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# **AC6379B Datasheet**

**Zhuhai Jieli Technology Co.,LTD**

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# AC6379B Features

## CPU

- 32-bit DSP supports hardware Float Point Unit(FPU)
- Up to 160MHz programmable processor
- 64 Vectored interrupts
- 4 Levels interrupt priority

## Bluetooth

- Compliant with Bluetooth V5.1+BR+EDR+BLE specification
- Meet class1 class2 and class3 transmitting power requirement
- Support GFSK and  $\pi/4$  DQPSK all packet types
- Provides a maximum +8dbm transmitting power
- receiver with -94dBm sensitivity
- Fast AGC for enhanced dynamic range
- Supports a2dp\avctp\avdtp\avrcp\hfp\spp\smp\att\gap\gapga tt\rfcomm\sdp\l2cap profile

## Peripherals

- One full speed USB 2.0 OTG controller
- Six multi-function 32-bit timers, support capture and PWM mode

- Three full-duplex basic UART, support DMA mode
- One hardware IIC interface supports host and device mode
- One Built-in low power Cap Sense Keys
- Built-in Cap Sense Key controller
- 10-bit ADC for analog sampling
- External wake up/interrupt on all GPIOs

## PMU

- Low voltage LDO and DC-DC for internal digital and analog circuit supply
- 2uA current consumption in the soft-off mode
- Built-in LDO and DC-DC for the core, I/O, Bluetooth and flash
- VDDIO is 1.8V to 3.4V

## Packages

- SOP16

## Temperature

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

## Applications

- Bluetooth IOT

VSS	0		16	PB6
SW	1		15	PB7
VBAT/VDDIO	2		14	PA5
BTA VDD	3		13	PA6
PB1	4	AC6379B (SOP16)	12	USBDP
BT_RF	5		11	USBDM
BTOSCI	6		10	PC4
BTOSCO	7		9	PC5
	8			

### Figure 1-1 AC6379B Package Diagram

## 1.2 Pin Description

Table 1-1 AC6379B Pin Description

PIN NO.	Name	I/O Type	Drive (mA)	Function	Other Function
1	VSS	P	/		
2	SW	P	/	DCDC output	DCDC switch output, connected to inductor
3	VBAT	P	/		connect to battery
	VDDIO	P	/		IO Power 3.3v
4	BTAVDD	P	/		BT Power
5	PB1	I/O	8/24	GPIO (pull up)	Long Press Reset UART2TXC: Uart2 Data Output(C) ADC6: ADC Input Channel 6 LP_TH0: Low Power Touch Channel 0
6	BT_RF	/	/		BT Antenna
7	BTOSCI	I	/		BTOSC In
8	BTOSCO	O	/		BTOSC Out
9	PC5	I/O	8/24	GPIO	UART2RXD: Uart2 Data Input(D) SPI1DOB: SPI1 Data Out(B) IIC_SDA_B: IIC SDA(B) ADC5: ADC Input Channel 5
10	PC4	I/O	8/24	GPIO	UART2TXD: Uart2 Data Output(D) SPI1CLKB: SPI1 Clk(B) IIC_SCL_B: IIC SCL(B) ADC4: ADC Input Channel 4 PWM4: Timer4 PWM Output;
11	USBDM	I/O	4	USB Negative Data (pull down)	UART1RXD: Uart1 Data Input(D) SPI2DOB: SPI2 Data Out(B) IIC_SDA_A: IIC SDA(A) ADC11: ADC Input Channel 11
12	USBDP	I/O	4	USB Positive Data (pull down)	UART1TXD: Uart1 Data Output(D) SPI2CLKB: SPI2 Clk(B) IIC_SCL_A: IIC SCL(A) ADC10: ADC Input Channel 10
13	PA6	I/O	8/24	GPIO	IIC_SDA_D: IIC SDA(D) UART0RXA: Uar0 Data Input(A) SPI2DOA: SPI2 Data Out(A) ADC2: ADC Input Channel 2 Touch3: Touch Input Channel 3

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14	PA5	I/O	8/24	GPIO	IIC_SCL_D: IIC SCL(D) UART0TXA: Uart0 Data Output(A) SPI2CLKA: SPI2 Clk(A) ADC1: ADC Input Channel 1 Touch2: Touch Input Channel2
15	PB7	I/O	8/24	GPIO	UART0TXB: Uart0 Data Output(B) SPI1DOA: SPI1 Data Out(A) Q-decoder1
16	PB6	I/O	8/24	GPIO	UART1RXA: Uart1 Data Input(A) SPI1CLKA: SPI1 Clk(A) PWM2: Timer2 PWM Output ADC9: ADC Input Channel 9 Touch7: Touch Input Channel 7 Q-decoder0

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## 2、Electrical Characteristics

### 2.1 Absolute Maximum Ratings

Table 2-1

Symbol	Parameter	Min	Max	Unit
Tamb	Ambient Temperature	-40	+85	°C
Tstg	Storage temperature	-65	+150	°C
VBAT	Supply Voltage	-0.3	4.5	V
LDO_IN	Charger Voltage	-0.3	6	V
V <sub>3.3IO</sub>	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	
V <sub>3.3</sub>	Voltage output	1.8	3.0	3.4	V	
V <sub>BT_AVDD</sub>	Voltage output	1.2	1.25	1.35	V	

### 2.3 IO Input/Output Electrical Logical Characteristics

Table 2-3

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

## 2.4 Internal Resistor Characteristics

Table 2-4

Port	General Output	High Drive	Internal Pull-Up Resistor	Internal Pull-Down Resistor	Comment
PA3, PB1,PB4, PB6~PB8, PC4,PC5, PD5,PD6,	8mA	24mA	10K	10K	1、PB1 default pull up 2、USBDM & USBDP default pull down 3、internal pull-up/pull-down resistance   accuracy $\pm 20\%$
USBDP	4mA	—	1.5K	15K	
USBDM	4mA	—	180K	15K	

## 2.5 BT Characteristics

### 2.5.1 Transmitter

Basic Data Rate

Table 2-5

Parameter	Min	Typ	Max	Unit	Test Conditions
RF Transmit Power		6	8	dBm	25°C, Power Supply VBAT=5V 2441MHz
RF Power Control Range		20		dB	
20dB Bandwidth		950		KHz	
Adjacent Channel	+2MHz	-40		dBm	
	-2MHz	-38		dBm	
Transmit Power	+3MHz	-44		dBm	
	-3MHz	-35		dBm	

Enhanced Data Rate

Table 2-6

Parameter	Min	Typ	Max	Unit	Test Conditions
Relative Power		-1		dB	25°C, Power Supply VBAT=5V 2441MHz
$\pi/4$ DQPSK Modulation Accuracy	DEVM RMS	6		%	
	DEVM 99%	10		%	
	DEVM Peak	15		%	
Adjacent Channel	+2MHz	-40		dBm	
	-2MHz	-38		dBm	
Transmit Power	+3MHz	-44		dBm	
	-3MHz	-35		dBm	

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## 2.6.2 Receiver

### Basic Data Rate

Table 2-7

Parameter		Min	Typ	Max	Unit	Test Conditions
Sensitivity			-94		dBm	25°C, Power Supply VBAT=5V 2441MHz
Co-channel Interference Rejection			-13		dB	
Adjacent Channel Interference Rejection	+1MHz		+5		dB	
	-1MHz		+2		dB	
	+2MHz		+37		dB	
	-2MHz		+36		dB	
	+3MHz		+40		dB	
	-3MHz		+35		dB	

### Enhanced Data Rate

Table 2-8

Parameter		Min	Typ	Max	Unit	Test Conditions
Sensitivity			-94		dBm	25°C, Power Supply VBAT=5V 2441MHz
Co-channel Interference Rejection			-13		dB	
Adjacent Channel Interference Rejection	+1MHz		+5		dB	
	-1MHz		+2		dB	
	+2MHz		+37		dB	
	-2MHz		+36		dB	
	+3MHz		+40		dB	
	-3MHz		+35		dB	

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### 3、 Package Information

#### 3.1 SOP16

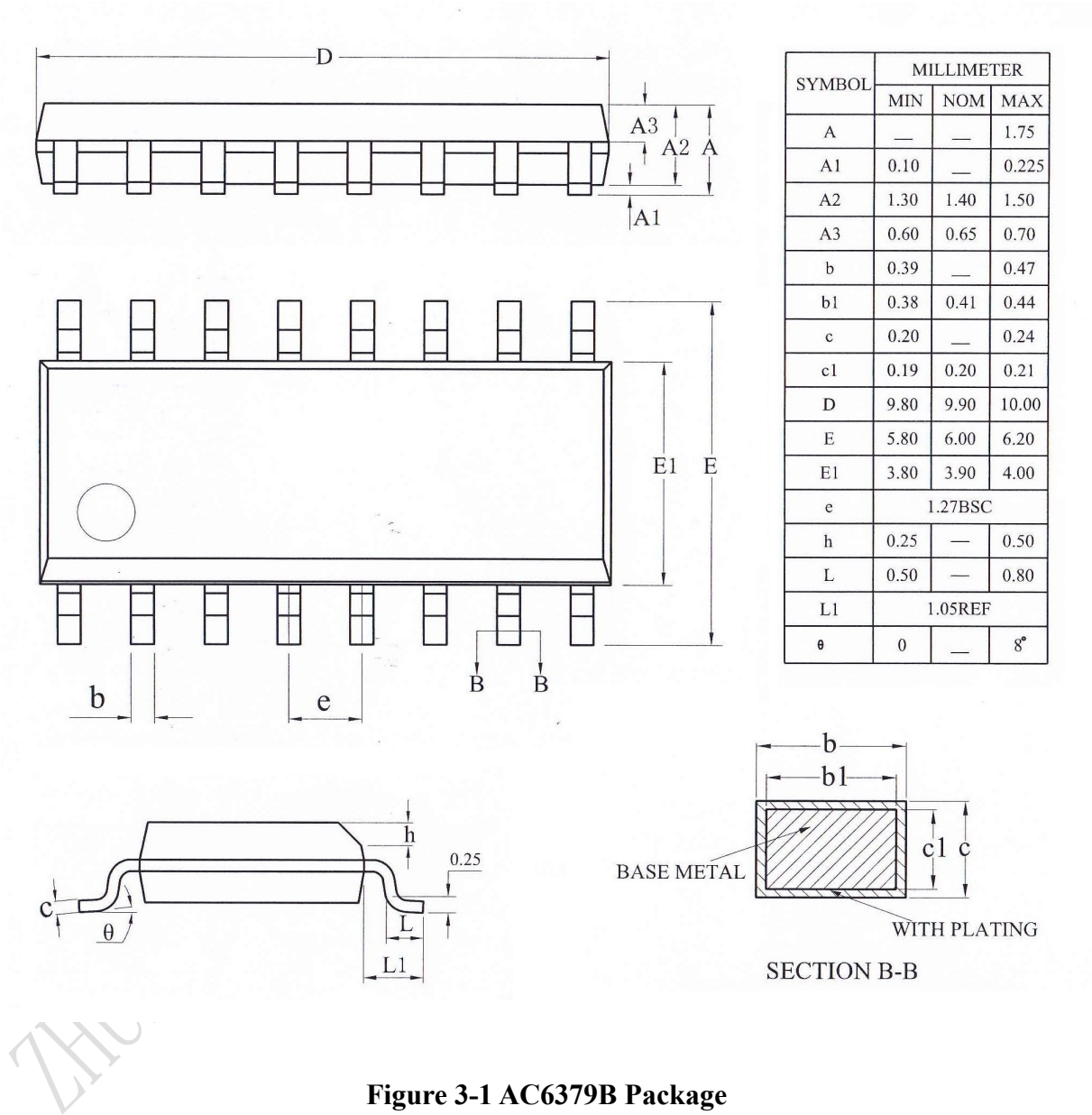
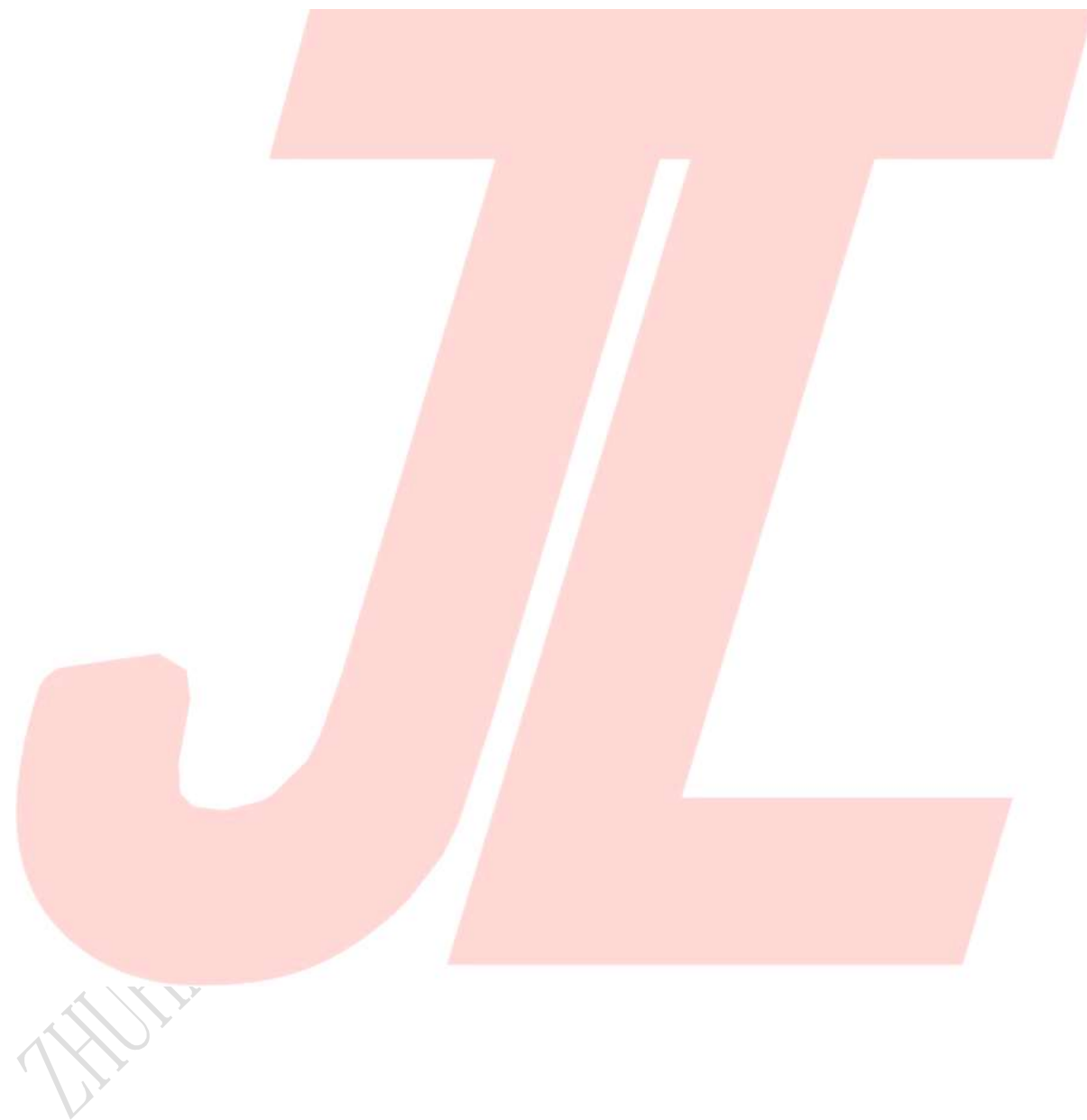


Figure 3-1 AC6379B Package

## 4、Revision History

Date	Revision	Description
2020.10.12	V1.0	Initial Release

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