

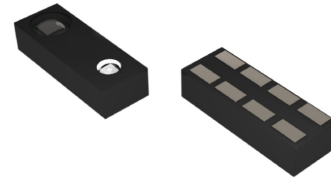
1. 产品特征

- 集成接近光、环境光传感器和IR LED
- 支持1.6V~3.6V I2C接口
- 支持1.7V~2V宽供电电压
- 分辨率达到16位
- 低功耗设计
- 封装尺寸4.2mm x 1.5mm x 1mm

2. 应用

智能手机和移动设备
数码相机等消费产品

3. 封装

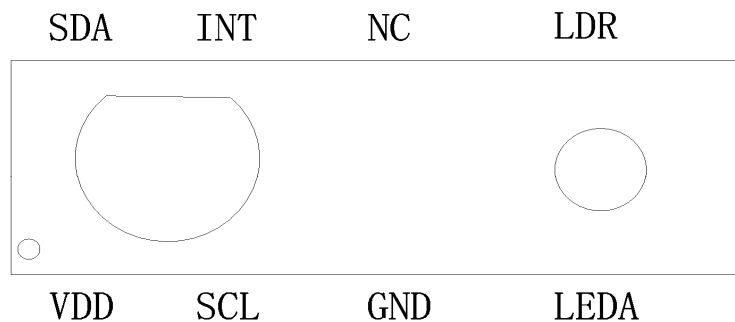


OLGA 4.2*1.5*1mm ROHS

4. 产品描述

TVALPP316X集成环境光和接近光传感器，内置IR LED和I2C接口，该芯片可以提供环境光传感，实现背光/显示器亮度控制，还提供红外传感，实现具有中断功能的接近光评估。TVALPP316X芯片的光谱响应针对波长为 940nm 的红外光进行了优化。TVALPP316X提供可编程电流设置来驱动 IR LED，并采用噪声消除方案来高度抑制不需要的环境 IR 噪声。TVALPP316X具有出色的温度补偿、强大的片上刷新率设置，无需外部组件。为省电应用提供软件关机模式控制。芯片工作电压范围为 1.7V 至 2V。

5. 管脚定义

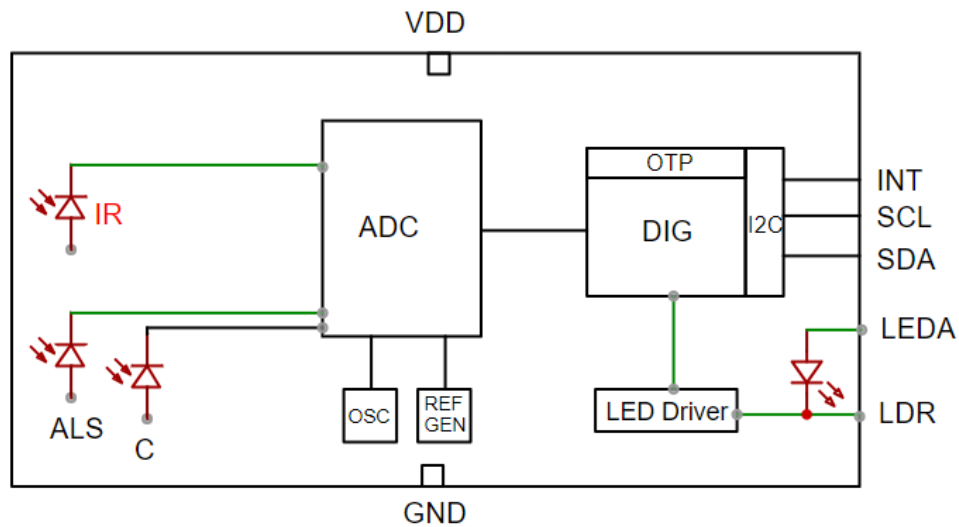


PIN	类型	描述
VDD	电源	Power Supply 1.7V~2V
SCL	I	I2C CLOCK
GND	地	GND
LEDA	I	IR LED ANODE
LDR	I	IR LED driver pin connecting to the cathode of the external IR LED.
NC		NOT CONNECTED
INT	O	Interrupt pin
SDA	B	I2C serial data line

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6. 电路框图



7. 绝对最大额定参数

编号	名称	功能	规格		单位
			Min	Max	
1	VDD	V _{DC} to GND	-0.3	2	V
		VLEDA	-0.3	3.6	V
2	ESD	HBM	/	2	KV
3	Topr	动作温度	-40	85	°C
4	Tstg	储存温度	-40	85	

8. 电气参数

VDD=1.8V&VLEDA=2.8V,常温25°C环境下测试

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Operation Characteristics						
I _{ALS}	ALS only supply current	Note1,2		335		μA
I _{PS}	PS only supply current	Note1,2		255		μA
I _{SD}	Shutdown current	Note1,2		0.78	3	μA
ALS Characteristics						
λ _{p1}	Peak sensitivity wavelength for ALS			550		nm
ALS _{FSCNT}	Full scale ALS counts				65535	counts
ALS _{DARK}	ALS dark offset	Note2,3,4		3		counts
ALS _{SENSE}	ALS sensing tolerance	Note2,3	-12.5		12.5	%
Proximity Characteristics						
λ _{p2}	High sensitivity wavelength range for PS		800	940	1000	nm
PS _{FSCNT}	Full scale PS counts				65535	counts
I _{LED_SINK}	LED sink current	IRDR_LED[5:0] Note5				
		000000		6.25		mA
		000001		12.5		mA
		000010		18.75		mA
		000011		25		mA
		000100		31.25		mA
		000101		37.5		mA
		000110		43.75		mA
		000111		50		mA
			mA
		100010		228.75		mA
		Others		225		mA

Note 1: Operation without IR-LED.

Note 2: GAIN_RGB[2:0] = 3'b100, GAIN_C [2:0] = 3'b100, .IT_ALS[3:0] = 4'b0101, GAIN_PS[1:0] = 3'b110, .IT_PS[3:0] = 4'b0100.

Note 3: White LED parallel light source.

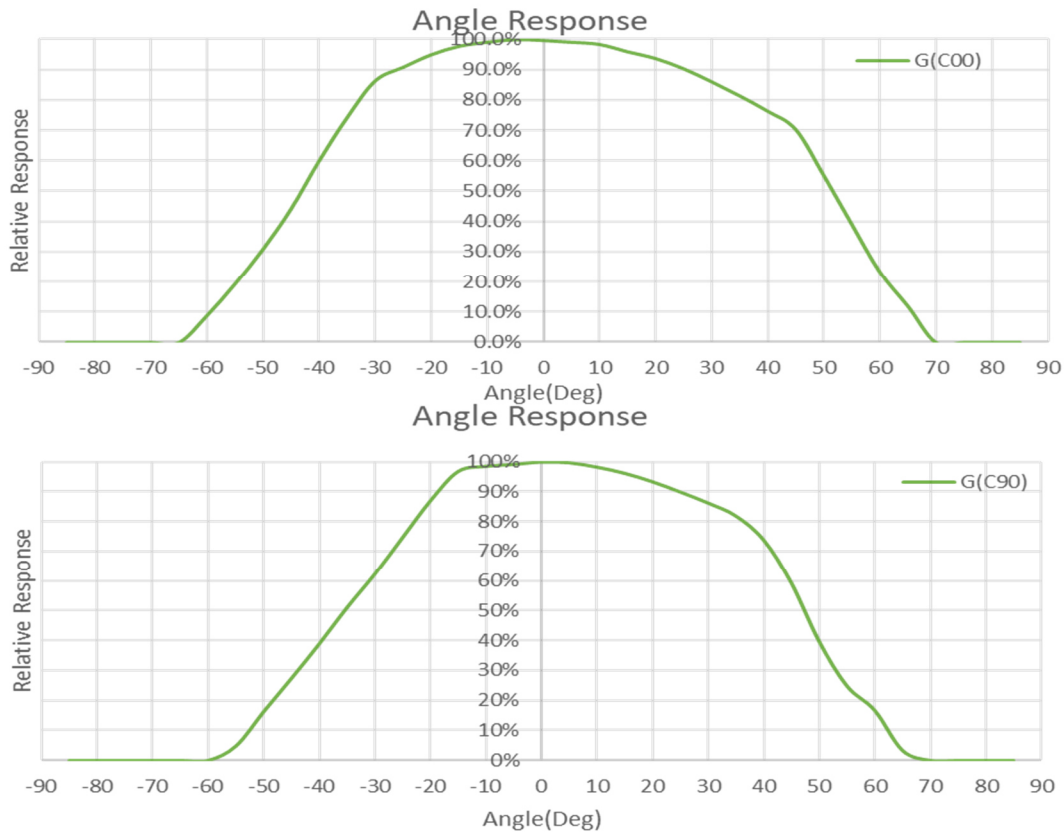
Note 4: Eambient = 0 Lux.

Note 5: The voltage of LDR pin is fixed at 1.2V.

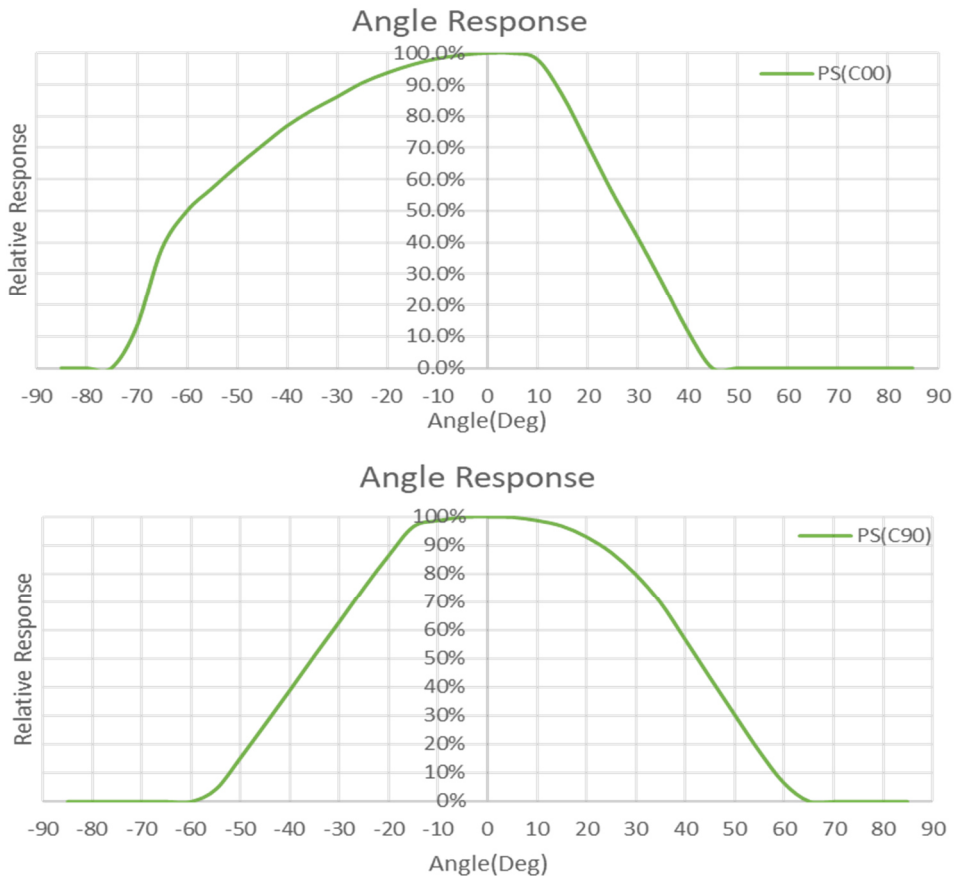
Note 6: I 2C logical high voltage level is specified as worst-case condition when all of the recommended operation supply voltages (VDD) are taken into consideration. The logical high level is different when different supply voltage is applied.

Note 7: I 2C logical low voltage level is specified as worst-case condition when all of the recommended operation supply voltages (VDD) are taken into consideration. The logical low level is different when different supply voltage is applied.

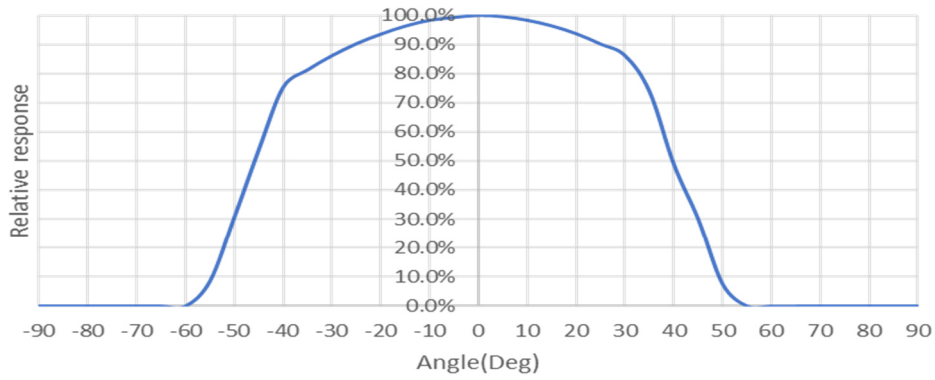
9.ALS Response Charts



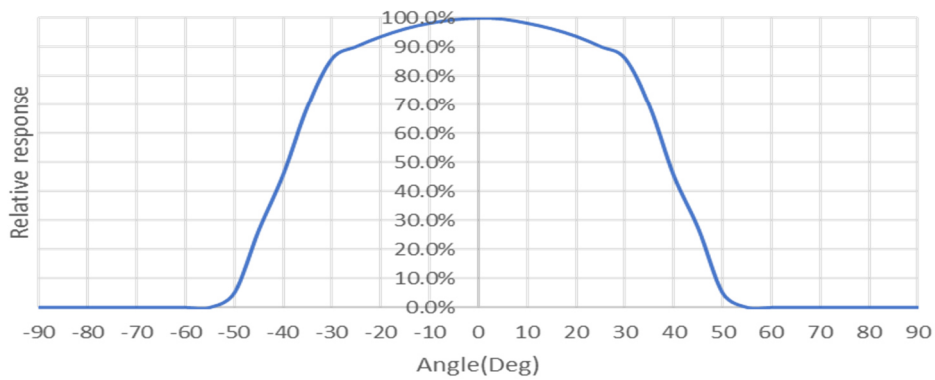
10.PS Response Charts



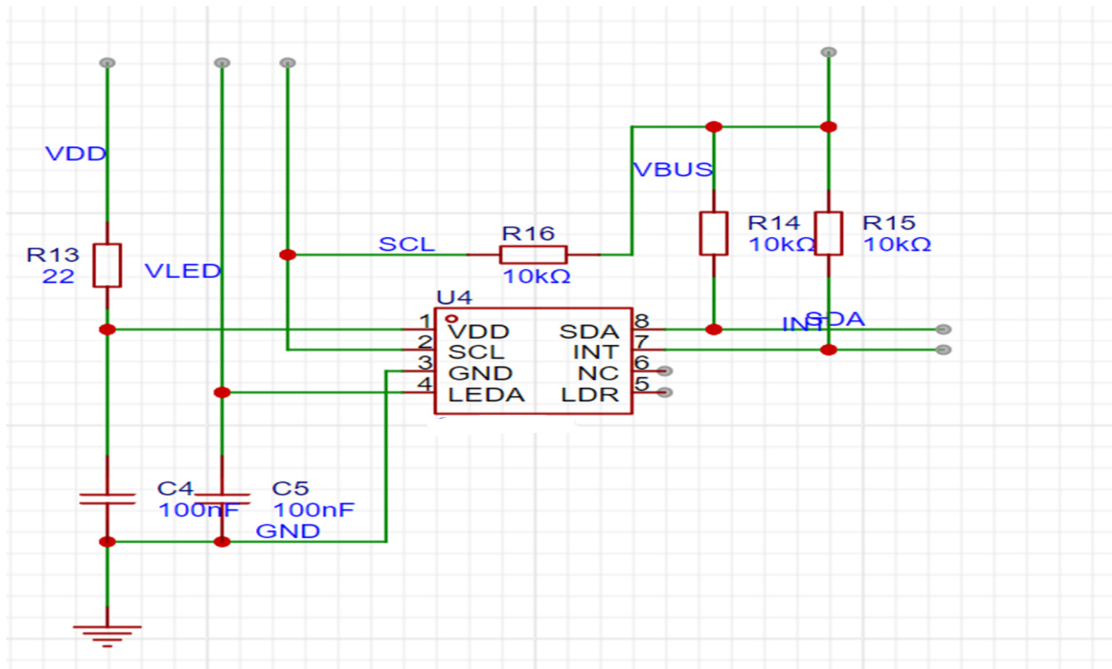
Angular Response_IRLED(C00)



Angular Response_IRLED(C90)



11.应用说明



12. 封装示意图



13. 版本信息

版本	时间	章节	修改	页面
0.1	2024.8.15	新规	新规	新规
0.2	2024.12.26		规格书格式更新	NA