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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Prepared		Product Specifications AN7586	Ref No.	A - 1
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Structure	Silicon Monolithic Bipolar IC
Appearance	SIL-7 Pins Plastic Package (Power Type With Fin)
Application	Low Frequency Amplifier
Function	Mono 10W Audio Power Amplifier, with standby circuit and incorporating protection circuits

Absolute Maximum Ratings					
No.	Item	Symbol	Ratings	Unit	Note
1	Storage Temperature	Tstg	-55 ~ +150	° C	1
2	Operating Ambient Temperature	Topr	-25 ~ +75	° C	1
3	Operating Ambient Pressure	Popr	$1.013 \times 10^5 \pm 0.61 \times 10^5$ (1.0 ± 0.6)	Pa (atm)	
4	Operating Constant Acceleration	Gopr	9,810 (1,000)	m / s ² (G)	
5	Operating Shock	Sopr	4,900 (500)	m / s ² (G)	
6	Power Supply Voltage	Vcc	35.0	V	
7	Power Supply Current	Icc	2.0	A	
8	Power Dissipation	PD	18.7	W	2

Operating Supply Voltage Range	Vcc	10.0 V ~ 32.0 V
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Note : 1) Except these items, all other measurements are taken at Ta = 25 °C.

2) Ta = 75 °C with infinite heat sink.

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A	Absolute Maximum Ratings				
No.	Item	Symbol	Ratings	Unit	Note
1	Pin Voltage (Pin 3)	V ₃	-0.3 ~ +3.0	V	

Note) For the above mentioned terminals do not apply a voltage or current that is outside the described range.

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No.	Item	Symbol	Test Cct.	Condition	Limit			Unit	Note
					Min	Typ	Max		
					B Electrical Characteristics (Ambient temperature is 25°C±2°C unless otherwise specified)				
1	Quiescent Current	Icq		Vin=0mV	-	30	60	mA	
2	Output End Noise Voltage	Vno		No input, Rg=10k	-	0.22	0.4	mV	2
3	Voltage Gain	Gv		Vin=57mV	32	34	36	dB	
4	Total Harmonic Distortion	THD		Vin=57mV	-	0.2	0.4	%	
5	Maximum Output Power	Po		Vcc=26V, THD=10%	8.0	10.0	-	W	
6	Ripple Rejection Ratio	RR		Vr=1 Vrms, fr=120Hz,Rg=10k	45	55	-	dB	2
7	Stand-by On Voltage	Vstb-on		No input Icc ≤ 0.1mA	-	-	5.0	V	
8	Stand-by Off Voltage	Vstb-off		No input Icc ≥ 9.5mA	8.5	-	-	V	

Note : 1) f=1kHz, RL=8Ω, Vcc=26V, unless otherwise stated

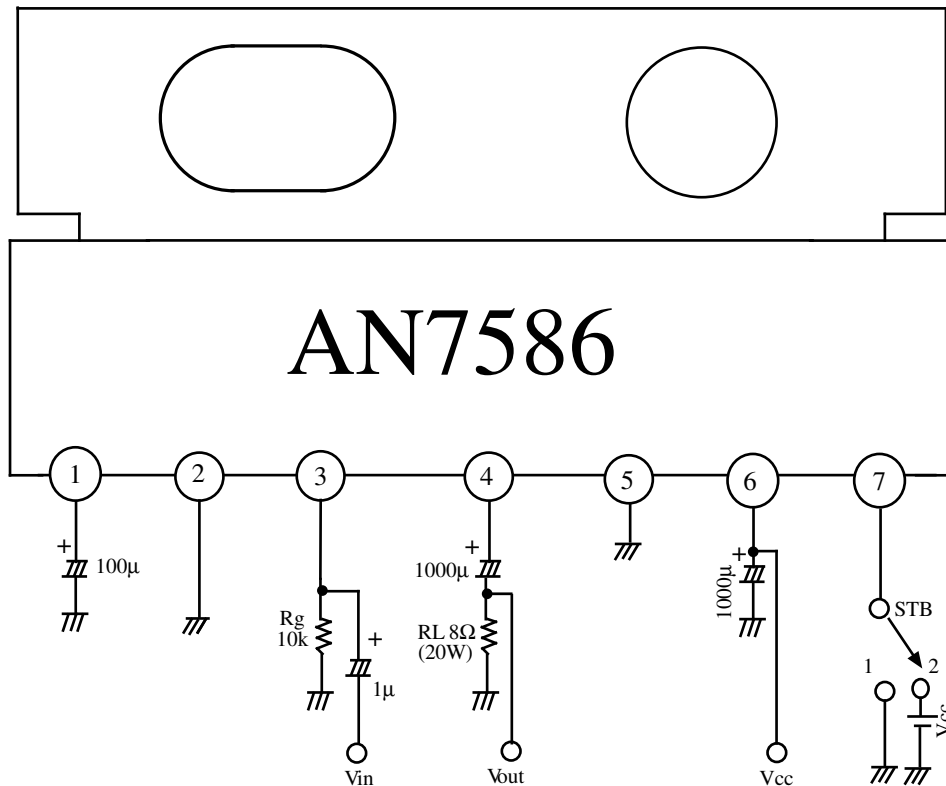
2) For this measurement, use the 20Hz~20kHz (12dB/OCT) filter.

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Description of Test Circuits and Test Methods

Test Circuit :

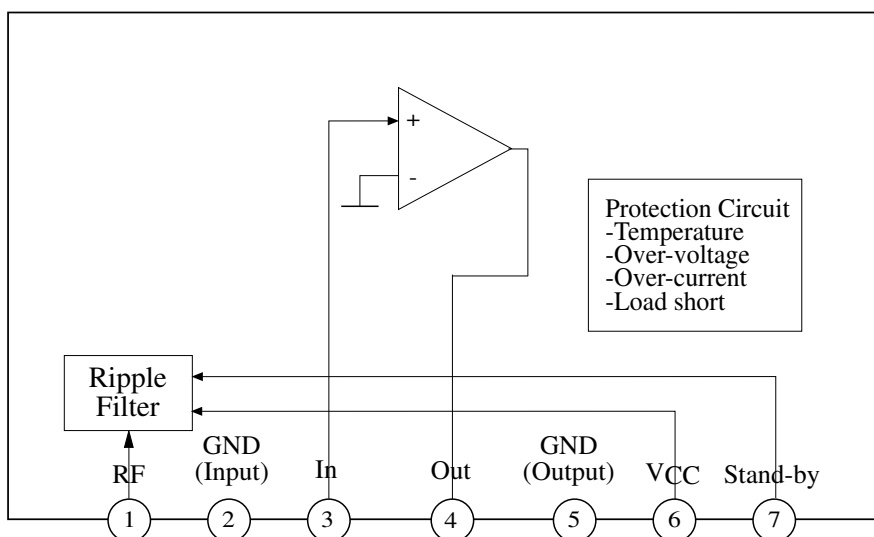


Note:
For ' OPERATIONAL MODE ', connect STB to Vcc.

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Circuit Function Block Diagram



Pin Descriptions

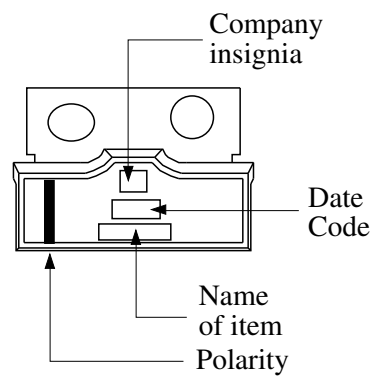
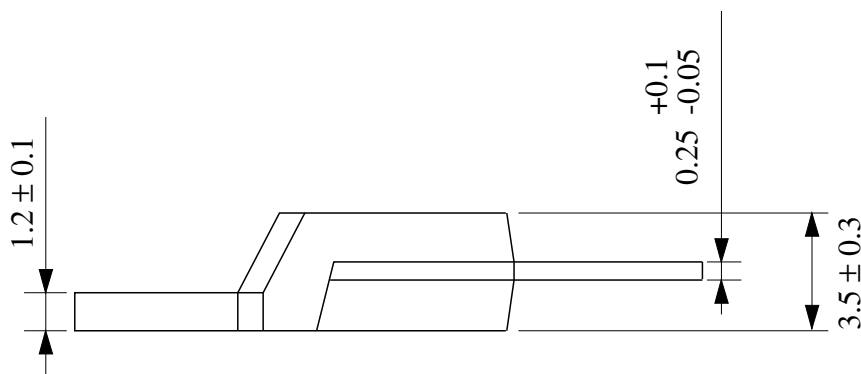
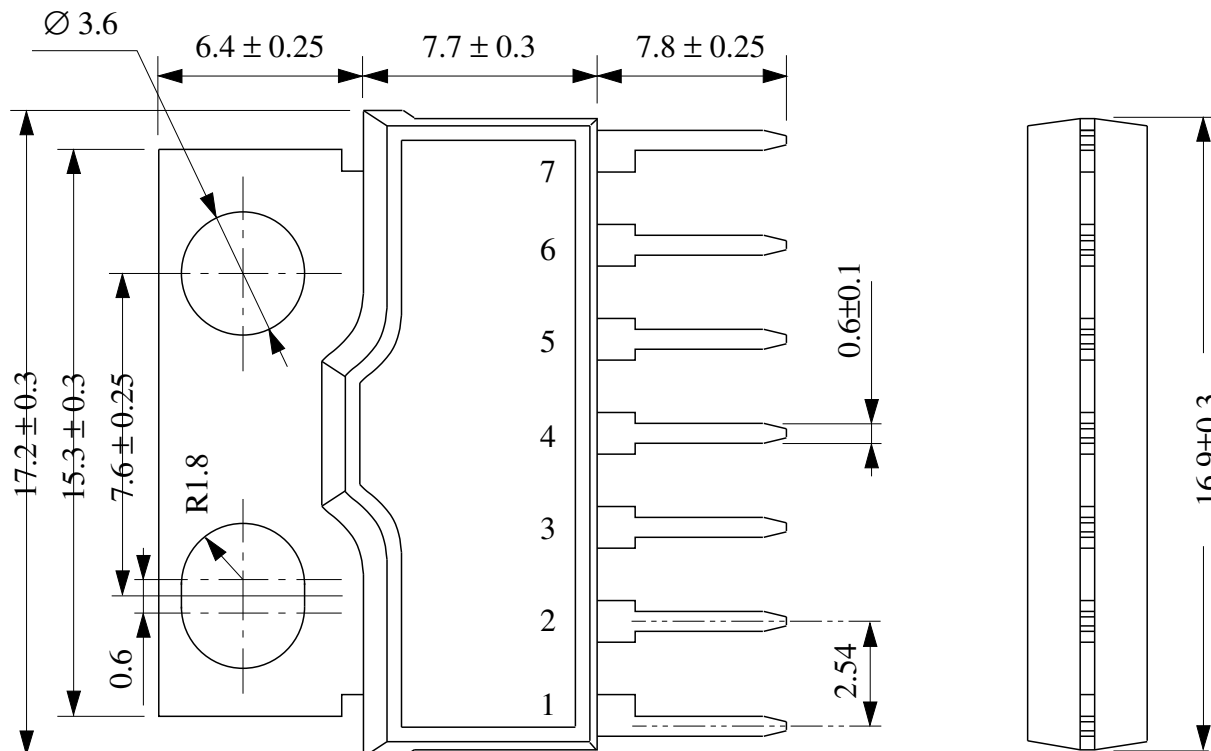
Pin No.	Pin Descriptions	Pin No.	Pin Descriptions
1	Ripple Filter	5	GND (output)
2	GND (input)	6	Vcc
3	Input	7	Standby
4	Output		

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Package Name	FP - 7S
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Unit : mm



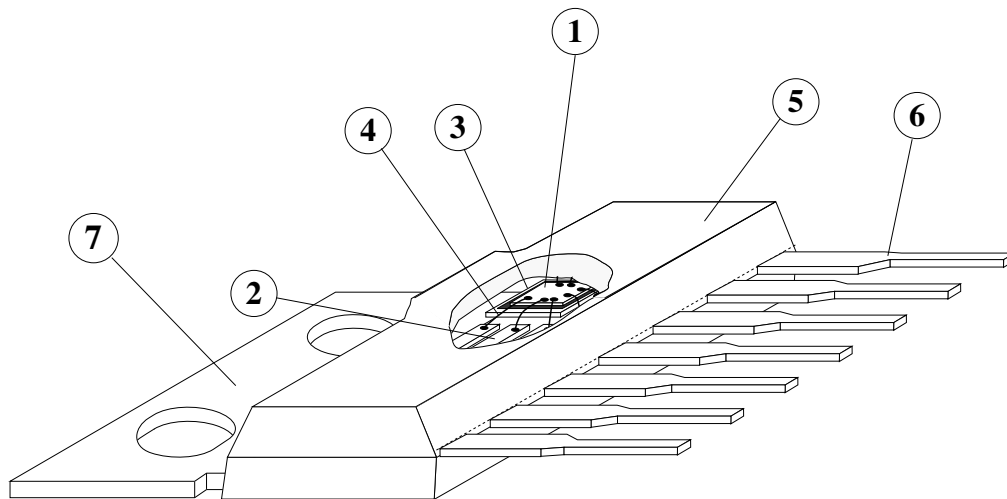
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(Structure Description)

Chip surface passivation	SiN,	PSG,	Others ()	①	
Lead frame material	Fe group,	Cu group,	Others ()	②, ⑥	
Inner lead surface process	Ag plating,	Au plating,	Others ()	②	
Outer lead surface process	Solder plating,	Solder dip,	Others ()	⑥	
Chip mounting method	Ag paste,	Au-Si alloy,	Solder,	Others ()	③
Wire bonding method	Thermalsonic bonding,		Others ()	④	
Wire material	Au,	Diameter 38 μm	Others ()	④	
Mold material	Epoxy,		Others ()	⑤	
Molding method	Transfer mold,	Multiplunger mold,	Others ()	⑤	
Heat Fin Material	Fe group,	Cu group,	Others ()	⑦	

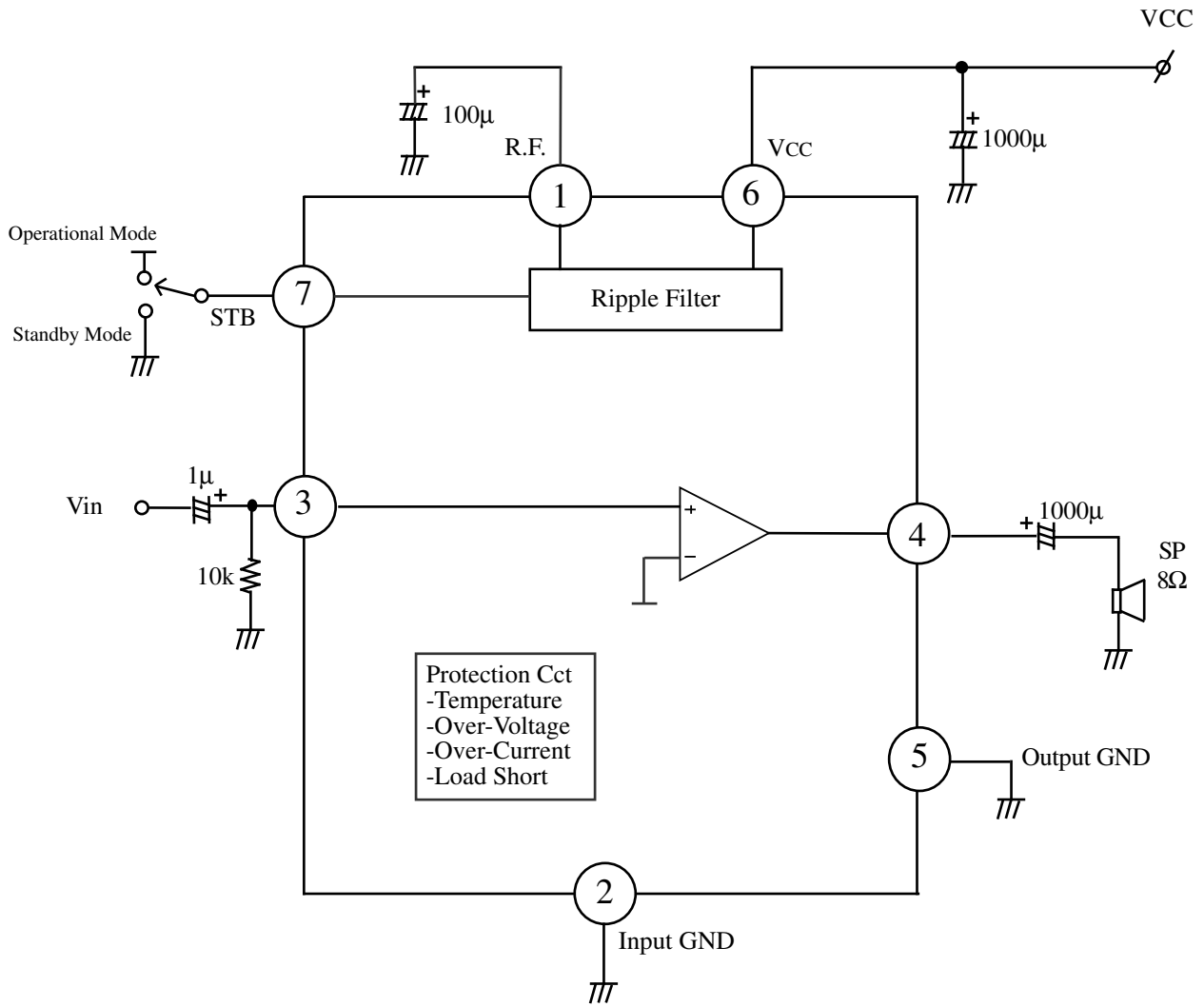
Package FP-7S



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Application Circuit



Operational Mode	VCC
Standby Mode	0V

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Pin No.	Function	Adjacent Circuitry	Pins Description / Signal	DC Bias (V)
1	Ripple Filter		This is the pin to connect the positive terminal of a ripple filter capacitor.	Vcc-1.5V _{BE}
2	Input GND		Input ground pin.	0V
3	Input		This is the amplifier input pin.	0V

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Pin No.	Function	Adjacent Circuitry	Pins Description / Signal	DC Bias (V)
4	Output		Output pin	$V_{cc}/2$
5	Output Gnd		Output ground.	0V
6	Vcc		This is the power supply pin.	Typ: 26V
7	Standby		Standby control pin. Standby Mode = 0 V Operational Mode = Vcc	

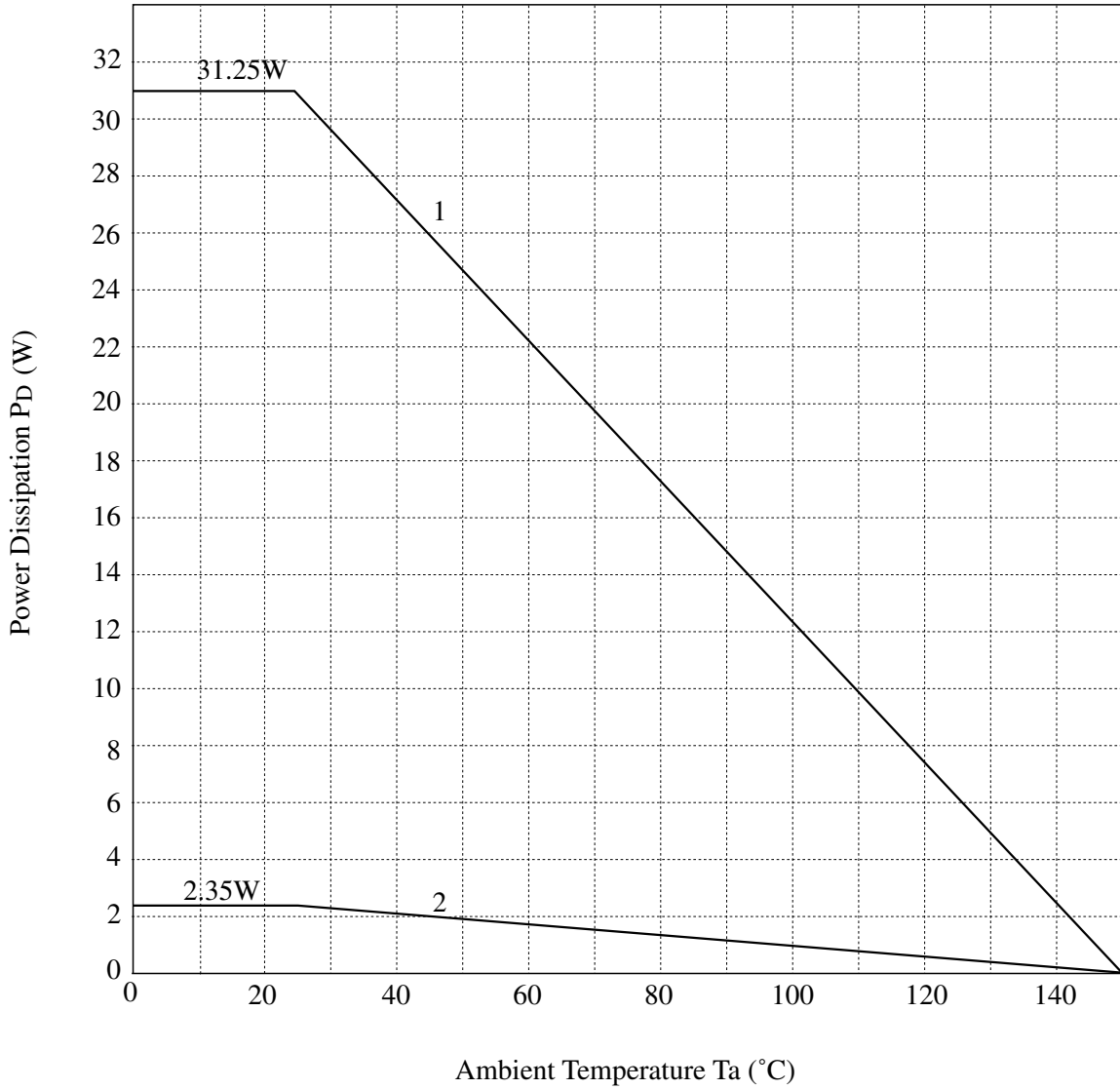
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FP-7S Power Dissipation vs. Ambient Temperature

- 1 Infinity Heat Sink : $R_{th(j-c)} = 4 \text{ } ^\circ\text{C/W}$
- 2 No Heat Sink : $R_{th(j-a)} = 53.2 \text{ } ^\circ\text{C/W}$



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Application's Precautions

- (1) External heatsink is needed when used. External heatsink should be fixed to the chassis.
- (2) Fin of the IC can be connected to GND.
- (3) Please prevent "Output to VCC short", "Output to GND short", "Pin Shift" in direction of Pin 7 and "Reverse Insertion" to avoid damaging the IC.
- (4) The temperature protection circuit will operate at Tj around 150°C. However, if temperature decrease, the protection circuit will automatically be deactivated and resume normal operation.

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