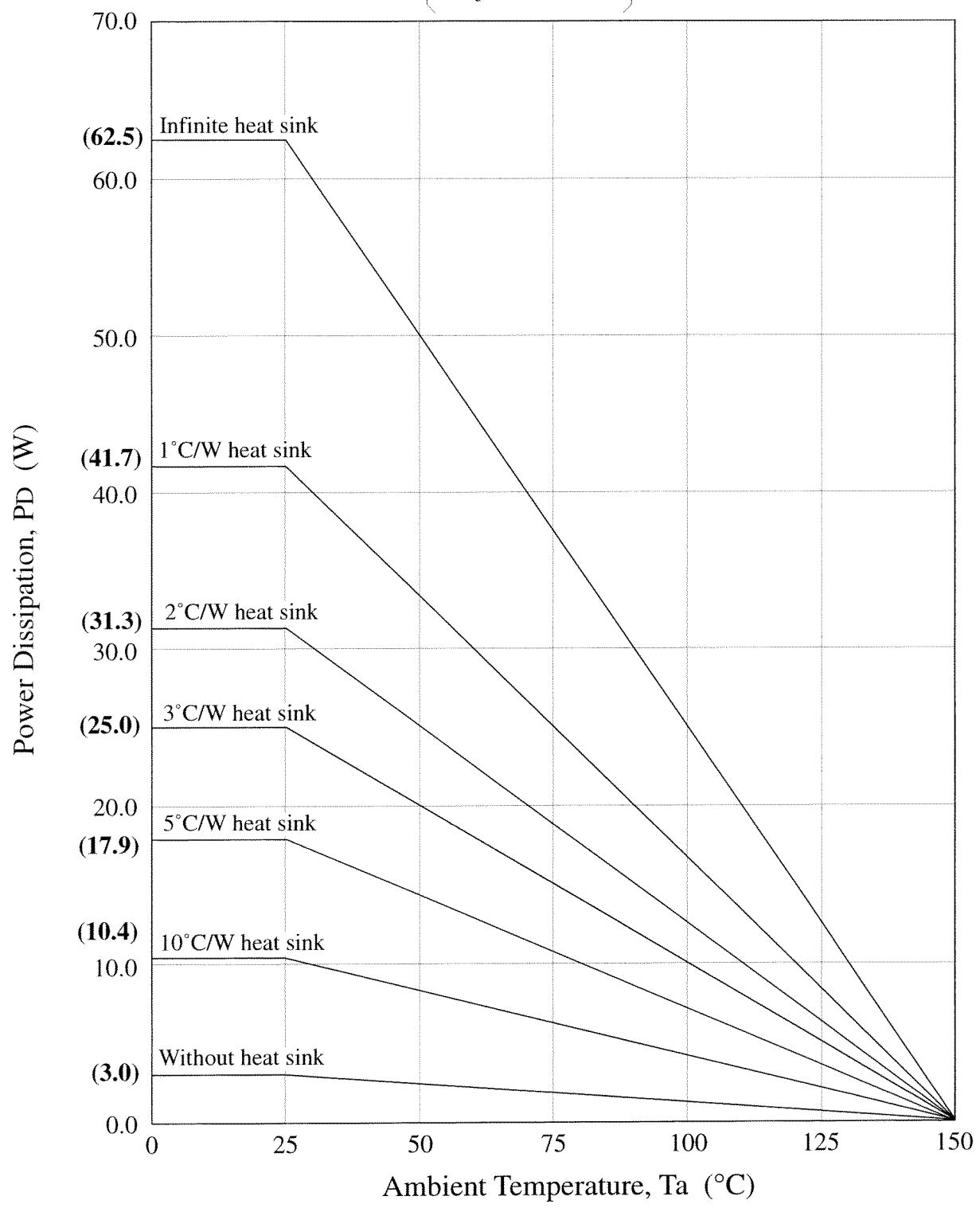
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**FP-12S Package Power Dissipation**

$P_D - T_a$

$R_{th(j-c)} = 2^{\circ}C/W$   
 $R_{th(j-a)} = 42^{\circ}C/W$



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