

4.7W Anti-Clipping Mono Audio Power Amplifier

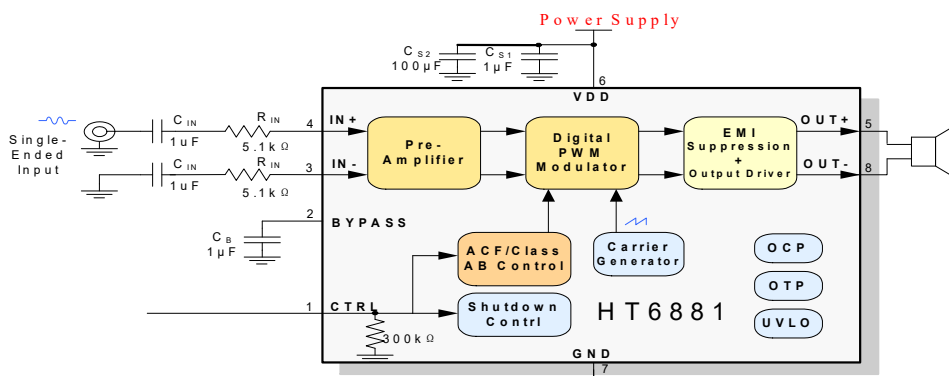
FEATURE

- Anti-Clipping Function, ACF
- Both Class D and Class AB are available
- Excellent EMI Suppression Performance
- Filter-less Modulation, Eliminating Output Filter
- Output Power
 - 1.4W ($V_{DD}=3.6V$, $R_L=4\Omega$, THD+N=10%, Class D)
 - 2.8W ($V_{DD}=5.0V$, $R_L=4\Omega$, THD+N=10%, Class D)
 - 4.7W ($V_{DD}=6.5V$, $R_L=4\Omega$, THD+N=10%, Class D)
 - 2.5W ($V_{DD}=5.0V$, $R_L=4\Omega$, THD+N=10%, Class AB)
- High SNR: 95dB ($V_{DD} = 6.5V$, $A_v = 24dB$, THD+N = 1%)
- Low quiescent current (Class D)
 - 2.65mA ($V_{DD}=3.6V$)
 - 3.25mA ($V_{DD}=5.0V$)
 - 4.00mA ($V_{DD}=6.5V$)
- Low shutdown current: $< 1\mu A$
- Over Current Protection and Thermal Protection with Auto Recovery
- Low voltage malfunction prevention function included
- Pb-Free Packages, DFN8L, SOP8L and SOP8L-PP

APPLICATIONS

- Portable Speakers
- Smart Speakers
- iPhone/iPod/MP3 docking
- GPS
- Tablet PC/Note Book
- PMP/MP4/MP5
- Portable Gamers
- Smart phones

TYPICAL APPLICATION



GENERAL DESCRIPTION

HT6881 is a Low-EMI, Anti-Clipping, filter-less mono Class D audio power amplifier IC with maximum output power of 4.7W (6.5V power supply, 4Ω load, 10% THD+N). It has a high efficiency with class AB amplifier performance.

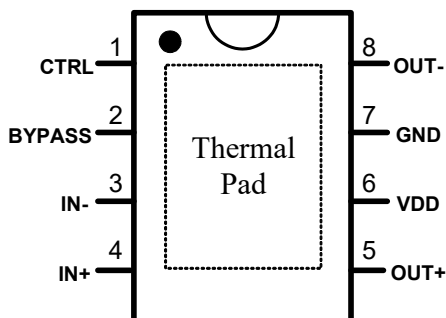
HT6881 features Anti-Clipping Function (ACF) which detects and suppresses output signal clippings due to the over level inputs of music or voice signals. The ACF function also can adapt the output clippings caused by power supply voltage down in battery applications. It improves acoustical quality considerably, gives great listening enjoyment, and prevents speaker from overload damaging.

HT6881 has excellent EMI radiation suppression characteristics. The radiation level is well below FCC Part15 Class B standards without any additive design. It keeps from interference with other EMI sensitive circuits, simplifies system design and lowers system cost.

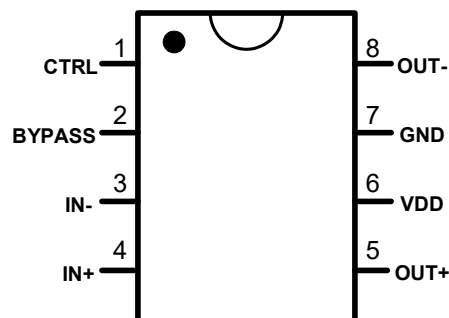
Class AB amplifier mode is also available for HT6881. Once the EMI Interference from class D becomes an annoying problem, HT6881 can be changed into Class AB mode.

HT6881 has a filter-less modulation circuit which directly drives speakers while realizes low distortion and low noise characteristics. Thanks to filter-less, circuit design with fewer external parts can be made in portable applications.

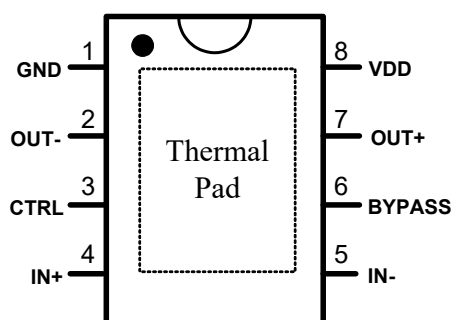
HT6881 has the independent Shutdown function which can minimize the power consumption at standby function. As for protection function, over current protection function for speaker output terminals, over temperature protection function, and low supply voltage malfunction preventing function are also prepared.

■ TERMINAL CONFIGURATION


Top View
HT6881D2SPE (SOP8L-PP)



Top View
HT6881D2SPN (SOP8L)



Top View
HT6881D2SDE (DFN8L)

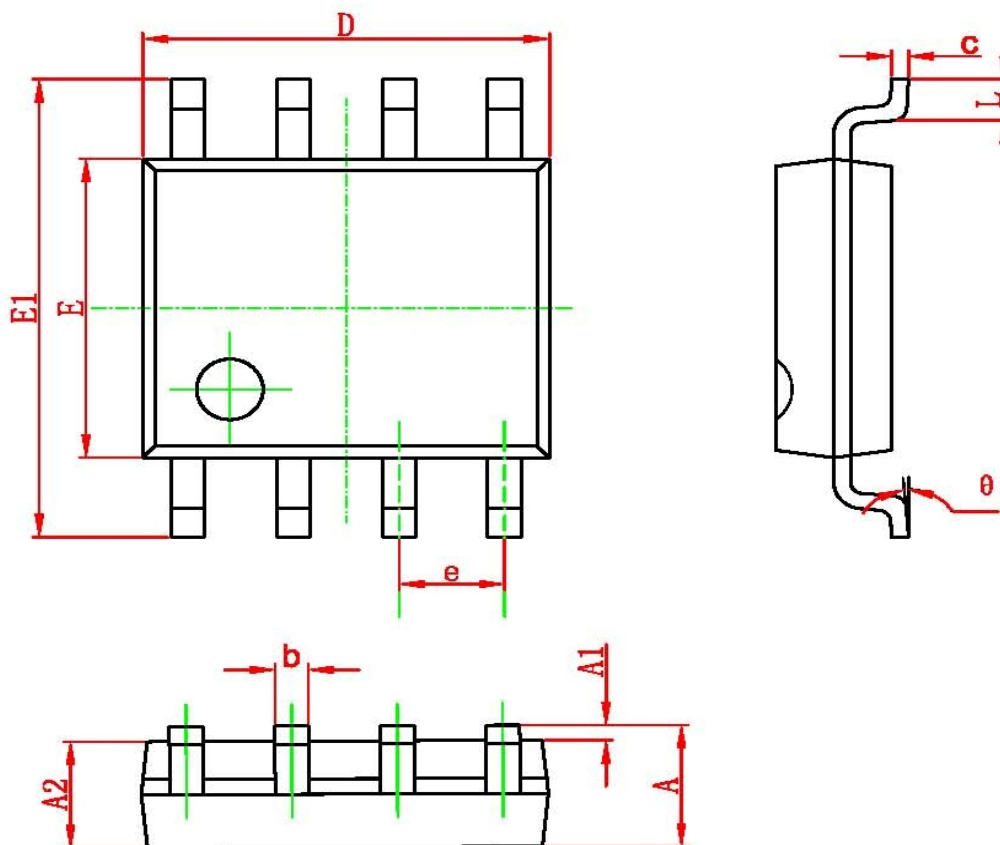
■ TERMINAL FUNCTION

Terminal No.		Name	I/O*1	ESD composition	Function
DFN8L	SOP8L(-PP)				
3	1	CTRL	I	PN	Mode control terminal
6	2	BYPASS	A	PN	Analog reference terminal
5	3	IN-	A	PN	Negative input terminal (differential -)
4	4	IN+	A	PN	Positive input terminal (differential +)
7	5	OUT+	O	-	Positive output terminal (differential +)
8	6	VDD	Power	-	Power supply
1	7	GND	GND	-	GND
2	8	OUT-	O	-	Negative output terminal (differential -)
Thermal Pad		/	/	/	Connecting to GND plane

*1 I: Input terminal O: Output terminal A: Analog terminal

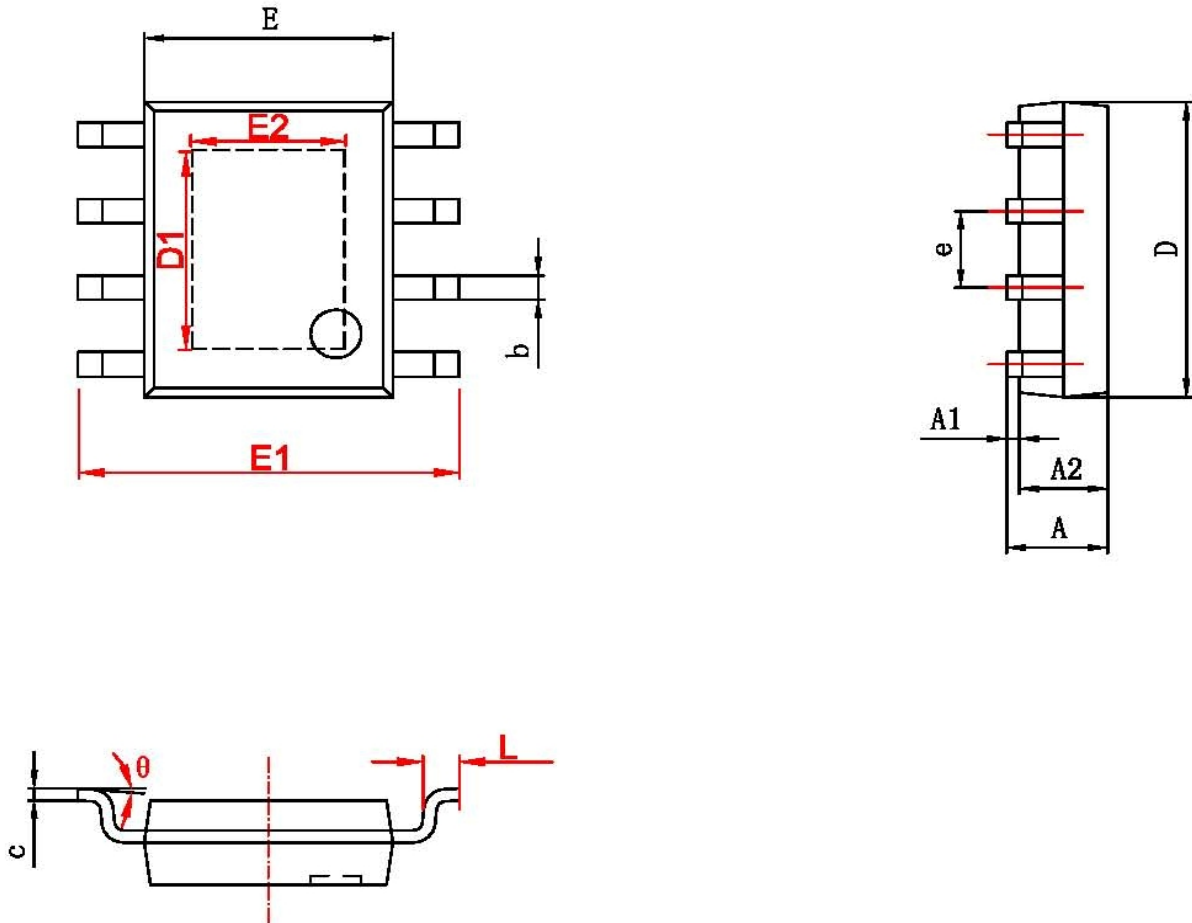
■ ORDERING INFORMATION

Part Number	Package Type	Marking	Operating Temperature Range	Shipping Package/MOQ
HT6881D2SPET	SOP8L-PP	HT6881SP	-40℃~85℃	Tube/100PCS
HT6881D2SPER	SOP8L-PP	HT6881SP	-40℃~85℃	Tape and Reel/2500PCS
HT6881D2SPNT	SOP8L	HT6881LSP	-40℃~85℃	Tube/100PCS
HT6881D2SPNR	SOP8L	HT6881LSP	-40℃~85℃	Tape and Reel/2500PCS
HT6881D2SDER	DFN8L-PP	HT6881SD	-40℃~85℃	Tape and Reel/3000PCS

PACKAGE OUTLINE
● SOP8L (HT6881D2SPN)
SOP8 PACKAGE OUTLINE DIMENSIONS


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
theta	0°	8°	0°	8°

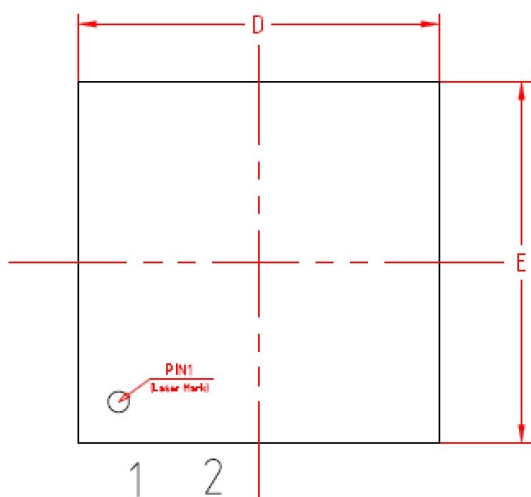
● SOP8L-PP (HT6881D2SPE)

SOP8-PP(EXP PAD) PACKAGE OUTLINE DIMENSIONS


字符	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.050	0.150	0.002	0.006
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.200
D1	3.202	3.402	0.126	0.134
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
E2	2.313	2.513	0.091	0.099
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

● DFN8L (HT6881D2SDE)
TOP VIEW

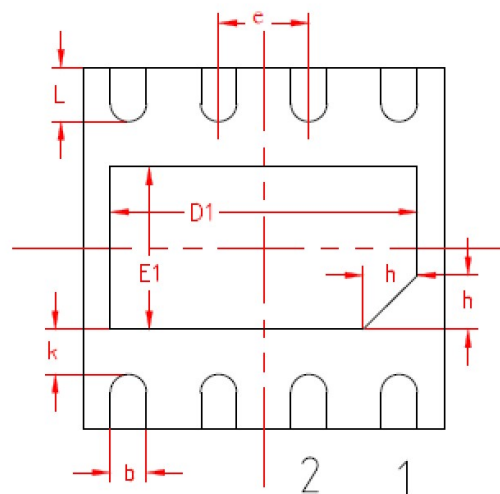
正视图


SIDE VIEW

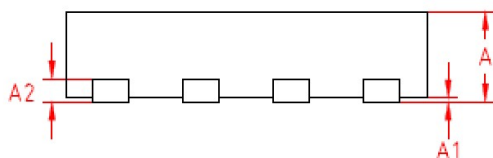
侧视图


BOTTOM VIEW

背视图


SIDE VIEW

侧视图



机械尺寸/mm

字符	最小值	典型值	最大值
A	0.45	0.50	0.55
A1	-	0.02	0.05
A2	0.127 REF		
b	0.15	0.20	0.25
D	1.90	2.00	2.10
D1	1.65	1.7	1.75
E	1.90	2.00	2.10
E1	0.85	0.9	0.95
e	0.500 BSC		
k	0.20	0.25	0.30
L	0.25	0.30	0.40
h	0.25	0.30	0.35

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