

KC9102A

Digital Servo Motor Controller

Preliminary

Rev.0.01

Nov.01.2018

概述

KC9102A是一款专用的马达驱动芯片。电路内部集成了高精度ADC，可直接驱动外部H桥电路，适合于驱动电动玩具车的转向轮驱动。该电路VDD具备较宽的工作电压范围（从2V到5.5V）。芯片采用SOP8引脚的封装，符合RoHS 标准。

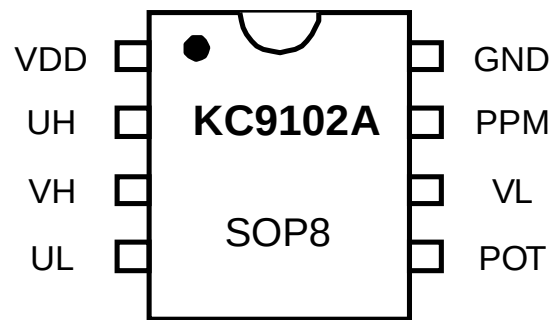
特性

- 专用直流电机控制SOC
- 根据客户机械机构可调整
- 低成本
- 低静态工作电流

典型应用

- 2-6 节 AA/AAA 干电池供电的玩具马达驱动
- 2-6 节镍-氢/镍-镉充电电池供电的玩具马达驱动
- 1-2 节锂电池供电的马达驱动
- 安防系统
- 智能家居

引脚排列



引脚定义

引脚名称	输入输出	功能描述
POT	输入	位置反馈输入
PPM	输入	PPM信号输入
VDD	电源	3.3V电源
GND	地	地
UL , VL	输出	桥电路低端栅极驱动
UH , VH	输出	桥电路高端栅极驱动

The circuit diagram illustrates a motor speed control system. It consists of three main components: a microcontroller (U1), a voltage divider (U2), and a motor driver (U3).

- Microcontroller (U1):** Labeled "KC9102A SOP8", it has pins for VDD, GND, UH, PPM, VH, VL, UL, and POT. It is powered by VCC3.3 and has a ground connection. The PPM pin is connected to the PP pin of the voltage divider. The VL pin is connected to the V pin of the voltage divider. The POT pin is connected to the POT pin of the motor driver.
- Voltage Divider (U2):** Labeled "SC662K", it has pins for VIN, GND, and VOUT. It is powered by VCC3.3 and has a ground connection. The VIN pin is connected to the V pin of the motor driver. The VOUT pin is connected to the V pin of the microcontroller.
- Motor Driver (U3):** Labeled "TC118S SOP8", it has pins for NC, OUTA, INA, PGND, INB, AGND, VDD, and OUTB. It is powered by VCC3.3 and has a ground connection. The OUTA pin is connected to the OUT pin of the motor driver. The OUTB pin is connected to the OUT pin of the motor driver. The VDD pin is connected to the V pin of the microcontroller.

The motor is represented by a circle with a stylized 'M' and is connected to the OUT and OUTB pins of the motor driver. The circuit is powered by VCC3.3 and has a ground connection.

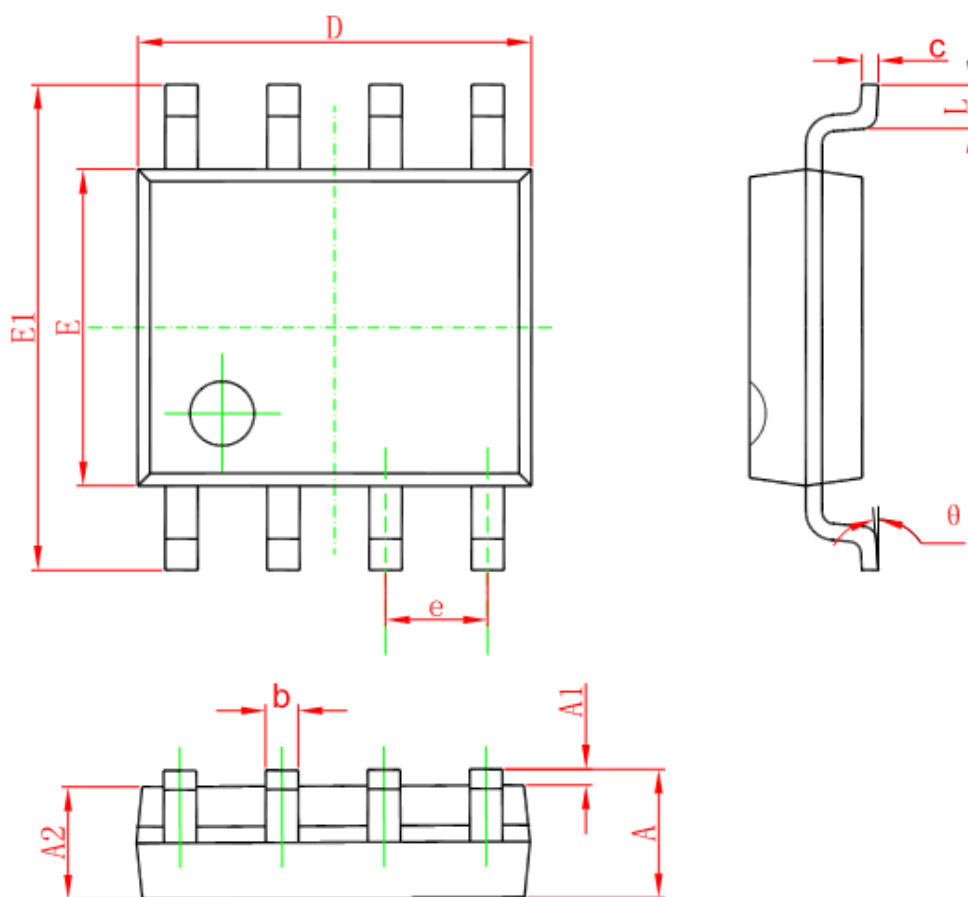
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电器参数 ($T_A=25^{\circ}\text{C}$, $V_{CC}=3.3\text{V}$, $V_{DD}=6\text{V}$ 除非另有规定)

参数	符号	最小值	典型值	最大值	单位
电源参数					
工作电压	VDD	2.2	3.3	5.5	V
工作电流	IDD		1.0		mA
工作温度		-45		85	$^{\circ}\text{C}$
PPM输入电压	VIL	0		0.3VDD	
	VIH	0.7VDD		VDD	
POT输入电压	VDD	0		VDD	V
POT精度	ADOS		2		mV
VL UL VH UH 驱动电流	IOH	13	20	23	mA
VL UL VH UH 灌电流	IOL	-10		-20	mA

封装外形尺寸

SOP8



字符	Dimension In Millimeters	
	Min	Max
A	1.500	1.700
A1	0.040	0.120
A2	1.350	1.550
b	0.300	0.500
c	0.190	0.250
D	4.800	5.000
E	3.840	4.040
E1	5.900	6.100
e	1.27 (BSC)	
L	0.520	0.720
θ	0°	8°