



28-APR-94	20-APR-95	13-JUL-98	20-JUL-04
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Note 1: The temperature of all item shall be  $T_a=25^{\circ}\text{C}$  except storage temperature and operating ambient temperature.  
 Note 2:  $R_{\theta j-c} = 2.0^{\circ}\text{C/W}$   
 Note 3: 24V during no signal.

Operating Supply Voltage Range	VCC	5V ~ 18V	Note 3
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No.	Item	Symbol	Ratings	Unit	Note
A	Absolute Maximum Ratings				
1	Storage Temperature	Tstg	-55 ~ +150	$^{\circ}\text{C}$	1
2	Operating Ambient Temperature	Topr	-30 ~ +75	$^{\circ}\text{C}$	1
3	Operating Ambient Pressure	Popr	$1.013 \times 10^5 \pm 0.61 \times 10^5$	Pa	
4	Operating Constant Acceleration	Gopr	9,810	$\text{m/s}^2$	
5	Operating Shock	Sopr	4,900	$\text{m/s}^2$	
6	Supply Voltage	VCC	24	V	
7	Supply Current	ICC	4.0	A	
8	Power Dissipation	Pd	62.5	W	2

Structure	Silicon Monolithic Bipolar IC
Appearance	SIL-12 Pin Plastic Package (with Fin)
Application	Low Frequency Power Amplifier
Function	7.5W(3 $\Omega$ ) x 2 Channel Power amplifier With Standby Function

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< Vcc = 15.0V, RL = 3Ω, Freq = 1kHz, Driving 2 channel >  
 Note 1) Use filter 15Hz ~ 30kHz (12dB/OCT) when measurement.

No.	Item	Symbol	Test Cir- cuit	Conditions	Limits			Unit	Note
					min	typ	max		
B	Electrical Characteristics (Unless otherwise specified, the ambient temperature is 25°C ± 2°C)								
1	Quiescent Circuit Current	I <sub>cc</sub>	1	V <sub>IN</sub> =0mV	-	14	20	mA	
2	Output Noise Voltage	V <sub>NO</sub>	1	V <sub>IN</sub> =0mV, R <sub>g</sub> =10kΩ	-	0.25	0.50	mV	1
3	Voltage Gain	G <sub>v</sub>	1	V <sub>IN</sub> =3mV	42.5	44.5	46.5	dB	
4	Total Harmonic Distortion	THD	1	V <sub>IN</sub> =3mV	-	0.40	0.75	%	
5	Maximum Power Output	P <sub>o</sub>	1	THD=10%	7.0	7.5	-	W	
6	Channel Balance	CB	1	V <sub>IN</sub> =3mV	-1	0	+1	dB	
7	Ripple Rejection	RR	1	V <sub>cc</sub> (ripple) = 280mV f(ripple) = 120Hz R <sub>g</sub> = 0Ω Sine wave	45	50	-	dB	1
8	Input Offset Voltage	V <sub>IN</sub> (O.S)	1	Input pin open	-	10	30	mV	
9	Standby-by current	I <sub>STB</sub>	1	Pin 3 open	-	-	30	μA	

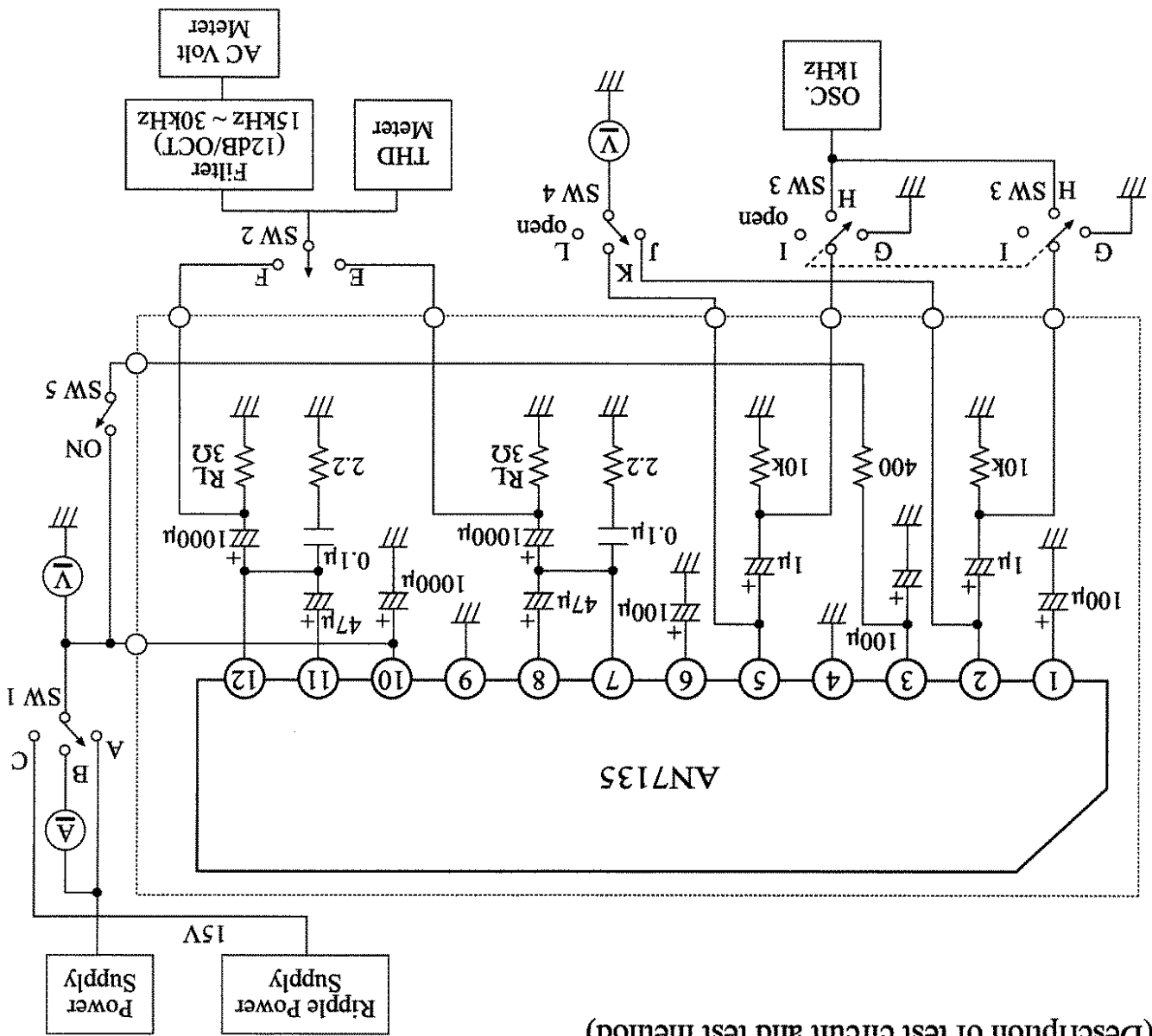
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(Description of test circuit and test method)

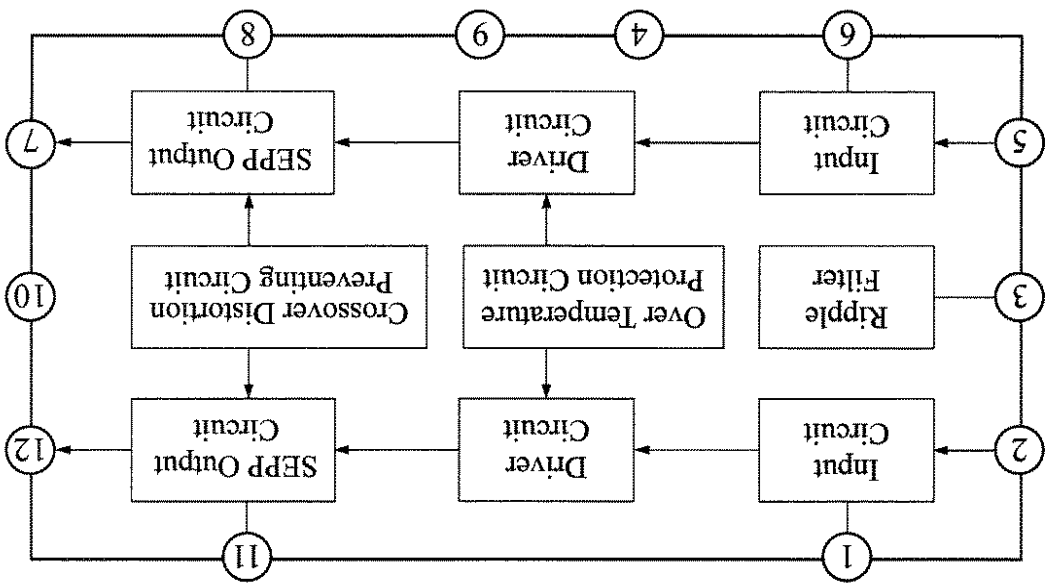


ITEM	SW 1	SW 2	SW 3	SW 4	SW 5
B1	B	-	G	L	ON
B2	A	E or F	I	L	ON
B3	A	E or F	H	L	ON
B4	A	E or F	H	L	ON
B5	A	E or F	H	L	ON
B6	A	E or F	H	L	ON
B7	C	E or F	G	L	ON
B8	A	-	I	J or K	ON
B9	A	-	I	-	OFF

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**Circuit Function Block Diagram**

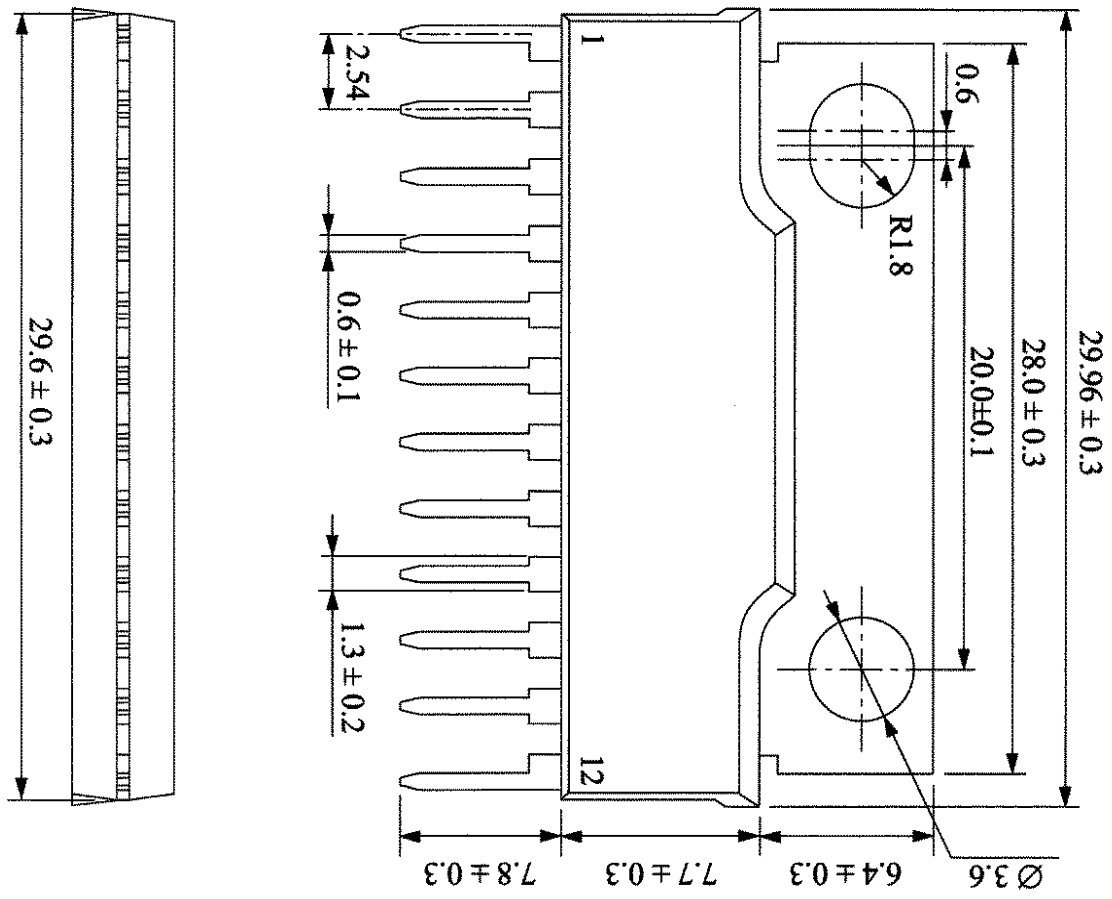
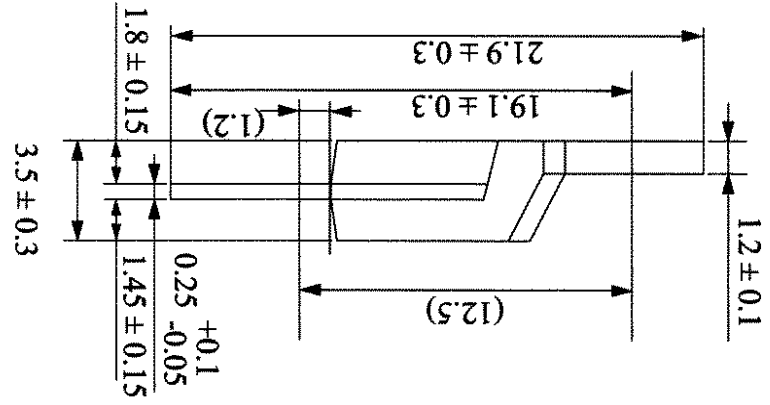
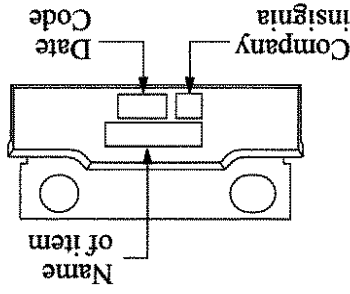


**Pin Descriptions**

Pin No.	Description	Pin No.	Description
1	Channel 1 negative feedback	7	Channel 2 output
2	Channel 1 input	8	Channel 2 bootstrap
3	Ripple 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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( ) : Reference value



Unit : mm

Package Name FP-12S

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Checked	John Ng		Total Page	7
Approved	T. Sugimura		Page No.	6A

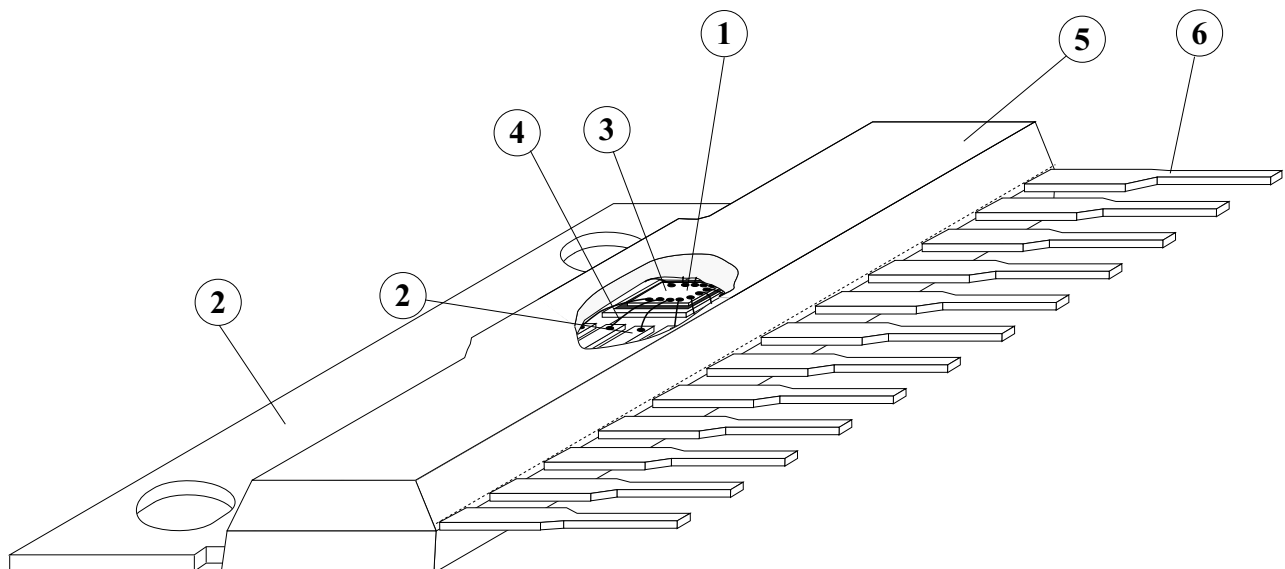
**(Structure Description)**

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	Solder dip, Solder plating (98Sn-2Bi), <input type="checkbox"/>		<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

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\*\* 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.

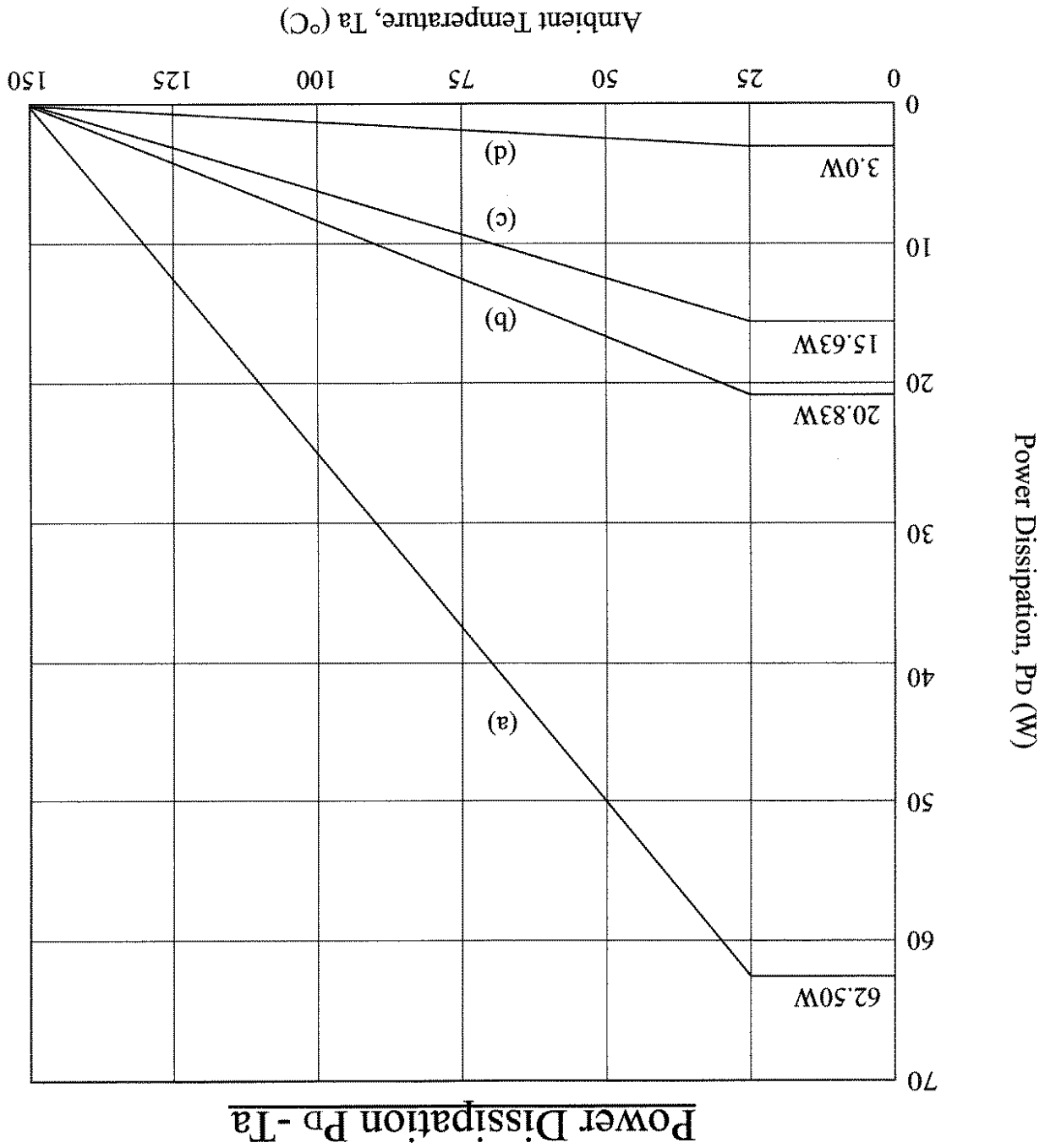
**Package FP12S**



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- (a) 62.50W Unlimited heatsink (θj-c = 2°C/W)
- (b) 20.83W (θf=4.0°C/W)  
Heat sink of 100cm<sup>2</sup> x 3mm Al (black lacquer) or  
200cm<sup>2</sup> x 2mm Al (without lacquer)
- (c) 15.63W (θf=6.0°C/W)  
Heat sink of 100cm<sup>2</sup> x 2mm Al (without lacquer)
- (d) 3.0W at Ta=30°C (θj-a=40°C/W) No Heat sink

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