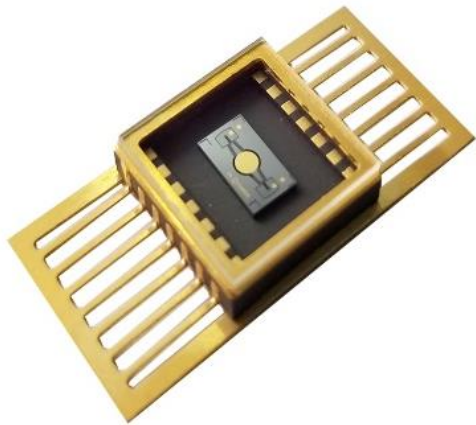




**Xi'an ZhiSENSOR
Technologies Co., Ltd.**

**C1100 Datasheet
V1.0**



C1100

MEMS mirror

Introduction

C1100 is a one-axis electrostatic driven resonant MEMS mirror with characteristics of high reliability, small size, and lightweight. The surface of the chip is covered with Au, which reflectivity for infrared light (wavelength $\geq 800\text{nm}$) over 95%.

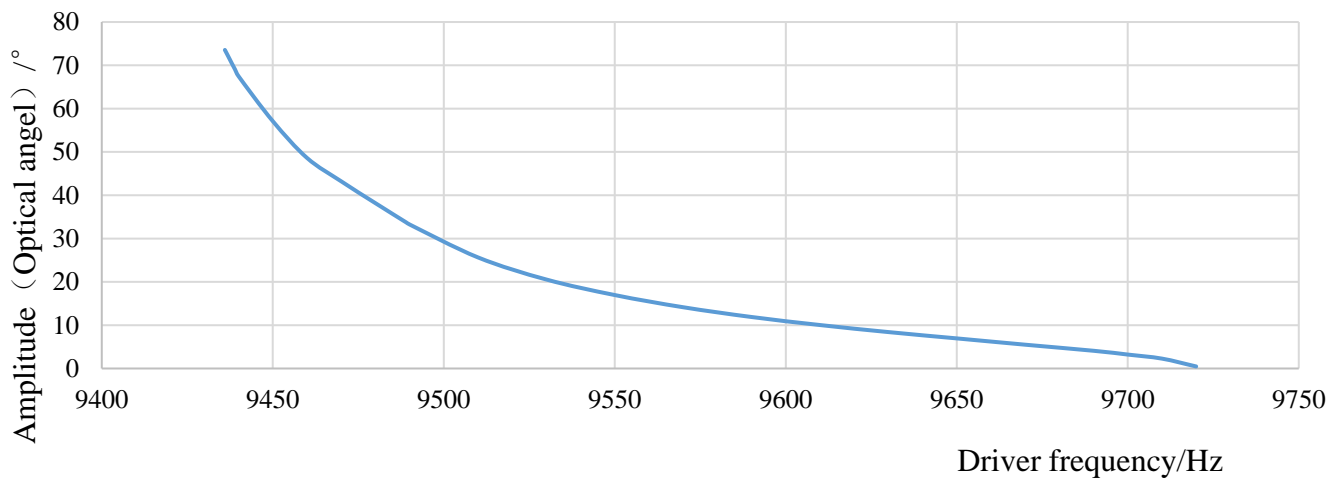
Features	Applications
1 Electrostatic driven	1 Laser projectors
2 Covered with Au	2 AR/VR
3 Low consumption	3 Machine vision
4 Small size	4 Lidar
5 High reliability
.....	

MEMS Mirror Parameters

Item	Value	Unit
Diameter	1.3	mm
Resonant frequency	$5.8 \pm 10\%$	KHz
Driven voltage	70~90s	V
Storage temperature	-40~85	°C
Operating temperature	0~70	°C
Operating environment	GB/T16292-1996	

The Resonant Frequency of C1100

Amplitude frequency response of C1100



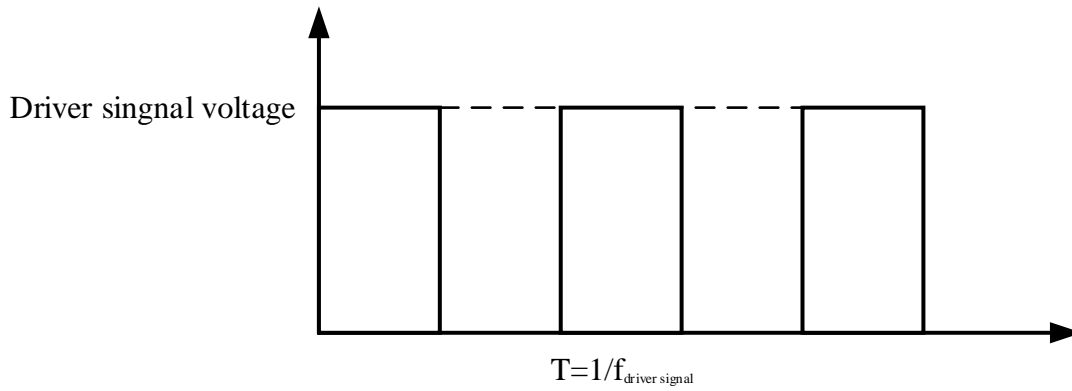
Note: The “Driver frequency” in the figure is twice the resonant frequency.

MEMS Mirror Drive

C1100 working in resonant state, and the torsional angle is related to the frequency, users can reference the amplitude frequency response for more information. Users must make sure the frequency of drive signal is between $f_2/2$ and $f_3/2$ (shown at the frequency response curve, and the value are list as below) in order to stabilize the MEMS mirror. Then change the frequency of the drive signal to the desired torsional angle (Keep in mind that the frequency of the drive signal is twice the resonant frequency).

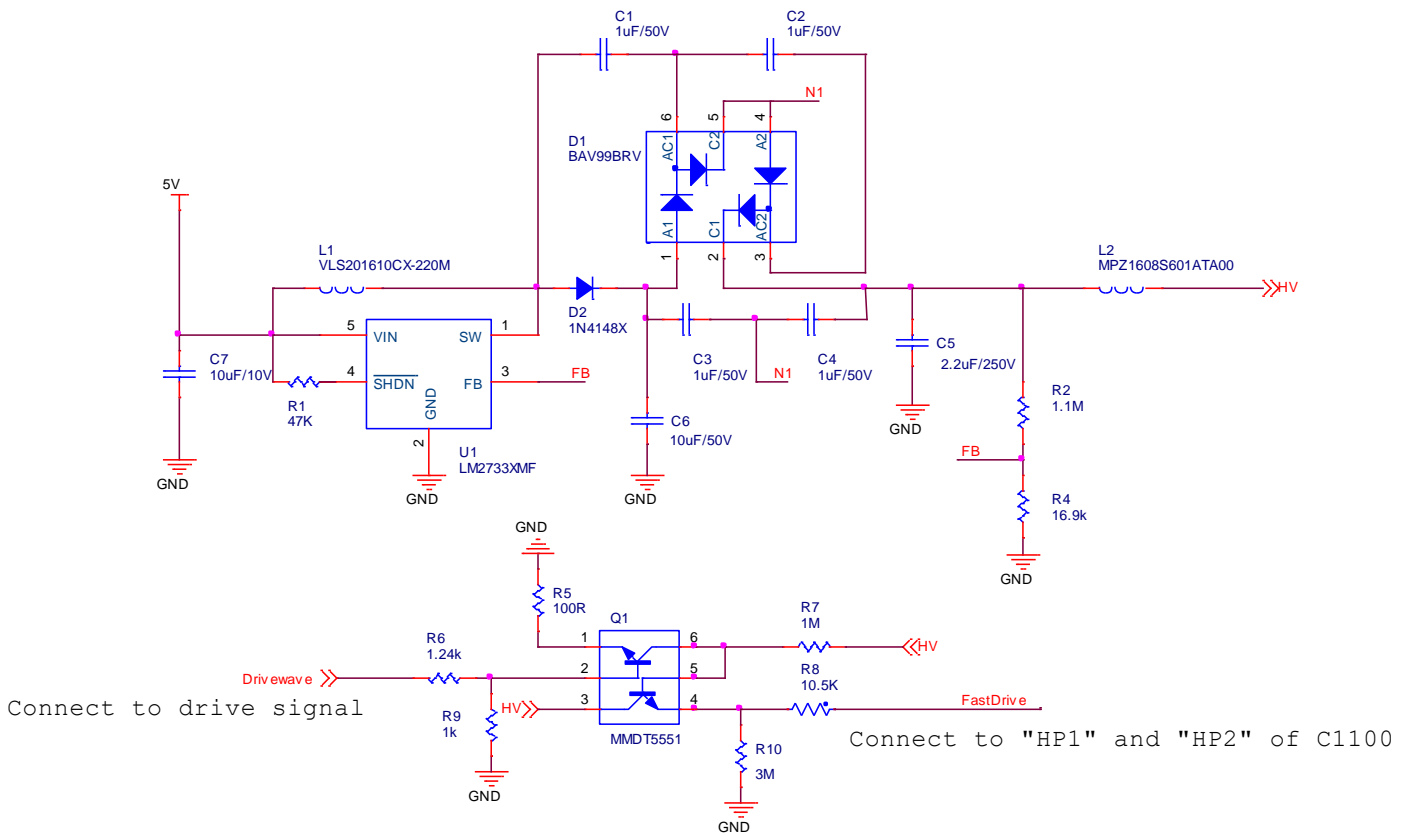
Item		Working frequece	Corresponding drive signal frequency	Unit
C1100	f1	4718	9436	Hz
	f2	4744.5	9489	Hz
	f3	4860	9720	Hz

Note: f1 is the low cutoff frequency.



The driven voltage signals, added to the pins of C1100, are square wave as shown in the figure, which duty ratio are 50%. Keep in mind that the frequency of the drive signal is twice the resonant frequency.

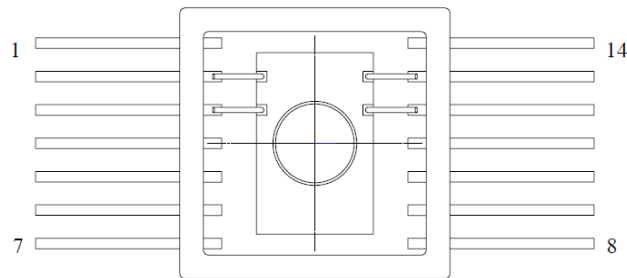
The following is the reference drive circuit of C1100.



Note: 1. HV is the driving voltages of the chip;

2. The reference circuit only includes boost circuit and switch circuit, the square wave signal are given by users.

Pin Configuration and Functions

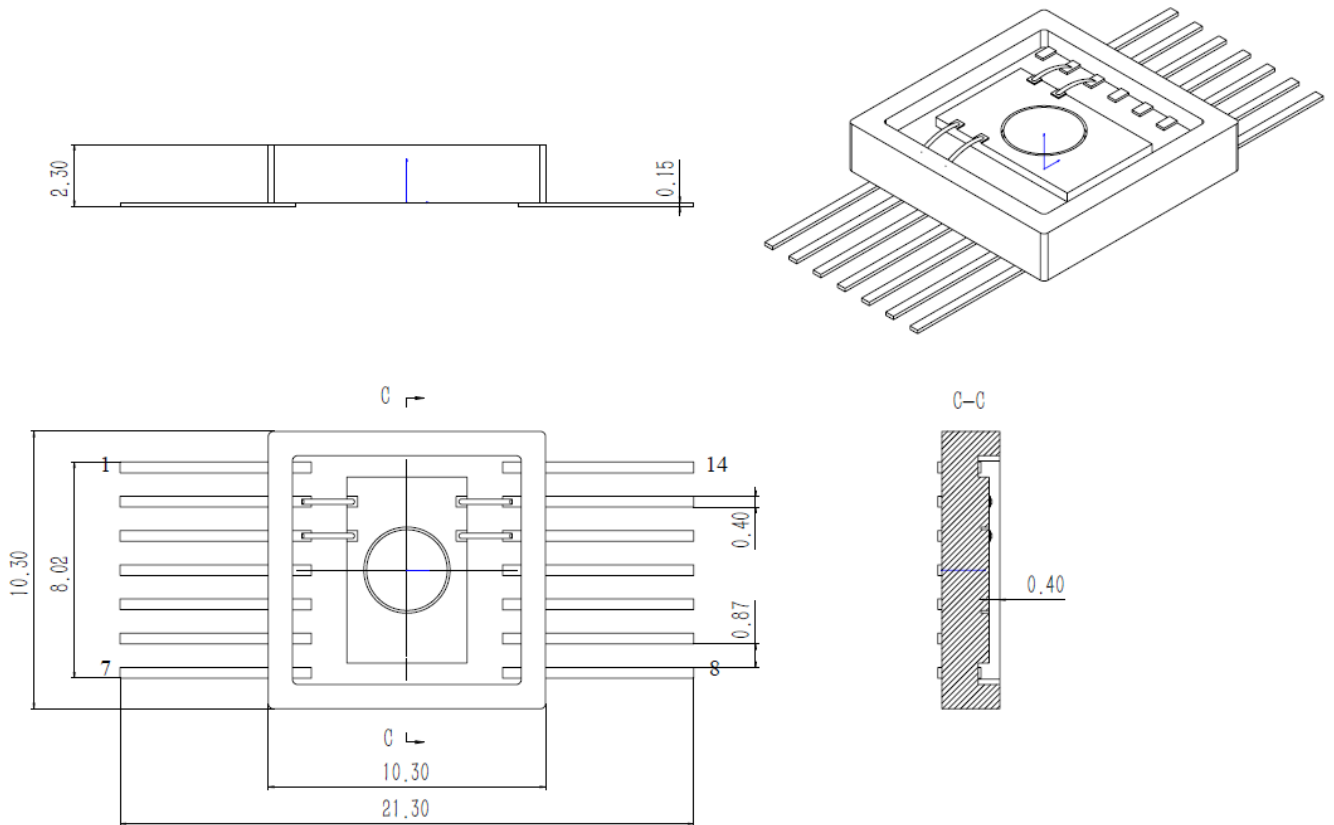


Pins of C1100

Functions of pins

NO.	Function	Description	Note
1	-	-	-
2	GND	-	-
3	HP1	Connect to "FastDrive"	See reference drive circuit of C1100
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-
11	-	-	-
12	HP2	Connect to "FastDrive"	See reference drive circuit of C1100
13	GND	-	-
14	-	-	-

Dimension of C1100



Unit: mm

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