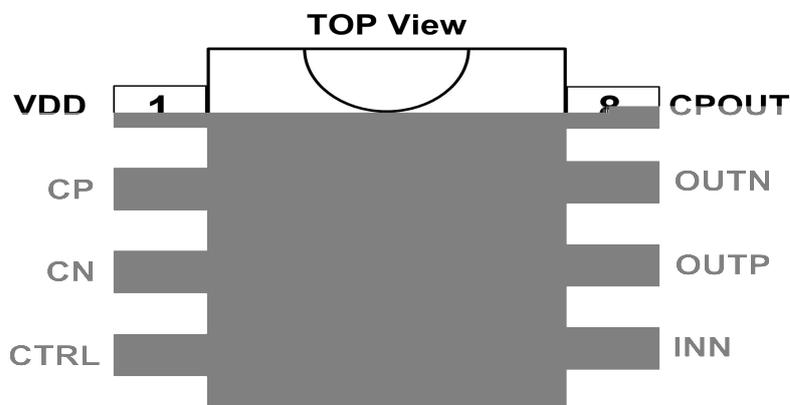




,4 ,AB /D ,5.4W

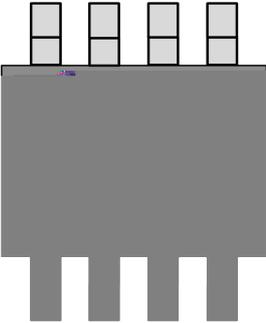


		I/O	
1	VDD	P	
2	CP	I	Flying
3	CN	I	Flying
4	CTRL	I	AB D AB D
5	INN	I	
6	OUTP	O	
7	OUTN	O	
8	CPOUT	O	
9(Thermal Pad)	PGND	P	



HAA9809

,4 ,AB /D ,5.4W

HAA9809	ESOP8L		4000 /
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VDD		7.5	V
VI		-0.3 to VDD+0.3	V
TA		-40°C to 85°C	°C
TJ		-40°C to 150°C	°C
TSTG		-65°C to 150°C	°C
TSLD		300°C, 10sec	°C

Symbol	Parameter	Test Conditions	MIN	MAX	UNIT
VDD		VDD	2.8	5.5	V
VIH	CTRL AB	VDD=2.8V to 5.0V	1.2	1.6	V
	CTRL (D)		1.7	2.2V	
	CTRL (D)		2.3	VDD	
VIL	CTRL	VDD=2.8V to 5.0V	0	0.35	V

Parameter	Symbol	Package	MAX	UNIT
(Juncti on to Ambient)	θ_{JA}	ESOP10L	45	°C/W
(Juncti on to Case)	θ_{JC}	ESOP10L	10	°C/W

ESD

ESD HBM ----- ± 4kV
 ESD CDM ----- ± 2kV

,4 ,AB /D ,5.4W

D (Ri=20K Ci=0.1uF Gain=22.4dB, R_L =4 , T =25°C, .)

Symbol	Parameter	Test Conditions	MIN	TYP	MAX	UNIT
P _o	D	V _{DD} =4.5V		5.4		
		THD+N=10%,f=1KHZ,R _L =4Ω	V _{DD} =4.2V	5.2		W
		V _{DD} =1				

,4 ,AB /D ,5.4W

(Ri=20K Ci=0.1uF RL =4 , f=1KHZ T =25°C, 1 .)

Symbol	Parameter	Test Conditions	MIN	TYP	MAX	UNIT
Po	1	VIN=4.2V,Vpo=300mV, ,RL=4 Ω,NCN MODE1		4.1		W
		VIN=3.6V,Vpo=300mV, ,RL=4 Ω,NCN MODE1		3.7		
THD+N		VIN=4.2V,Vpo=300mV, ,RL=4 Ω,NCN MODE1		0.51		%
		VIN=3.6V,Vpo=300mV, ,RL=4 Ω,NCN MODE1		0.35		
Tat				40		mS
Trl				100		mS

(Ri=20K Ci=0.1uF RL =4 , f=1KHZ T =25°C, 2 .)

Symbol	Parameter	Test Conditions	MIN	TYP	MAX	UNIT
Po	2	VIN=4.2V,Vpo=300mV, ,RL=4 Ω,NCN MODE2		4		W
		VIN=3.6V,Vpo=300mV, ,RL=4 Ω,NCN MODE2		3.5		
THD+N		VIN=4.2V,Vpo=300mV, ,RL=4 Ω,NCN MODE2		0.42		%
		VIN=3.6V,Vpo=300mV, ,RL=4 Ω,NCN MODE2		0.3		
Tat				40		mS
Trl				270		mS

(Ri=20K Ci=0.1uF RL =4 , f=1KHZ T =25°C, 3 .)



HAA9809

,4 ,AB /D ,5.4W

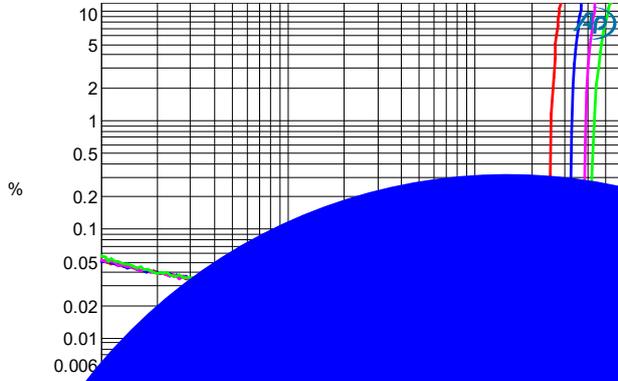
AB (Ri=20K Ci=0.1uF Gain=18.9dB, RL=4 , T =25°C, .)

Symbol	Parameter	Test Conditions	MIN	TYP	MAX	UNIT
Po	AB	THD+N=10%,f=1KHZ,RL=4Ω	VDD=5.0V	2.85		W
			VDD=4.2V	2.0		
			VDD=3.6V	1.5		
		THD+N=1%,f=1KHZ,RL=4Ω	VDD=5.0V	2.3		W
			VDD=4.2V	1.51		
			VDD=3.6V	1.2		
THD+N		VDD=5.0V, Po=1W, RL=4Ω	f=1KHz	0.3		%
		VDD=3.6V, Po=1W, RL=4Ω		0.27		
Gv	AB	Ri = 20KΩ		18.9		dB
PSRR		VDD=5V ±200mVp-p	f=217Hz	-70		dB
SNR		VDD=5.0V,Vorms=1V, GV=18.9dB	f=1KHz	-89		dB
Vn		VDD=5.0V,Input floating with CIN=0.1μF	A-weighting	78		μV
			No A-weighting	113		
Dyn		VDD=5.0V, THD=1%	f=1KHz	-85		dB
Iq		VDD=5.0V	No Load	5.5		mA
		VDD=3.0V		4.2		
Rin		AB		20		K Ω
Rf		AB		373		K Ω
ISD		VIN=0V, VDD=5V		0.1	1	μA
Vos		VIN=0V, VDD=5V		10	30	mV
Tst			VDD=5V	110		mS
OTP		No Load, Junction Temperature	VDD=5.0V	165		°C
OTH				30		

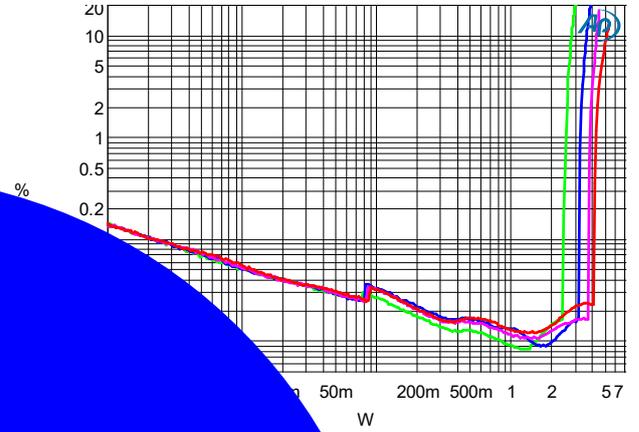
,4 ,AB /D ,5.4W

(D VDD =4.2V, Gain=22.4dB, CIN=0.1uF $R_L=4$, T =25°C, .)

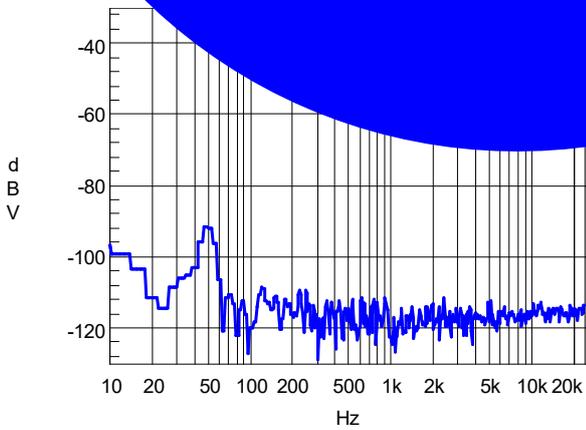
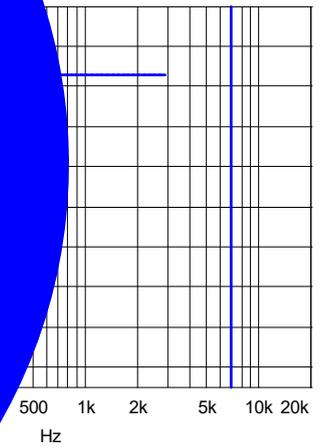
THD+N vs Output Power_NCN OFF



THD+N vs Output Power_NCN ON



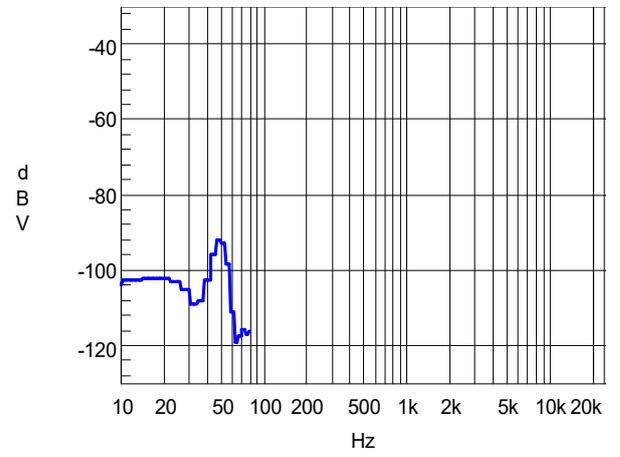
response



,4

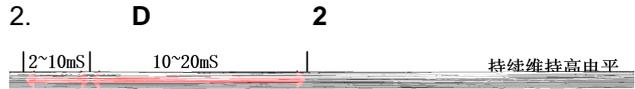
,AB /D

,5.4W





,4 ,AB /D ,5.4W

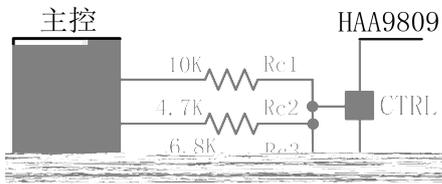


CTRL

CTRL

HAA9809

CTRL	
<0.35V	
1.2V~1.6V	AB
1.7V~2.2V	D
>2.3V	D



IO 3.3V PD

AB/D IO

PD AB/D

PD

AB/D

Rc1

Rc3

CTRL

1.33V (V_{CTRL}=V_{IO}*)

Rc3/ Rc1+ Rc3

AB

PD

AB/D

Rc2 Rc3

Rc3/ Rc2+ Rc3

CTRL

1.95V (V_{CTRL}=V_{IO}*)

CTRL

AB

D

4

AGC

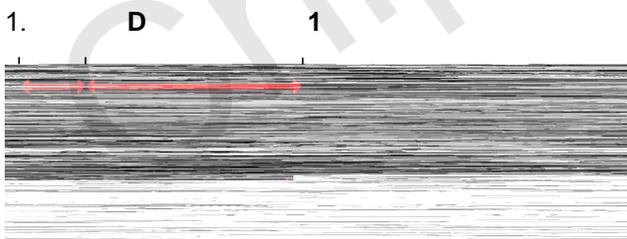
IO
AB/D

(R_{in})

HAA9809

PCB

HAA9809



3个低电平2个高电平
每个宽度5~95uS之间

4个低电平3个高电平
每个宽度5~95uS之间

5个低电平4个高电平

$$A_v = \frac{R_f}{R_{in} + 20K} \left(\frac{V}{V} \right)$$

R_{in}

HAA9809

20KΩ

R_f

D

R_f 560KΩ

AB

R_f 373K

D

24KΩ

$$A_v = 560 / (24+20)$$

12.7

22dB



,4 ,AB /D ,5.4W

(Cin)

HAA9809
PVDD

$$F_c = \frac{1}{2\pi * (R_{in} + 20K) * C_{in}}$$

CPOUT 6.6V

Ci CPOUT Cout
POP PVDD

POP PVDD

VBAT
HAA9809

AGC

Flying Cf

Flying Flying

HAA9809

ESR
4.7uF 16V ESR X7R

HAA9809 4 AGC

X5R

MODE1 MODE2

MODE3 MODE4

CTRL

Cout

4

Attack Time

Cout ESR

Release Time :

470uF ESR

10V

CTRL

MODE1 MODE2 MODE3

MODE4

HAA9809

165

25

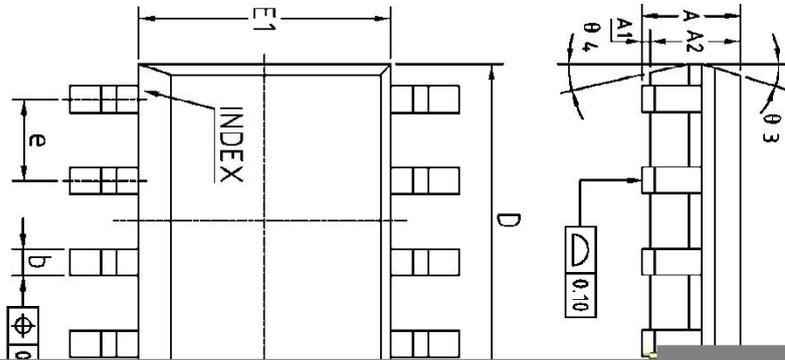
MODE1	40mS	100mS
MODE2	40mS	270mS
MODE3	40mS	125mS
MODE4	4mS	780mS

30



,4 ,AB /D ,5.4W

ESOP8L



ChipSourceTek