

LC898122XA



ON Semiconductor®

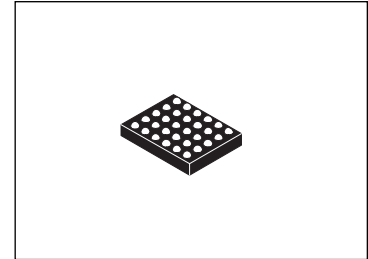
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CMOS LSI

Optical Image Stabilization (OIS) / Auto Focus (AF) Controller & Driver

Overview

LC898122XA is a system LSI (WLP type) integrating a digital signal processing function for Optical Image Stabilization (OIS) / Auto Focus (AF) control and driver.



WLCSP30, 2.59x1.99

Function

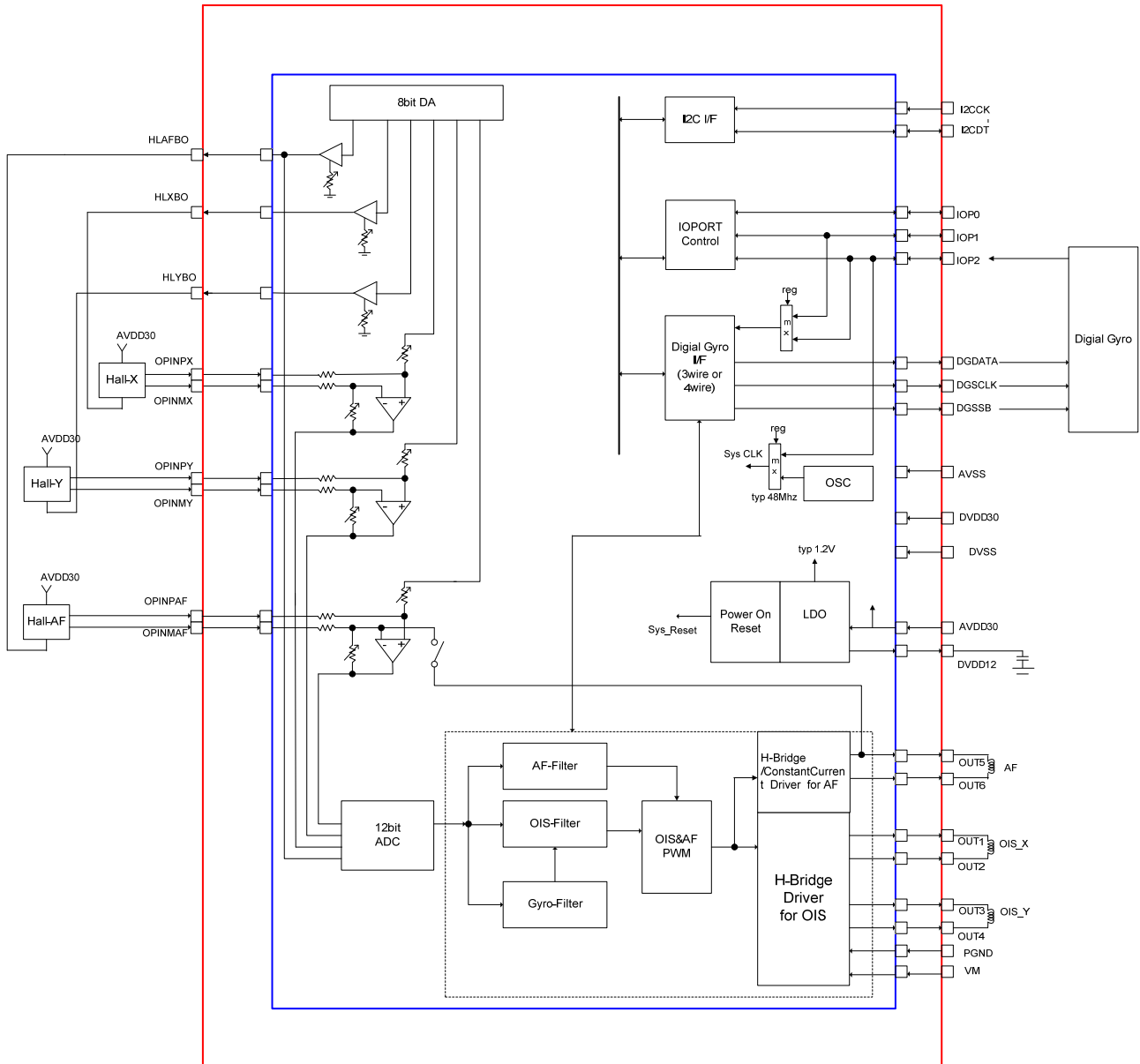
- Digital signal processing
 - Built-in digital servo circuit
 - Built-in Gyro filter
 - AD converter
 - 12bit
 - Input 3ch
 - Equipped with a sample-hold circuit
 - DA converter
 - 8bit
 - Output 3ch
 - Built-in Serial I/F circuit (2-wire I²C-Bus)
 - Built-in Hall Bias circuit
 - Built-in Hall Amp
(Gain of Op-amp :
×6, ×12, ×50, ×75, ×100, ×150, ×200)
 - Built-in OSC (Oscillator)
 - Typ. 48MHz
 - Built-in LDO (Low Drop-Out regulator)
 - Digital Gyro I/F for the companies (SPI Bus)
(Please refer for the details)
- Motor Driver
 - OIS control & drive H bridge ×2ch, I_{Omax} : 220mA
 - AF control & driver H bridge/constant current ×1ch : 150mA
- Package
 - WLCSP30, 2.59mm × 1.99mm,
thickness Max. 0.45mm, with B/C
 - Pb-Free / Halogen Free
- Power Supply Voltage
 - AD/DA/VGA/LDO/OSC : AVDD30 = 2.6V to 3.6V
 - Digital I/O : DVDD30 = 2.6V to 3.6V
 - Driver : VM = 2.6V to 3.6V
 - Core Logic : Generation in LDO
DVDD12 = typ 1.2V output

* I²C Bus is a trademark of Philips Corporation.

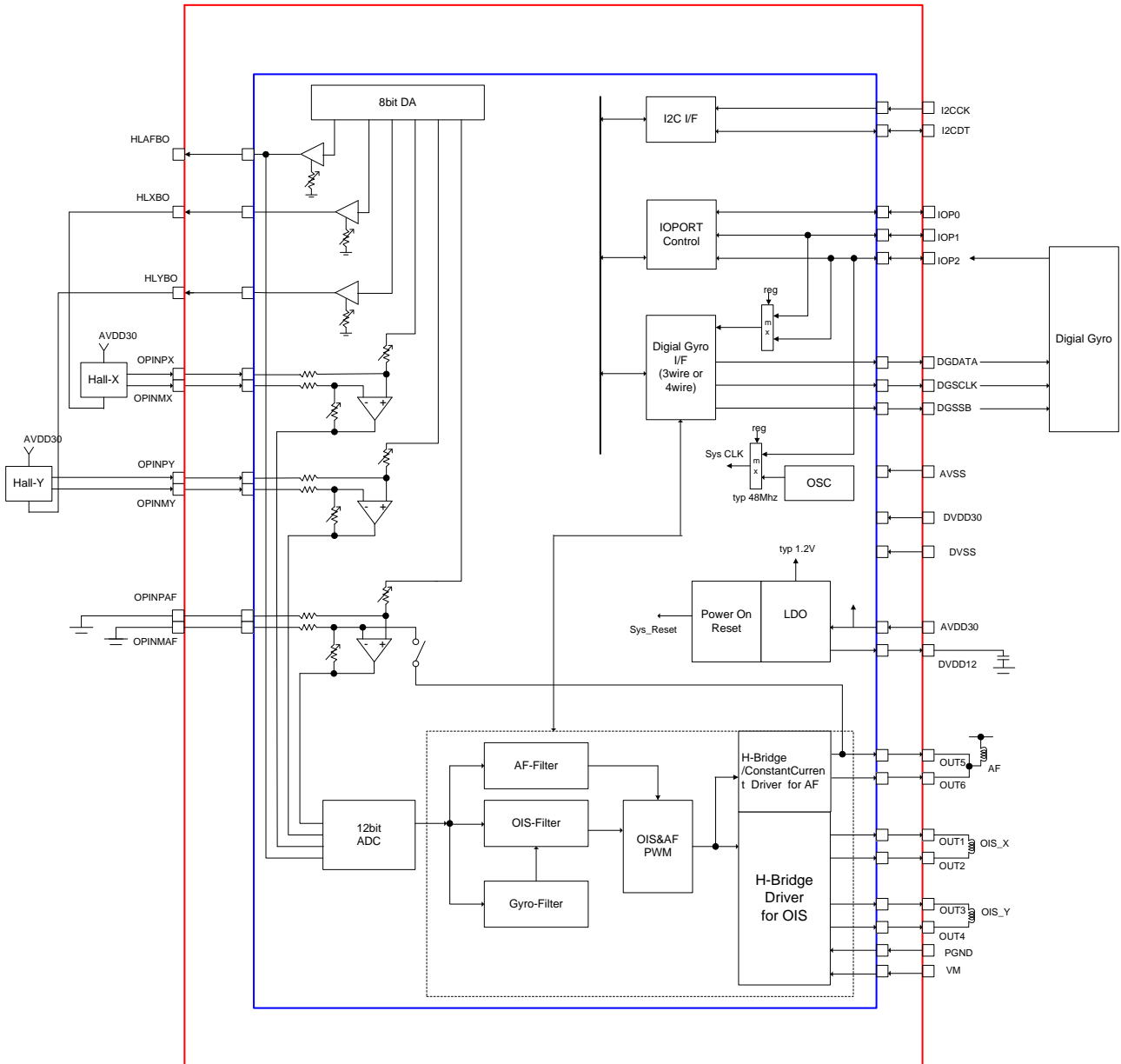
ORDERING INFORMATION

See detailed ordering and shipping information on page 7 of this data sheet.

Block Diagram



Example of wiring diagram [Hall, Closed AF] in LC898122XA

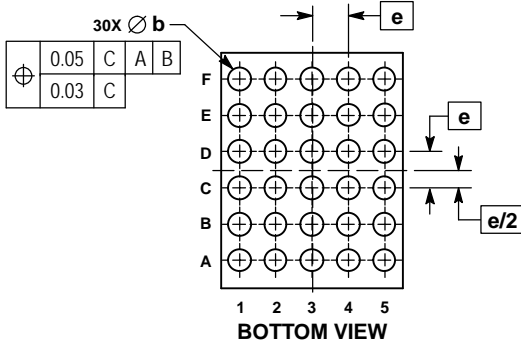
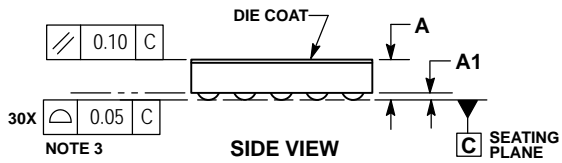
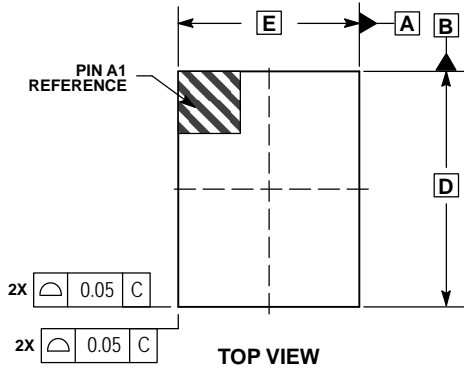


Example of wiring diagram [Hall(OIS), Open AF] in LC898122XA

Package Dimensions

unit : mm

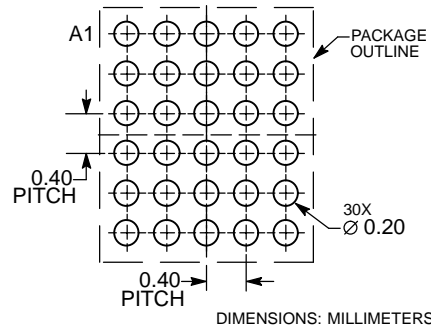
WLCSP30, 2.59x1.99
CASE 567HG
ISSUE O



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
 2. CONTROLLING DIMENSION: MILLIMETERS.
 3. COPLANARITY APPLIES TO SPHERICAL CROWNS OF SOLDER BALLS.

DIM	MILLIMETERS	
	MIN	MAX
A	---	0.45
A1	0.03	0.13
b	0.15	0.25
D	2.59 BSC	
E	1.99 BSC	
e	0.40 BSC	

RECOMMENDED SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

Pin Assignment

Bottom View

	OUT5	OUT4	OUT3	PGND	OUT2	OUT1
5	OUT6	DGDATA	DGSSB	VM	I2CDT	I2CCK
4	HAFBO	DVSS	DGSCLK	DVDD30	IOP2	IOP1
3	HLYBO	HLXBO	OPINMAF	OPINMX	OPINMY	IOP0
2	OPINPAF	OPINPX	OPINPY	AVSS	AVDD30	DVDD12
1	F	E	D	C	B	A

- Driver
- Analog VDD
- Analog GND
- Digital GND
- Digital VDD
- Logic Core VDD (Output)

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<typ> I : INPUT, O : OUTPUT, B : BIDIRECTION, P : Power

Ball No	Pin Name	type	Description
A1	DVDD12	P	LDO Power supply out (Logic Core VDD (typ 1.2V))
A2	IOP0	B	General-purpose IOPORT
A3	IOP1	B	General-purpose IOPORT
A4	I2CCK	I	I2C IF clock
A5	OUT1	O	OIS Driver output (H bridge)
B1	AVDD30	P	Analog Power (2.6 to 3.6V)
B2	OPINMY	I	OIS Hall-Y OpAmp input-
B3	IOP2	B	General-purpose IOPORT/ External Clock input (switch from OSC at Register)
B4	I2CDT	B	I2C_IF Data
B5	OUT2	O	OIS Driver output (H bridge)
C1	AVSS	P	Analog GND
C2	OPINMX	I	OIS Hall-X OpAmp input-
C3	DVDD30	P	IO Power (2.6V to 3.6V)
C4	VM	P	Driver Power (2.6V to 3.6V)
C5	PGND	P	Driver GND
D1	OPINPY	I	Hall-Y Bias (Current Drive) for OIS
D2	OPINMAF	I	AF Hall OpAmp input-
D3	DGSCCLK	B	Digital Gyro IF clock / General-purpose IOPORT
D4	DGSSB	B	Digital Gyro IF Chip Select / General-purpose IOPORT
D5	OUT3	O	OIS Driver output (H bridge)
E1	OPINPX	I	Hall-X OpAmp input+ for OIS
E2	HLXBO	O	Hall-X Bias (Current Driver) for OIS
E3	DVSS	P	Logic GND
E4	DGDATA	B	Digital Gyro IF Data (3wire : Data in/out, 4wire : Data out)
E5	OUT4	O	OIS Driver output (H bridge)
F1	OPINPAF	I	AF Hall OpAmp input+
F2	HLXBO	O	Hall-Y Bias (current drive) for OIS
F3	HLAFBO	O	Hall Bias (current drive) for AF
F4	OUT6	O	AF Driver output (H bridge/constant current)
F5	OUT5	O	AF Driver output (H bridge/constant current)

ORDERING INFORMATION



Device	Package	Shipping (Qty / Packing)
LC898122XA-VH	WLCSP30, 2.59x1.99 (Pb-Free / Halogen Free)	5000 / Tape & Reel

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D. http://www.onsemi.com/pub_link/Collateral/BRD8011-D.PDF

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