

### General Description

The ELN4871 is a bridge-connected audio power amplifier capable of delivering typically 3W of continuous average power to an 3Ω load with 10% (THD) from a 5V power supply. Boomer audio power amplifiers were designed specifically to provide high quality output power with a minimal amount of external components. Since the ELN4871 does not require output coupling capacitors, bootstrap capacitors, or snubber networks, it is optionally suited for low-power portable systems. The ELN4871 features an externally controlled, low-power consumption shutdown mode, as well as an internal thermal shutdown protection mechanism. The unity-gain stable ELN4871 can be configured by external gain-setting resistors.

### Features

- ◆ No output coupling capacitors, bootstrap capacitors, or snubber circuits are necessary
- ◆ Small Outline packaging
- ◆ Unity-gain stable
- ◆ External gain configuration capability
- ◆ Thermal shutdown protection

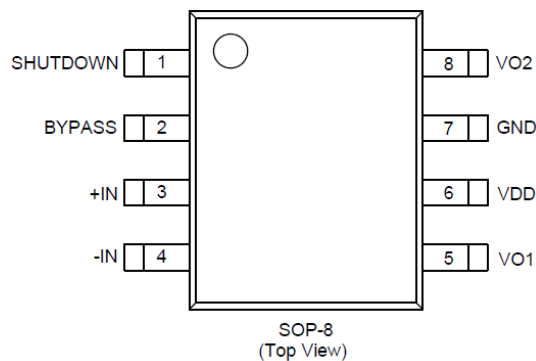
### Applications

- ◆ Portable Computers
- ◆ Desktop Computers
- ◆ Low Voltage Audio Systems

### Key Specifications

- ◆ Power Output @ 10% THD+N & VDD=5V 1KHZ
  - RL=3Ω 3W (TYP)
  - RL=4Ω 2.5W (TYP)
- ◆ THD+N @ 1KHZ 1W 8Ω 0.5%(MAX)
- ◆ Shutdown current 0.1uA(TYP.)
- ◆ Supply voltage 2.0V~6.0V

### Pin Configuration



### Ordering Information

ECL4871 NN XX R

↘ R : Tape & Reel  
 ↘ Package Type :  
 M1 : SOP8  
 MH : ESOP8

### Operating Ratings

Temperature Range

◆  $T_{MIN} \leq TA \leq T_{MAX}$  -----  $-40^{\circ}\text{C} \leq TA \leq 85^{\circ}\text{C}$

◆ Supply Voltage -----  $2.0\text{V} \leq V_{DD} \leq 6.0\text{V}$

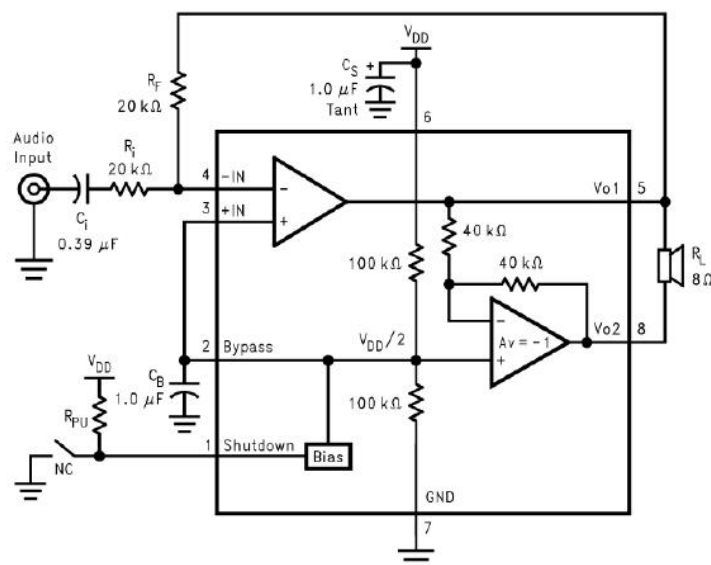
### Pin Function Description

Pin Name	Pin Number	I/O	Function Description
SHUTDOWN	1	I	Shutdown terminal (active high logic)
BYPASS	2		Adding a bypass capacitor
+IN	3	I	Channel positive input
-IN	4	I	Channel negative input
VO1	5	O	Channel output 1
VDD	6		Power supply
GND	7		High-current ground
VO2	8	O	Channel output 2

### Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Supply Voltage	VDD	-0.3—6.5	V
Input Voltage	VIN	-0.3—VDD+0.3	V
Power Output	—	Internal limit	
Junction Temperature	—	-150	$^{\circ}\text{C}$
Storage Temperature	Tstg	-65—150	$^{\circ}\text{C}$
ESD Susceptibility	-	8000	V

### Function Block Diagram





# 3W Audio Power Amplifier With Shutdown Mode

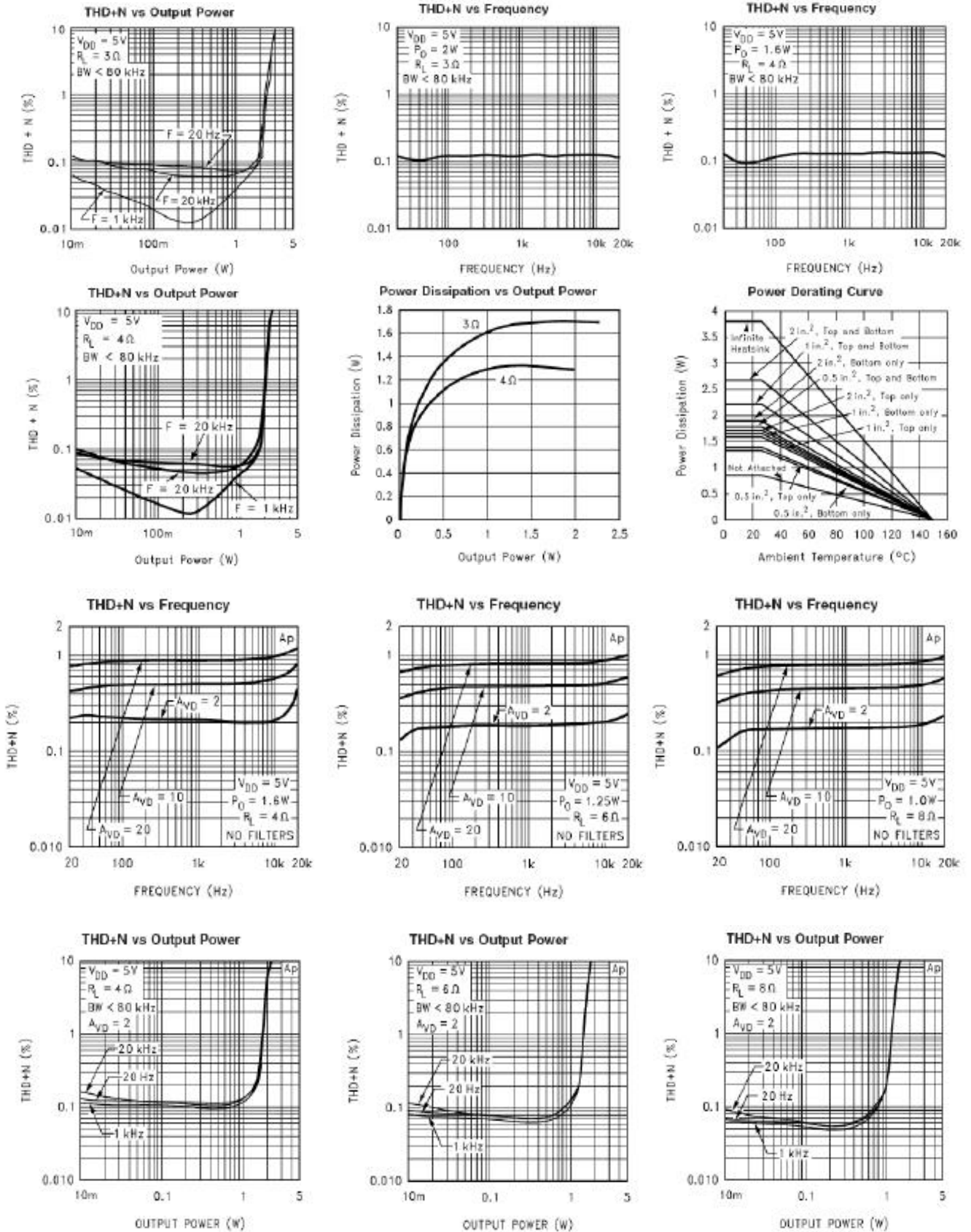
ECL4871

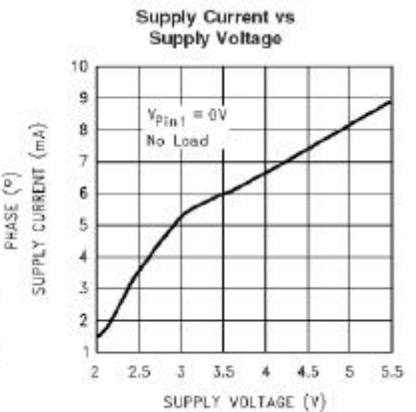
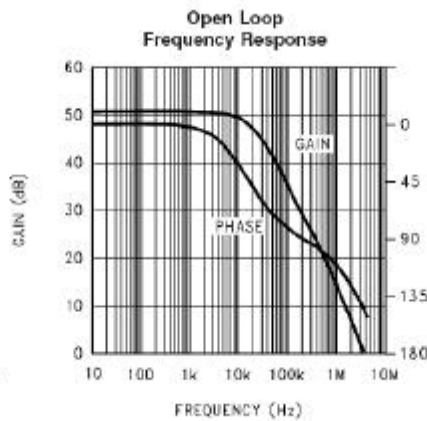
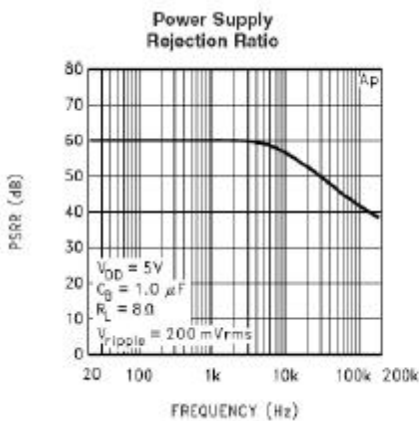
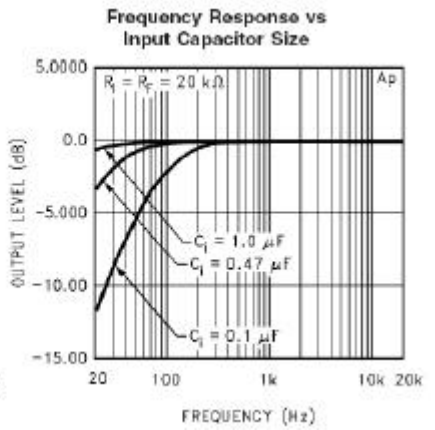
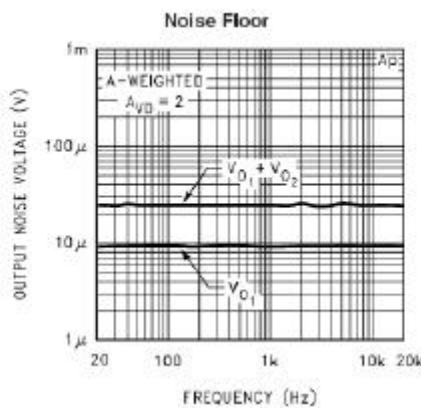
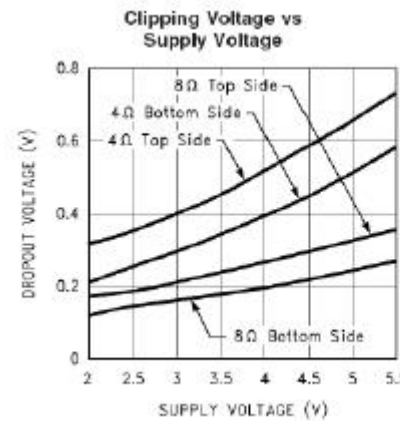
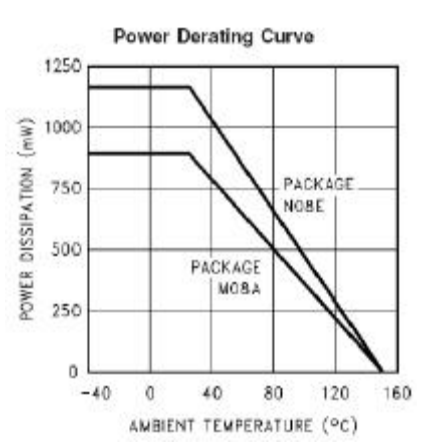
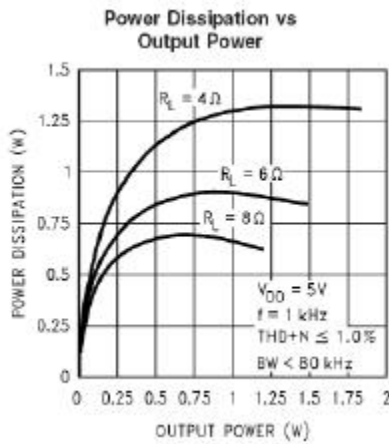
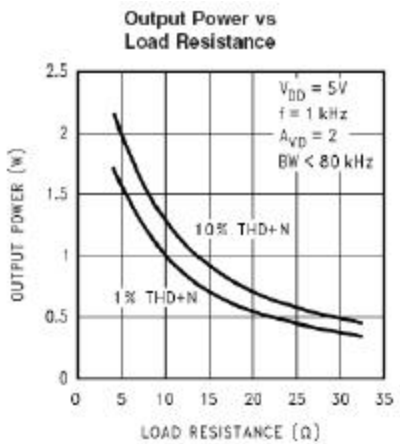
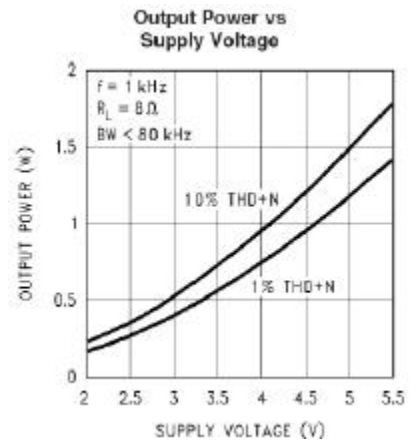
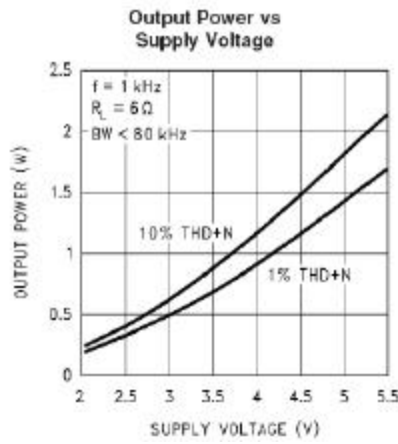
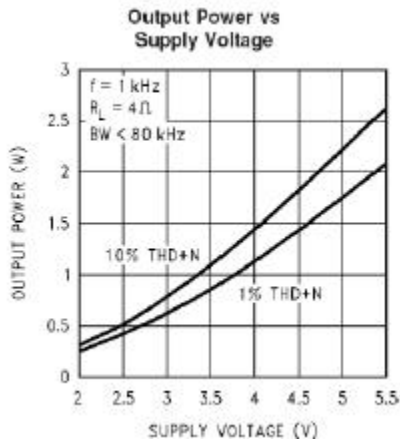
## Electrical Characteristics

(VDD = 5V Unless otherwise specified. Limits apply for TA = 25°C.)

Symbol	Parameters	Test Conditions	Min.	Typ.	Max.	Unit
VDD	Supply voltage		2.0		6.0	V
IDD	Quiescent Power Supply Current	VIN = 0V, IO = 0A		6.5	10	mA
ISD	Shutdown Current	VSHUTDOWN = VDD		0.1	2	μA
PO	Output Power	THD+N = 1%; f = 1 kHz RL=3Ω RL=4Ω RL=8Ω		2.38 2 1.2		W
		THD+N = 10%; f = 1 kHz RL=3Ω RL=4Ω RL=8Ω		3 2.5 1.5		W
THD+N	Total Harmonic Distortion+Noise	AVD=2; 20Hz<=f<=20kHz RL=4Ω,PO=1.6W RL=8Ω,PO=1W		0.13 0.25		%

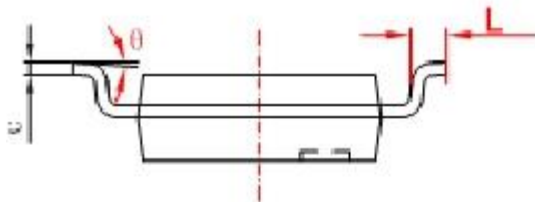
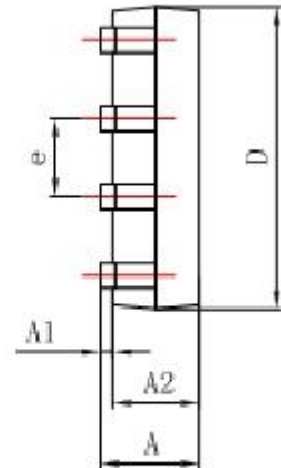
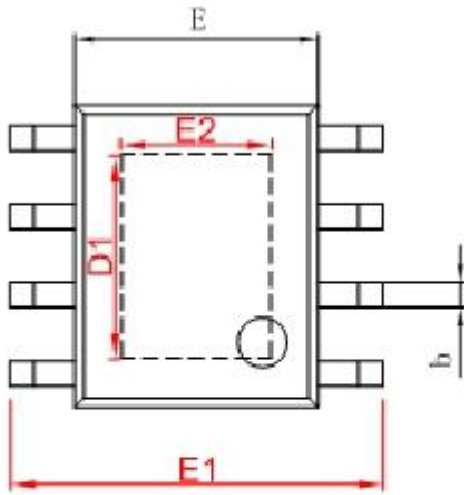
### Typical Performance Characteristics





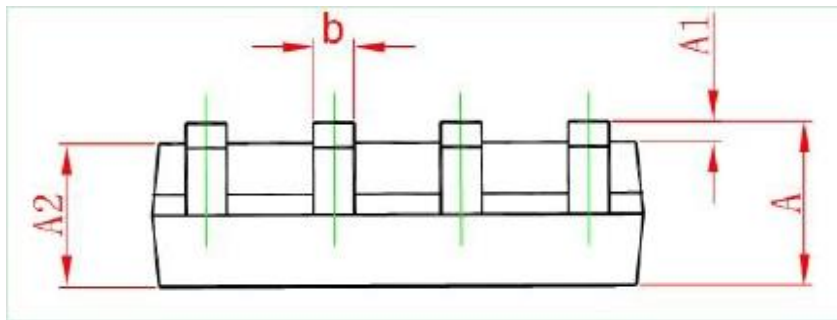
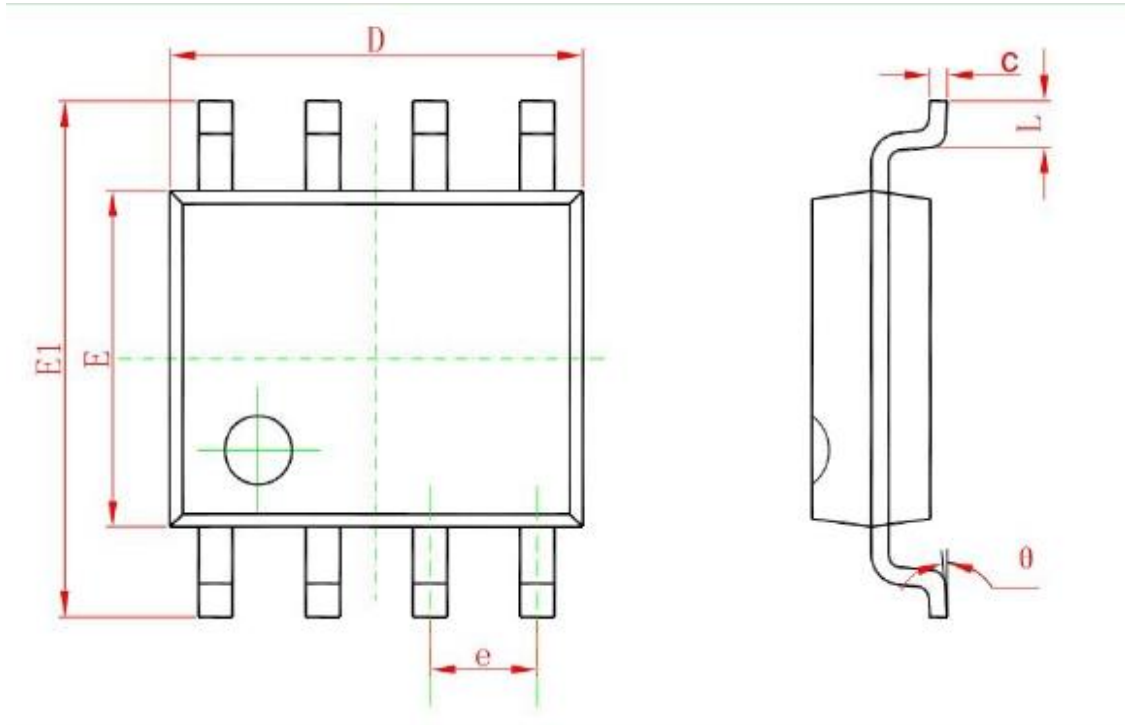
### Package Information

ESOP8



字符	Dimension In Millimeters	
	Min	Max
A	1.500	1.700
A1	0.050	0.150
A2	1.350	1.550
b	0.300	0.500
c	0.190	0.250
D	4.800	5.000
D1	3.200	3.400
E	3.840	4.040
E1	5.900	6.100
E2	2.100	2.300
c	1.27 (BSC)	
L	0.520	0.720
$\theta$	0°	8°

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
$\theta$	0°	8°	0°	8°