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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.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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EXTERNAL ISSUE

Prepared	<i>[Signature]</i>	Product Specifications AN7135	Ref No.	A1
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Structure	Silicon Monolithic Bipolar IC
Appearance	FP12S Pin Plastic Package (with Fin)
Application	Low Frequency Power Amplifier
Function	7.5W(3Ω) x 2 Channel Power amplifier With Standby Function

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	Operating Ambient Pressure	Popr	1.013x10 ⁵ ±0.61x10 ⁵	Pa	
4	Operating Constant Acceleration	Gopr	9,810	m/s ²	
5	Operating Shock	Sopr	4,900	m/s ²	
6	Supply Voltage	VCC	24	V	
7	Supply Current	ICC	4.0	A	
8	Power Dissipation	PD	62.5	W	2

Operating Supply Voltage Range	VCC	5V ~ 18V	Note 3
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Note 1: The temperature of all item shall be Ta=25°C except storage temperature and operating ambient temperature.

Note 2: R_{θj-c} = 2.0°C/W

Note 3: 24V during no signal.

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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 _{cq}	1	V _{IN} =0mV	-	14	20	mA	
2	Output Noise Voltage	V _{NO}	1	V _{IN} =0mV, R _g =10kΩ	-	0.25	0.50	mV	1
3	Voltage Gain	G _v	1	V _{IN} =3mV	42.5	44.5	46.5	dB	
4	Total Harmonic Distortion	THD	1	V _{IN} =3mV	-	0.40	0.75	%	
5	Maximum Power Output	P _o	1	THD=10%	7.0	7.5	-	W	
6	Channel Balance	CB	1	V _{IN} =3mV	-1	0	+1	dB	
7	Ripple Rejection	RR	1	V _{cc} (ripple) = 280mV f(ripple) = 120Hz R _g = 0Ω Sine wave	45	50	-	dB	1
8	Input Offset Voltage	V _{IN(O.S)}	1	Input pin open	-	10	30	mV	
9	Standy-by current	I _{STB}	1	Pin 3 open	-	-	30	μA	

< V_{cc} = 15.0V, R_L = 3Ω, Freq = 1kHz, Driving 2 channel >

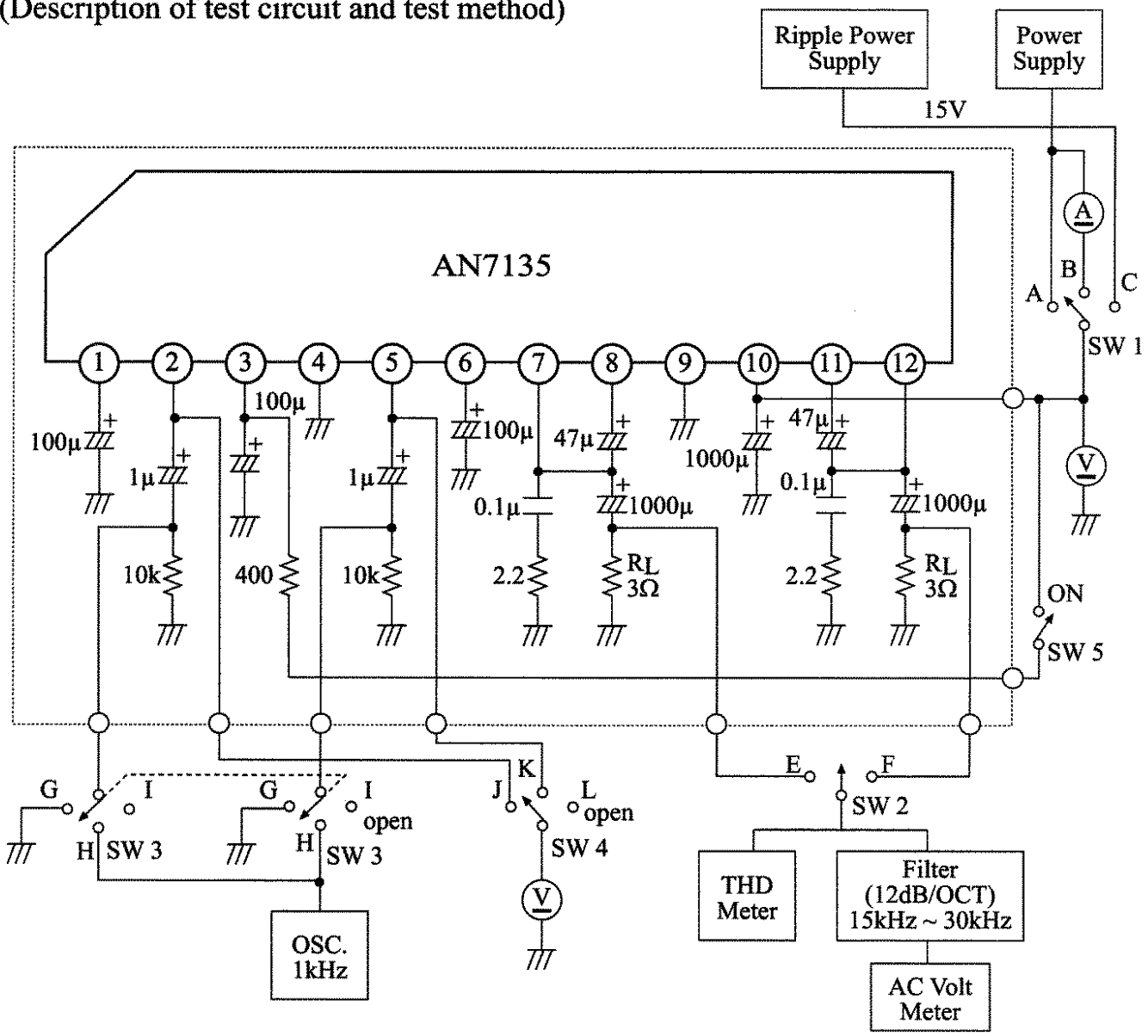
Note 1) Use filter 15Hz ~ 30kHz (12dB/OCT) when measurement.

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(Description of test circuit and test method)

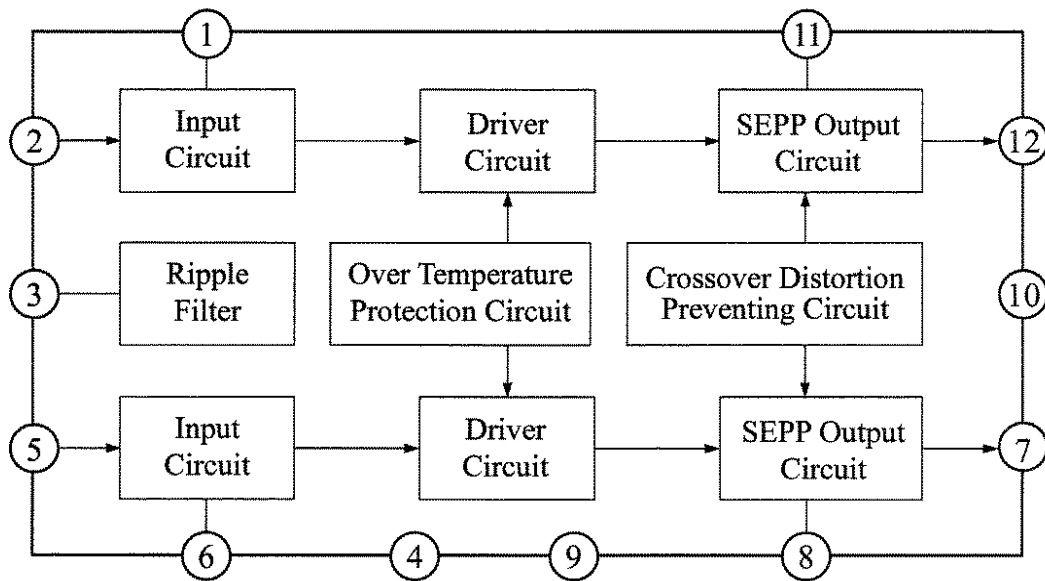


ITEM	SW 1	SW 2	SW 3	SW 4	SW 5
B1	B	-	G	L	ON
B2	A	E or F	I	L	ON
B3	A	E or F	H	L	ON
B4	A	E or F	H	L	ON
B5	A	E or F	H	L	ON
B6	A	E or F	H	L	ON
B7	C	E or F	G	L	ON
B8	A	-	I	J or K	ON
B9	A	-	I	-	OFF

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Circuit Function Block Diagram



Pin Descriptions

Pin No.	Description	Pin No.	Description
1	Channel 1 negative feedback	7	Channel 2 output
2	Channel 1 input	8	Channel 2 bootstrap
3	Repple filter / Stand-by	9	GND (Output side)
4	GND (Input side)	10	Power supply
5	Channel 2 input	11	Channel 1 bootstrap
6	Channel 2 negative feedback	12	Channel 1 output

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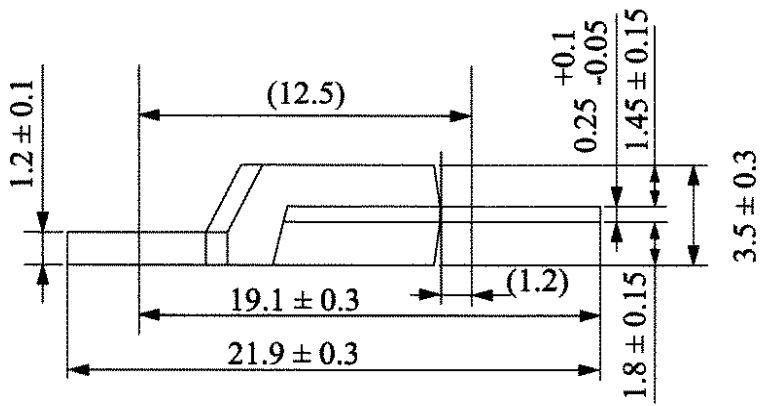
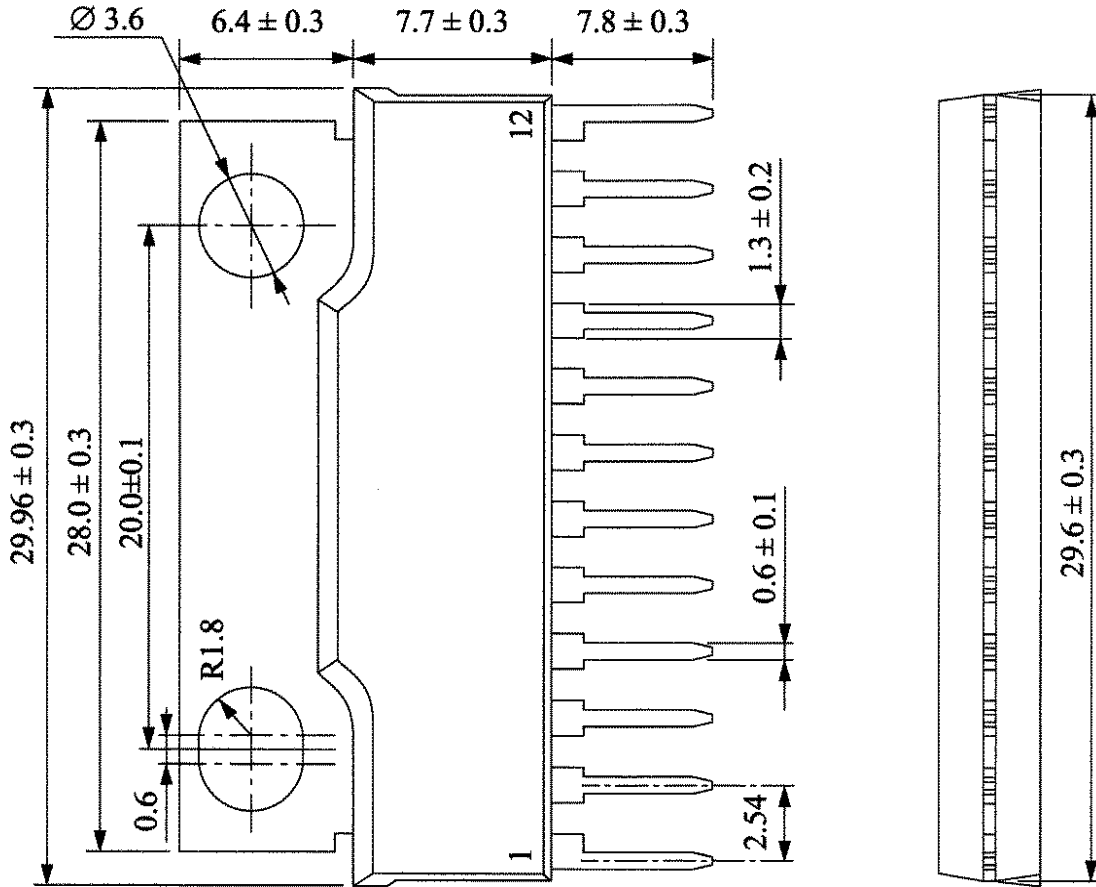
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Product Specifications

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Package Name	FP 12S
Unit : mm	



() : Reference value

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Prepared	Yiap Shi Hui
Checked	John Ng
Approved	T. Sugimura

Product Specifications
(Leadfree)
AN7135

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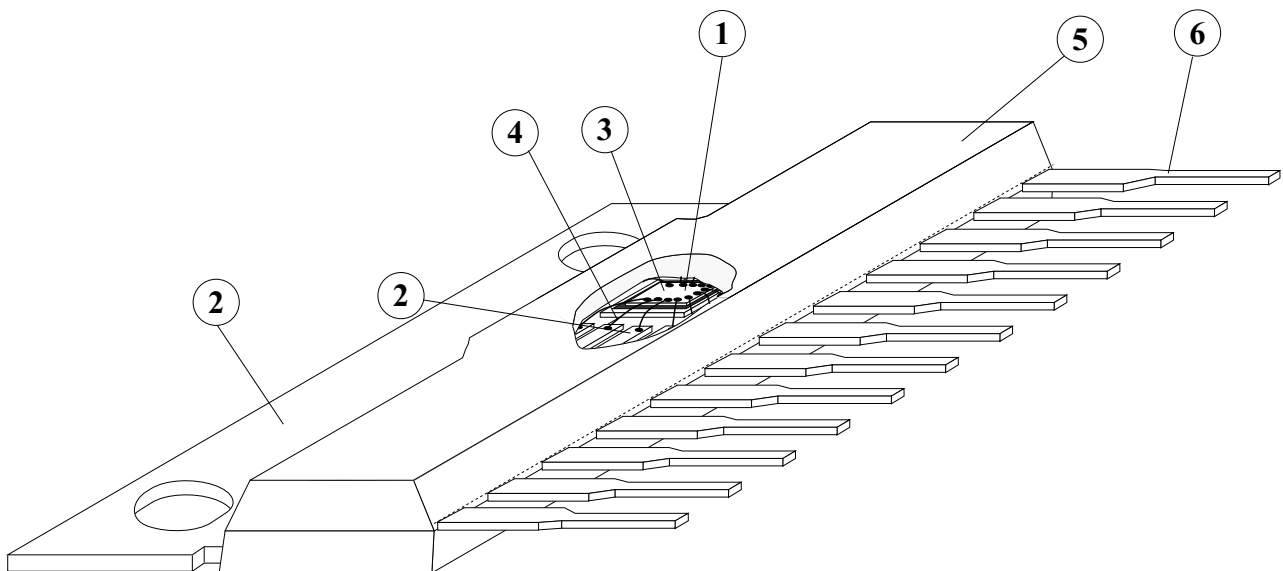
(Structure Description)

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Chip surface passivation	SiN, <input type="checkbox"/> PSG, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 1
Lead frame material	Fe group, <input type="checkbox"/> Cu group, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 2, <input type="checkbox"/> 6
Inner lead surface process	<input type="checkbox"/> Ag plating, <input type="checkbox"/> Au plating, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 2
Outer lead surface process	General Customer: Solder Plating (98Sn-2Bi) SC Buyback: Solder Dip (95.5Sn-2Ag-2Bi-0.5Cu)		<input type="checkbox"/> 6
Chip mounting method	Ag paste, Au-Si alloy, <input type="checkbox"/> Solder (95.5Pb-2.5Ag-2Sn)**		<input type="checkbox"/> 3
Wire bonding method	<input type="checkbox"/> Thermalsonic bonding, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 4
Wire material	<input type="checkbox"/> Au, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 4
Mold material	<input type="checkbox"/> Epoxy, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 5
Molding method	<input type="checkbox"/> Transfer mold, <input type="checkbox"/> Multiplunger mold, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 5
Fin material	<input type="checkbox"/> Cu group, <input type="checkbox"/>	Others ()	<input type="checkbox"/> 7

** Under RoHS exemption clause, Lead (Pb) in high melting temperature type solder (ie. tin-lead solder alloy containing more than 85% of lead), is exempted until 2010.

Package FP12S



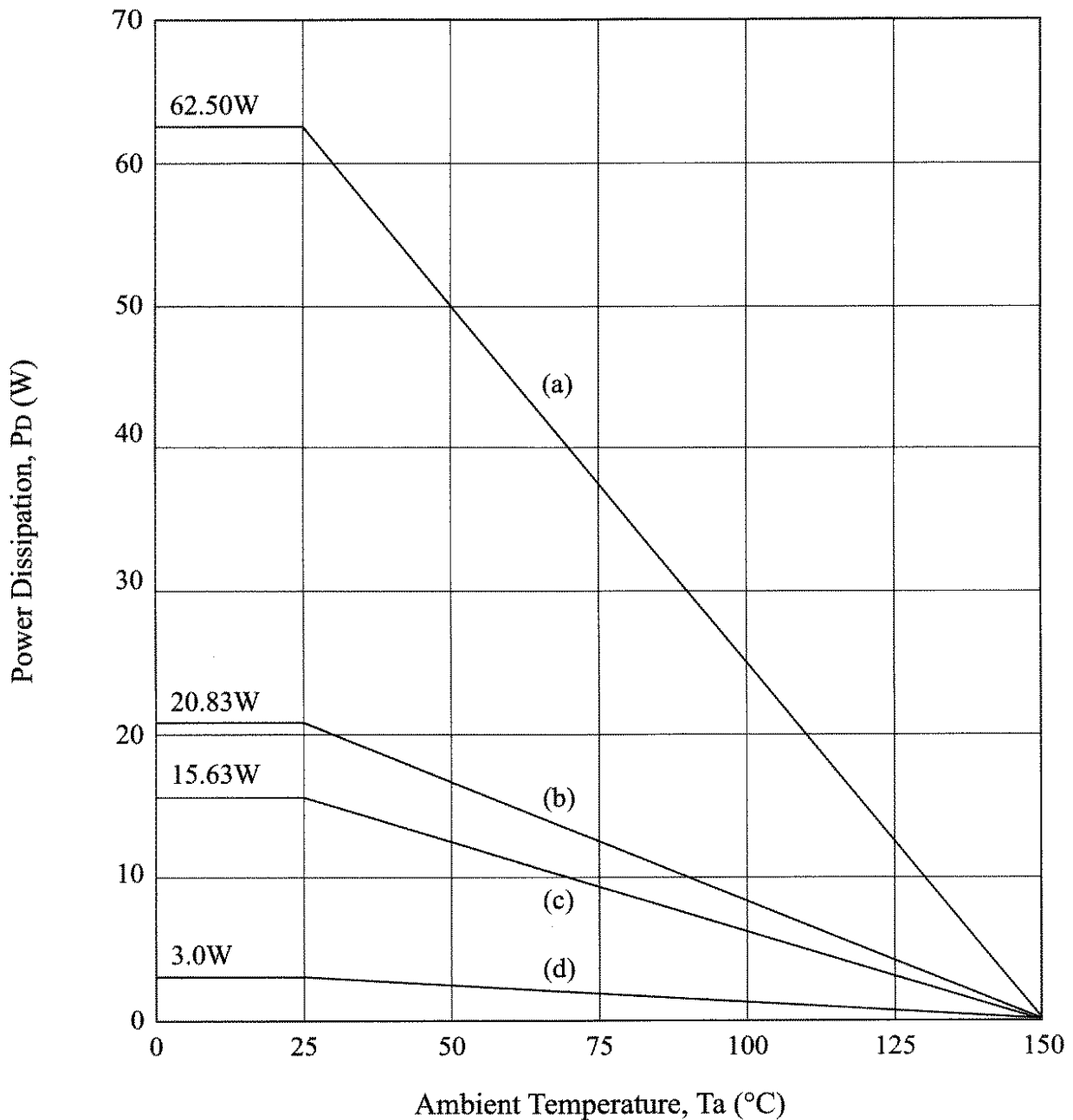
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- (a) 62.50W Unlimited heatsink ($\theta_{j-c} = 2^{\circ}\text{C/W}$)
- (b) 20.83W ($\theta_f = 4.0^{\circ}\text{C/W}$)
Heat sink of 100cm² x 3mm Al (black lacquer) or
200cm² x 2mm Al (without lacquer)
- (c) 15.63W ($\theta_f = 6.0^{\circ}\text{C/W}$)
Heat sink of 100cm² x 2mm Al (without lacquer)
- (d) 3.0W at $T_a = 30^{\circ}\text{C}$ ($\theta_{j-a} = 40^{\circ}\text{C/W}$) No Heat sink

Power Dissipation P_D - T_a



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