

## 2.0W Audio Power Amplifier With Headphone Sense

## CE0032A Series

### ■ INTRODUCTION

The CE0032A is ideal for portable audio application which normally require internal speaker. It is capable of delivering 1.6 watt of continuous average power to a 4Ω BTL load with less than 1% distortion (THD+N) from a 5V power system.

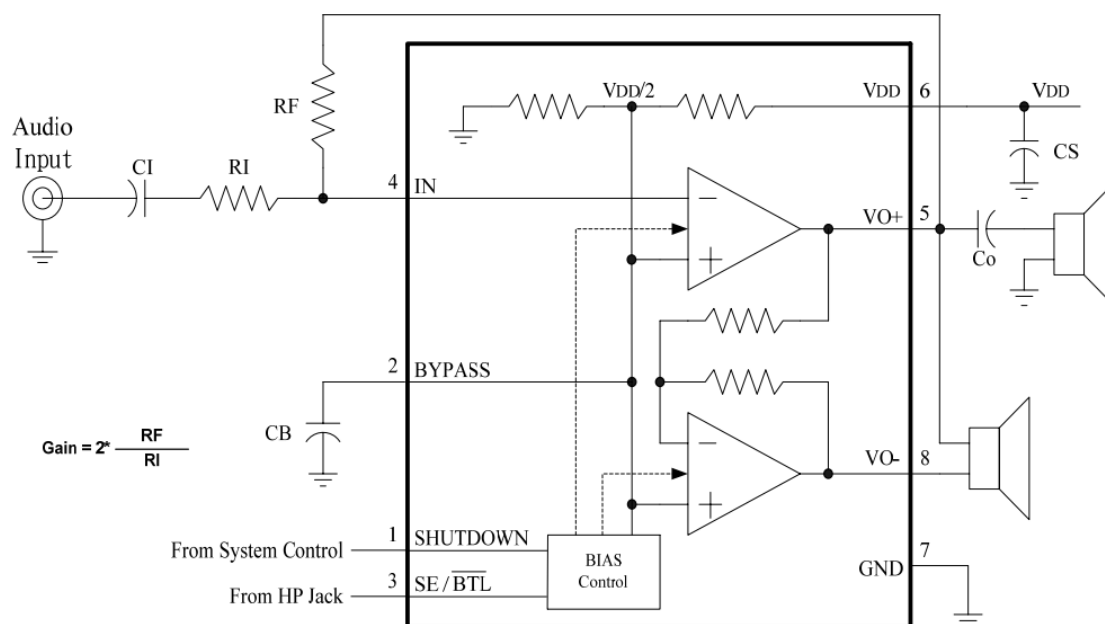
### ■ FEATURES

- Wide operation Range 2.0~6.8V
- BTL or SE modes
- Low Distortion :THD+N=0.15%(Typ.)  
(For VDD=5.0V,RL=4.0Ω ,Pout=0.63W)
- Low Distortion :THD+N=1%(Typ.)  
(For VDD=5.0V,RL=4.0Ω ,Pout=1.6W)
- Low Shutdown Current:1.0uA
- Minimize the turn-on and turn-off pop noise
- Thermal Shutdown Protection
- Over Current Protection
- External gain configuration capability
- Unity-gain stable

### ■ APPLICATIONS

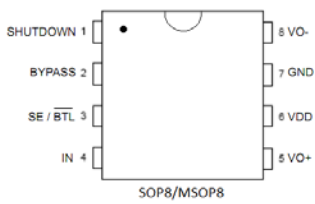
- Toys
- Desk mini sound panel
- Portable audio devices

### ■ BLOCK DIAGRAMS



## ■ PIN CONFIGURATION

### CE0032A Series (SOP8/MSOP8)



PIN NO.		FUNCTION
1	SHUTDOWN	Shutdown mode control signal input. Active High.
2	BYPASS	BYPASS is internal mid-supply bias
3	SE/BTL	Low :BTL mode High:SE mode
4	IN	Audio input
5	VO+	Output +(for BTL & SE mode)
6	VDD	Power VDD
7	GND	Power Ground
8	VO-	VO-(only for BTL mode)

## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNITS
Power supply voltage		$V_{DD}$	$V_{SS}-0.3 \sim V_{SS}+8$	V
Output voltage		$V_{OUT}$	$V_{SS}-0.3 \sim V_{SS}+8$	V
Power dissipation	MSOP8	PD	500	mW
	SOP8		500	mW
Operating ambient temperature		$T_{opr}$	-40 ~ +85	°C
Storage temperature		$T_{stg}$	-40 ~ +125	°C
Soldering Temperature & Time		$T_{solder}$	260°C, 10s	

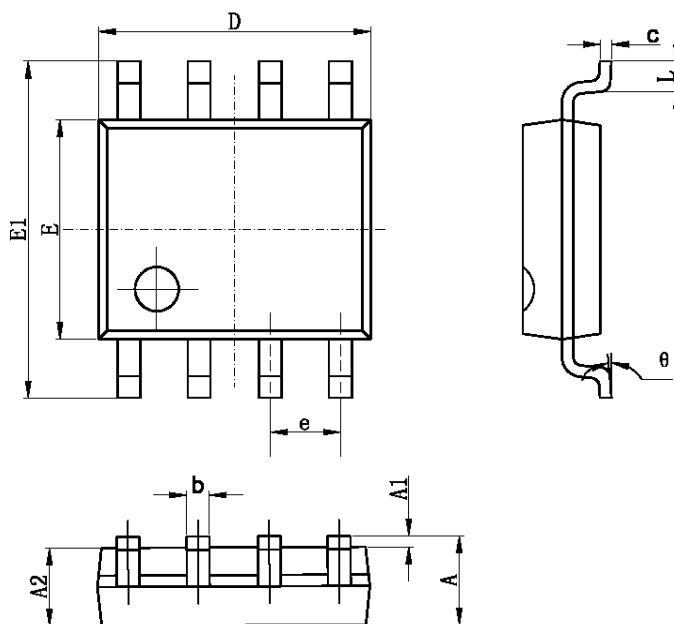
## ■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Operation Voltage	VDD		2.0		6.8	V
Shutdown Current	I <sub>off</sub>	SHUTDOWN=VDD			1.0	uA
Operating Current	I <sub>ss</sub>	VDD=5V,SHUTDOWN=GND,No Load		3.0		mA
BYPASS Voltage	VBYPASS	VDD=5V,SHUTDOWN=VDD		VDD/2		V
Total Harmonic Distortion + Noise	THD+N	VDD=5.0V,RL=4Ω,POUT=0.63W		0.15		%
		VDD=5.0V,RL=8Ω,POUT=0.63W		0.15		%
Output Power	P <sub>o</sub>	VDD=5.0V,THD+N=1%,f=1KHz& RL=4Ω		1600		mW
		VDD=5.0V,THD+N=1%,f=1KHz& RL=8Ω		1150		mW
Output Offset Voltage	VOS	VIN=0V		12		mV
Power Rejection Ratio	PSRR	f=1KHz		70		dB
Enable Time	TON	VDD=5V,SE=GND,CB=1uF		70		mS
		VDD=5V,SE=VDD,CB=1uF		250		mS
Shutdown Time	TOFF	VDD=5V,SE=GND,CB=1uF		70		mS
		VDD=5V,SE=VDD,CB=1uF		250		mS
Current Limitation	ILMT	VDD=5V,CI=0.47uF,CB=1.0uF		850		mA

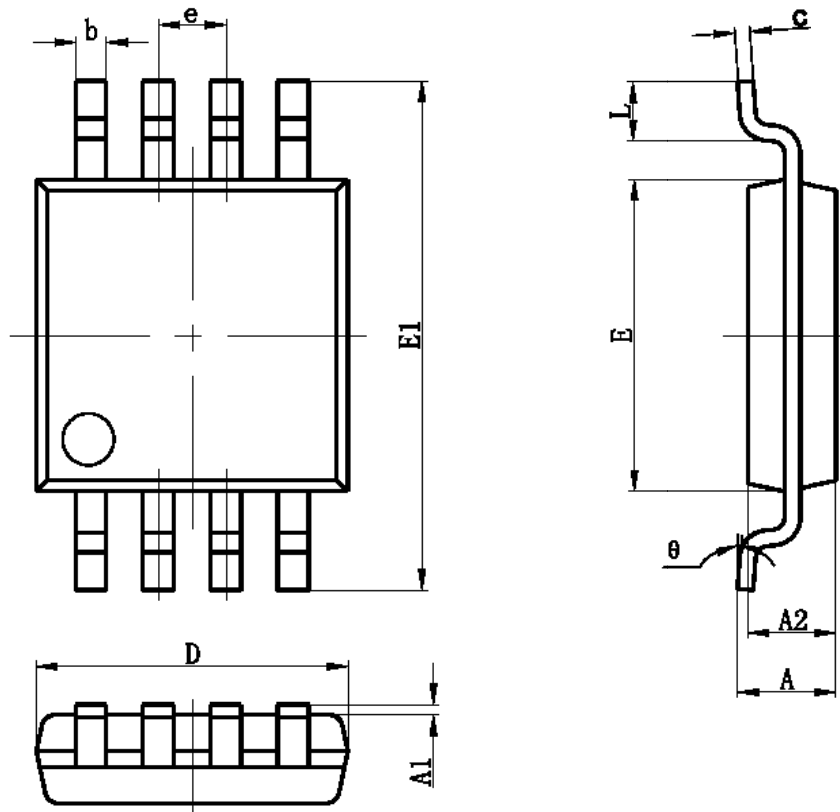
■ Package information

- SOP8



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
θ	0°	8°	0°	8°

● MSOP8 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.820	1.100	0.032	0.043
A1	0.020	0.150	0.001	0.006
A2	0.750	0.950	0.030	0.037
b	0.250	0.380	0.010	0.015
c	0.090	0.230	0.004	0.009
D	2.900	3.100	0.114	0.122
e	0.650(BSC)		0.026(BSC)	
E	2.900	3.100	0.114	0.122
E1	4.750	5.050	0.187	0.199
L	0.400	0.800	0.016	0.031
θ	0°	6°	0°	6°

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