

AC6319A Datasheet

Zhuhai Jieli Technology Co.,LTD

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AC6319A Features

High performance 32-bit RISC CPU

- RISC 32-bit CPU
- DC-120MHz operation
- 56KB data RAM
- 8KB Icache 4way
- 64 Vectored interrupts
- 4 Levels interrupt priority

Flexible I/O

- All GPIO pins can be programmable as input or output individually
- All GPIO pins are internal pull-up/pull-down selectable individually
- CMOS/TTL level Schmitt triggered input
- External wake up/interrupt on all GPIOs

Peripheral Feature

- One Full Speed USB OTG controller
- Four Multi-function 32-bit timers, support capture and PWM mode
- One full-duplex basic UART(DMA)
- Two SPI interface supports host and device mode
- One IIC interface supports host and device mode
- RTC, with alarm clock and time base to wake up the chip
- 16-bit PWM generator for motor driving
- 7 channels 10-bit ADC
- 1 channel 8 levels Low Power Detector

- Embedded PMU support low power mode
- Watchdog
- Power-on reset

Bluetooth Feature

- CMOS single-chip fully-integrated radio and baseband
- Compliant with Bluetooth V5.1+BR+EDR+BLE specification
- Bluetooth Piconet and Scatternet support
- Meet class2 and class3 transmitting power requirement
- Support GFSK and $\pi/4$ DQPSK all packet types
- Provides +8dbm transmitting power
- Receiver with -92dBm sensitivity
- Support
a2dp\avctp\avdtp\avrcp\hfp\spp\smp\att\gap\gatt\rfcomm\sdp\l2cap profile

Power Supply

- VBAT is 1.8V to 3.4V
- VDDIO is 1.8V to 3.4V

Packages

- SOP16

Temperature

- Operating temperature: -40°C to +85°C
- Storage temperature: -65°C to +150°C

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1. Pin Definition

1.1 Pin Assignment

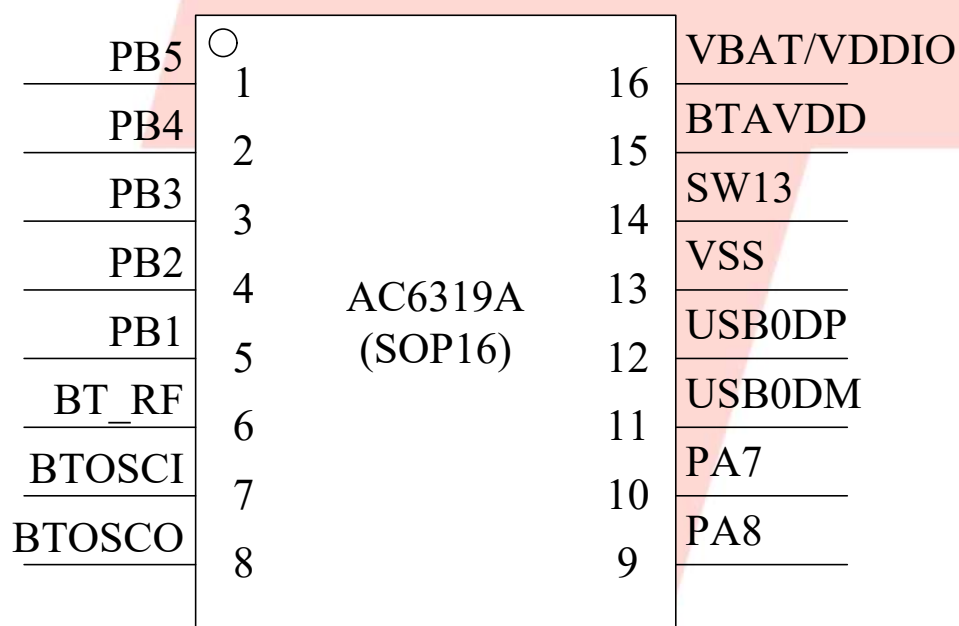


Figure 1-1 AC6319A_SOP16 Package Diagram

1.2 Pin Description

Table 1-1 AC6319A_SOP16 Pin Description

PIN NO.	Name	I/O Type	Function	Other Function
1	PB5	I/O	GPIO (High Voltage Resistance)	UART1_RXA: Uart1 Data In(A) SPI2_DIA: SPI2 Data In(A) PWMCH3L
2	PB4	I/O	GPIO	TMR2: Timer2 Clock In SPI1_DIB: SPI1 Data In(B) ADC9: ADC Channel 9 UART1_TXA: Uart1 Data Out(A) PWMCH3H
3	PB3	I/O	GPIO (High Voltage Resistance)	CAP1: Timer1 Capture UART0_RXB: Uart0 Data In(B) PWMCH2L
4	PB2	I/O	GPIO (pull up)	ADC8: ADC Channel 8 UART0_TXB: Uart0 Data Out(B) PWMCH2H
5	PB1	I/O	GPIO (pull up)	PWM2: Timer2 PWM Output ADC7: ADC Channel 7 UART1_RXB: Uart1 Data In(B) Long Press Reset
6	BT_RF	-	RF Antenna	-
7	BTOSCI	I	BTOSCI	-
8	BTOSCO	O	BTOSCO	-
9	PA8	I/O	GPIO	TMR3: Timer3 Clock In SPI1_DOA: SPI1 Data Out(A) IIC_SDA_C: IIC SDA(C) ADC4: ADC Channel 4 UART1_RXC: Uart1 Data In(C) PWMCH1L
10	PA7	I/O	GPIO	TMR1: Timer1 Clock In SPI1_CLKA: SPI1 Clock(A) IIC_SCL_C: IIC SCL(C) ADC3: ADC Channel 3 UART1_TXC: Uart1 Data Out(C) PWMCH1H

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11	USB0DM	I/O	GPIO (pull down)	IIC_SDA_A: IIC SDA(A) SPI2_DOB: SPI2 Data Out(B) ADC11: ADC Channel 11 UART1_RXD: Uart1 Data In(D)
12	USB0DP	I/O	GPIO (pull down)	IIC_SCL_A: IIC SCL(A) SPI2_CLKB: SPI2 Clock(B) ADC10: ADC Channel 10 UART1_TXD: Uart1 Data Out(D)
13	VSS	P	Ground	-
14	SW13	P	DC-DC Switch Pin	-
15	BTAVDD	P	Core Power 1.3V	-
16	VBAT	P	LDO Power	-
	VDDIO	P	IO Power 3.3V	-

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2. Electrical Characteristics

2.1 Absolute Maximum Ratings

Table 2-1

Symbol	Parameter	Min	Max	Unit
Tamb	Ambient Temperature	-40	+80	°C
Tstg	Storage temperature	-65	+150	°C
VBAT	Supply Voltage	-0.3	3.6	V
V _{3.3IO}	3.3V IO Input Voltage	-0.3	3.6	V

Note : The chip can be damaged by any stress in excess of the absolute maximum ratings listed below

2.2 Recommended Operating Conditions

Table 2-2

Symbol	Parameter	Min	Typ	Max	Unit	Test Conditions
VBAT	Voltage Input	1.8	3.0	3.4	V	—
VDDIO	Voltage output	1.8	3.0	3.4	V	VBAT= 4.2V, 60mA loading
BTA VDD	Voltage output	1	1.3	1.4	V	DC-DC mode: 40mA loading
IL3.3	Loading current	—	—	60	mA	VBAT = 4.2V

2.3 IO Input/Output Electrical Logical Characteristics

Table 2-3

IO input characteristics						
Symbol	Parameter	Min	Typ	Max	Unit	Test Conditions
V _{IL}	Low-Level Input Voltage	-0.3	—	0.3* VDDIO	V	VDDIO = 3.3V
V _{IH}	High-Level Input Voltage	0.7* VDDIO	—	VDDIO+0.3	V	VDDIO = 3.3V
IO output characteristics						
V _{OL}	Low-Level Output Voltage	—	—	0.33	V	VDDIO = 3.3V
V _{OH}	High-Level Output Voltage	2.7	—	—	V	VDDIO = 3.3V

2.4 Internal Resistor Characteristics

Table 2-4

Port	Drive Strength	Internal Pull-Up Resistor	Internal Pull-Down Resistor	Comment
PA1-PA8, PB1-PB2, PB4,PB6, PB8,PB9	drive_select[11] 24mA; drive_select[10] 16mA; drive_select[01] 8mA; drive_select[00] 2.4mA (with 120ohm res) ;	10K	10K	1. PB1&PB2 default pull up 2. USB0DM&USB0DP default pull down 3. Internal pull-up/pull-down resistance accuracy $\pm 20\%$ 4. PB3,PB5 can pull-up resistance to 5V
PB3,PB5	8mA ;	10K	10K	
USB0DP	4mA	1.5K	15K	
USB0DM	4mA	180K	15K	

3. Package Information

3.1 SOP16

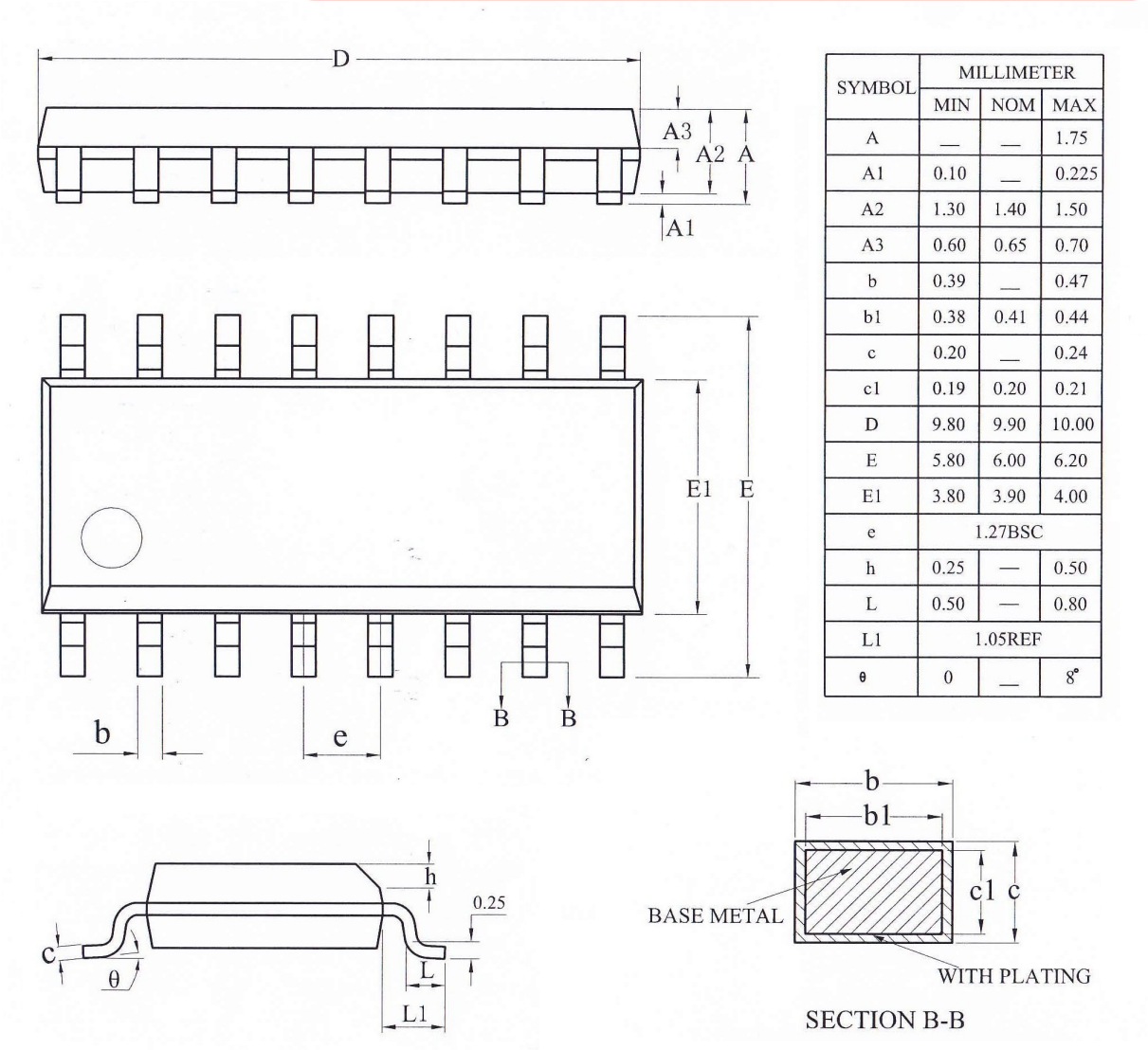
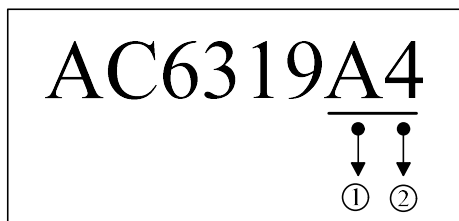


Figure 3-1. AC6319A_SOP16 Package

4. Package Type Specification



①Represents different packages

②Represents different memory sizes

0: No memory

2: 2Mbit Flash

4: 4Mbit Flash

8: 8Mbit Flash

5. Revision History

Date	Revision	Description
2020.07.13	V1.0	Initial Release