

# 製品仕様書

Specification

Comply With RoHS

品名: 防尘遮断型光控开关

Products Name: photo sensor (interrupter - Dust proof type)

型名 : HSO-IC-0030

Product Number: HSO-IC-0030

客户料号 (东英电子): 5000000400 (曾用料号: CN00737)

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Approved	Checked	Prepared
QianXY 2013-3-7	—	HuQM 2013-3-7

### 1. 适用范围 Scope of Applications

本仕様适合于防尘遮断型光控开关HSO-IC-0030。

This specification covers photo sensor(interrupter-dust proof type) of HSO-IC-0030 。

### 2. 绝对最大定格 Absolute Maximum Ratings (Ta=+25°C)

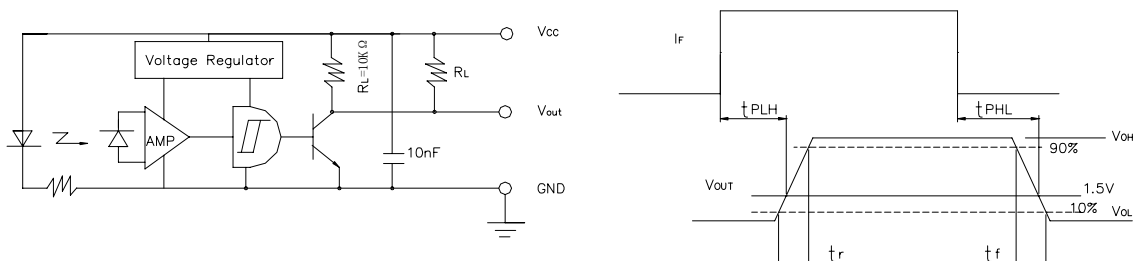
项 目 Parameter	符 号 Symbol	定 格 Ratings	单 位 Units	备 注 REMARKS
电源电压 Forward Current	V cc	DC7	V	
输出电压 Reverse Voltage	V <sub>o</sub>	15	V	Output transistor Collentor -Emitter Voltage
输出电流 Power Dissipation	I out	16	mA	Output transistor Collentor Current
输出允许损失功率 Power Dissipation	P <sub>o</sub>	250	mW	Output transistor Collector Power Dissipation
动作温度 Emitter-Collector Voltage	T opr	-20~+75	°C	
保存温度 Collector Current	T stg	-40~+80	°C	

### 3. 电气的・光学的特性

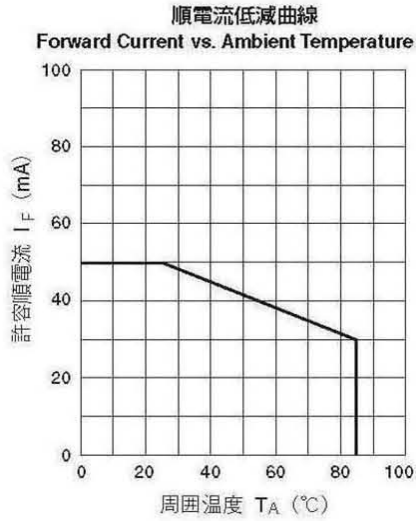
Electrical Optical characteristics Ta=+25°C

	项 目 PARAMETER	記 号 SYMBOL	测定条件 Test Conditions	最小	标准	最大	单位
				Min	Typ	Max	Units
发光侧 Input	顺电压 Forward Voltage	V <sub>F</sub>	I <sub>f</sub> =20mA	—	1.2	1.4	V
	逆电流 Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	10	uA
	发光波长 Peak Wavelength	λ <sub>p</sub>	I <sub>f</sub> =20mA	—	940	—	nm
受光侧 Output	动作电源电压 Supply Voltage	V <sub>CC</sub>	—	4.5	—	5.5	V
	输出高电压 High level Output Voltage	V <sub>OH</sub>	Without Shutter, I <sub>F</sub> =15mA	V <sub>CC</sub> X0.9	—	—	V
	输出低电压 Low Level Output Voltage	V <sub>OL</sub>	Shutter In, I <sub>oL</sub> =16mA	—	—	0.4	V
	感度波长 Peak Wavelength	λ <sub>p</sub>	—	—	910	—	nm
应答时间 Switching Time	L-H运转时间 Propagation Delay Time	t <sub>PLH</sub>	I <sub>F</sub> =15mA V <sub>CC</sub> =5V R <sub>L</sub> =280Ω	—	3	—	us
	H-L运转时间 Propagation Delay Time	t <sub>PLH</sub>		—	5	—	
	上升时间	t <sub>r</sub>		—	0.1	—	
	下降时间	t <sub>p</sub>		—	0.05	—	

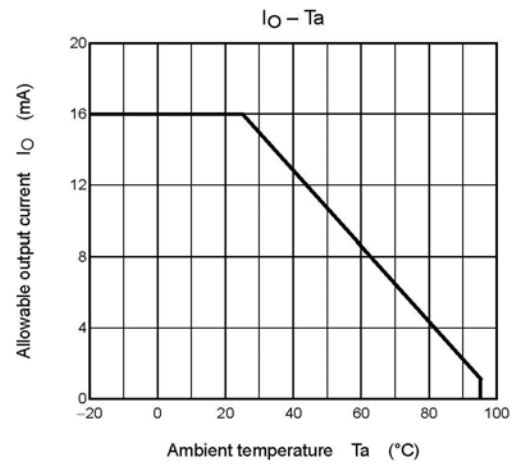
#### Swichng Time Test Circuit



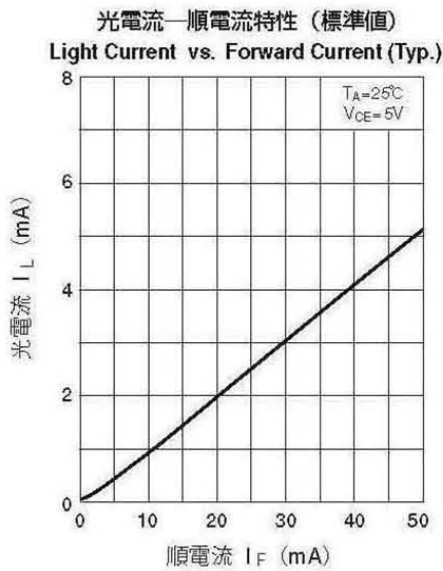
顺电流失-周围温度特性



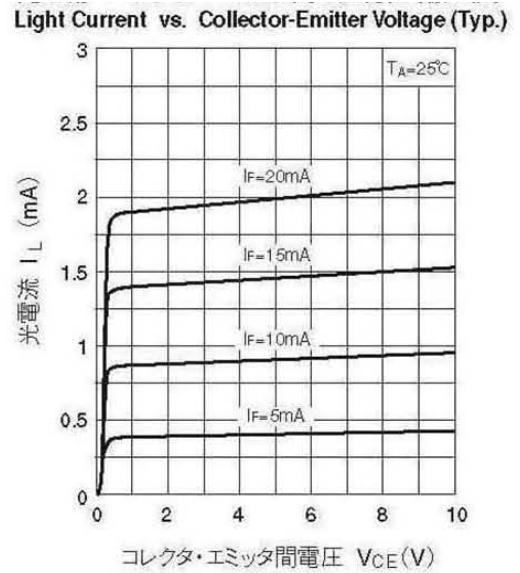
输出电流-周围温度特性



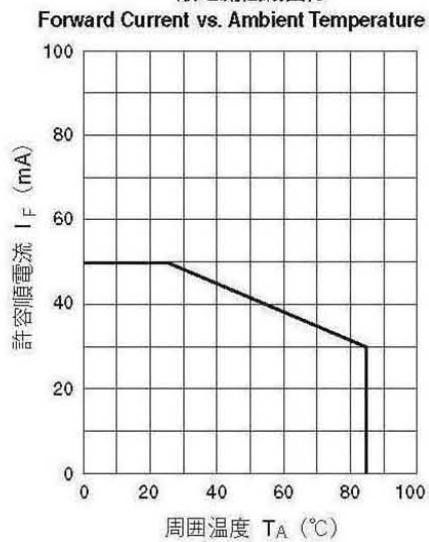
光电流-顺电流特性



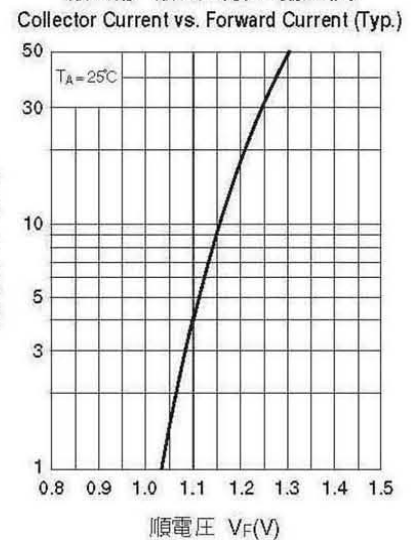
光电流-V<sub>CE</sub>特性



顺电流-周围温度特性



顺电流-电压特性



4. 机械的特性 Mechanical Characteristic.

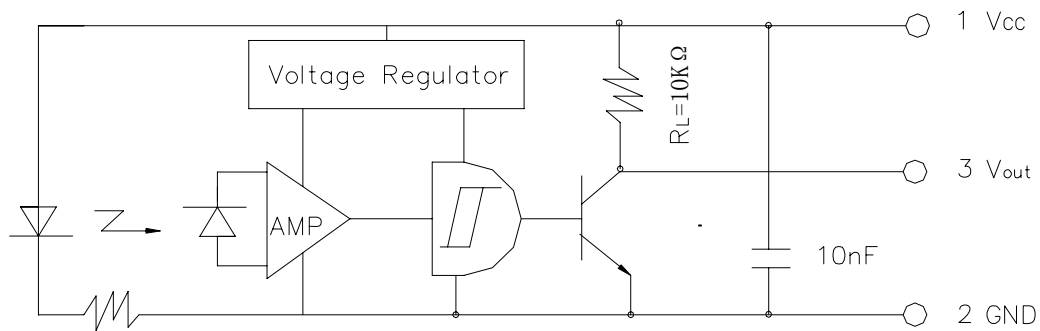
4-1. 耐振动性 全振幅1.5mm、振動频率10~55~10Hz 振动1分钟  
X, Y, Z各方向振动2分钟,无异常。

Vibration Resistance To withstand 10~55~10Hz,1.5mm amplitude and 1 minute sweep time in X,Y and Z directions, each for 2 hours.

4-2. 耐冲击性 294m/S<sup>2</sup> (30G) 以上

Shock Resistance 294m/S<sup>2</sup> (30G) or more

5. 内部接线图 Connection Diagram.

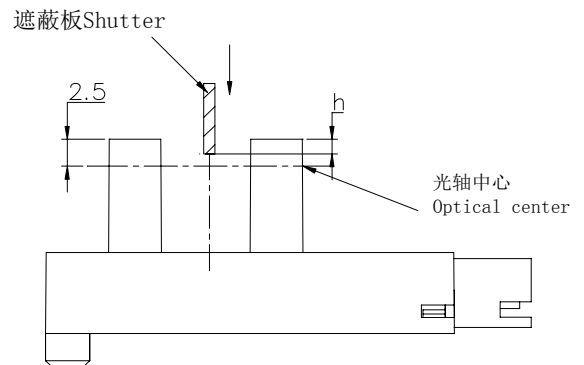
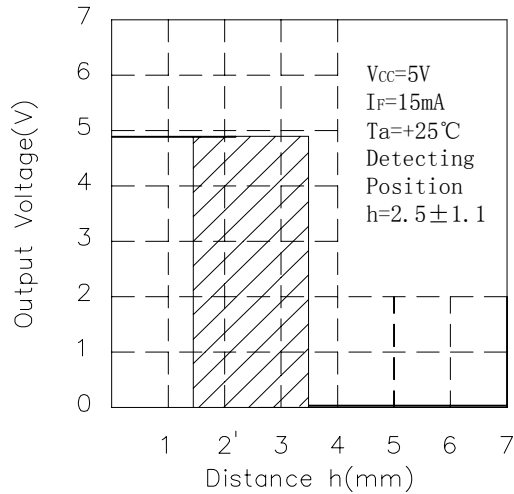


6.检出位置特性(参考)

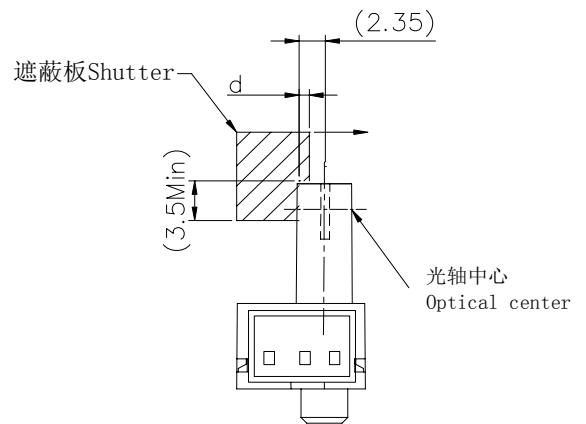
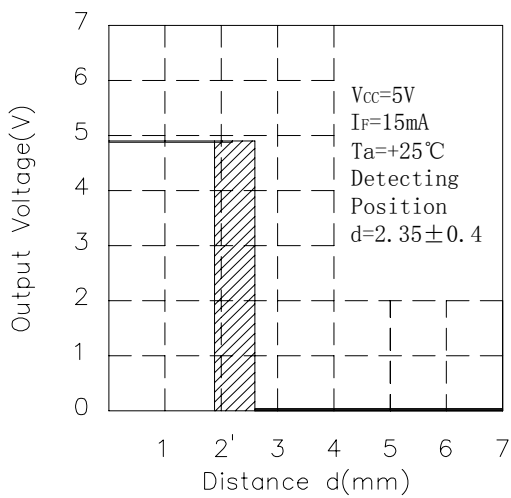
Detecting Position Characteristics (Reference)

[  $V_{CC}=5V$ ,  $I_F=20mA$  ,  $R_L=47k\Omega$  ,  $T_a=+25^\circ C$  ]

检出位置特性(1)  
Detecting Posetion  
Characteristics(1)



检出位置特性(2)  
Detecting Posetion  
Characteristics(2)



7.外形寸法图 Outline Dimensions

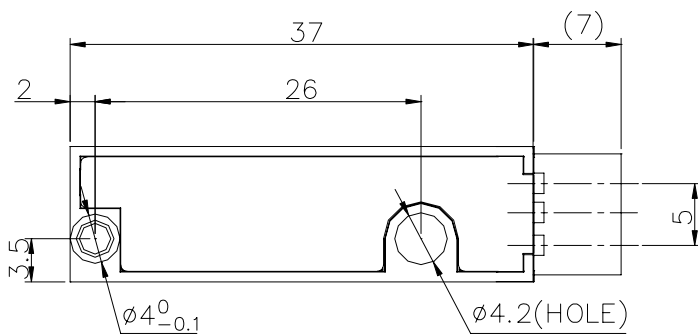
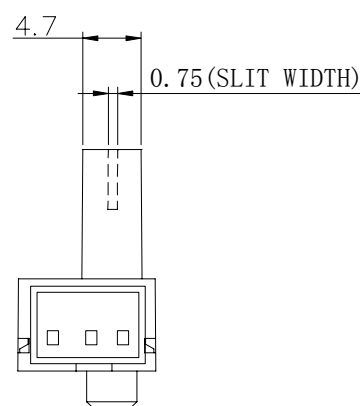
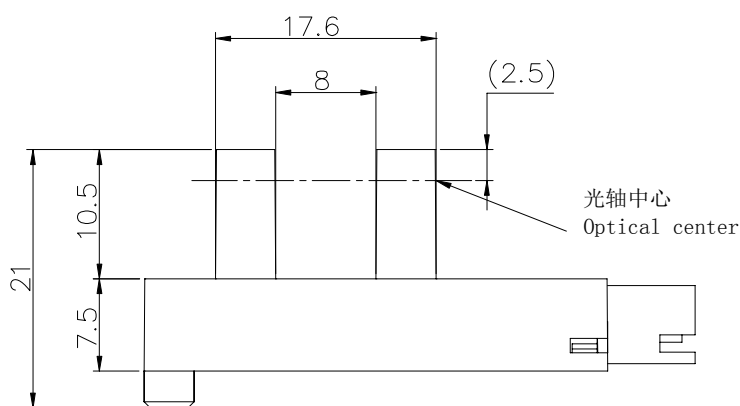
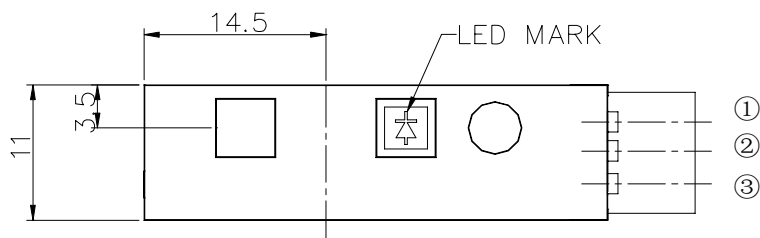
Gap:8mm,Slit width:0.75mm

单位:mm

Unit:mm

一般公差:±0.3

Standard Tolerance:±0.3



8.部品构成

Parts List

NO.	Part Name	Qty Used	Spec/Materials	Remarks
1	Case	1	PC	Blue(transparent)
2	Cover	1	PC	Black
3	Light Emitting Diode	1	—	TOSHIBA(INFRARED LED)
4	Detector	1	—	TOSHIBA ( Photo IC)
5	Metal Shade	2	SUS304 t=0.1mm	Optical Slit width:0.75mm
6	Resistor	1	300Ω	
7	Capacitance	1	10nF	
8	Connector	1	B3B-XH-A	JST
9	PCB	1	CEM-3,t=1.0mm	

製品名 MODEL NAME	防尘遮断型光控开关 Photo interrupter-Dust proof type	型名 MODEL NO.	HSO-IC-0030	Page:6/6
<p>8.使用时注意事项: HANDLING NOTES</p> <p>1.制品在使用时要小心不能负重,避免变形变质. CAREFUL ATTENTION SHOULD BE MADE TO AVOID DEFORMATION OF COMPONENTS.</p> <p>2.保存和使用要在通风良好的环境,防有腐蚀或硫化物及潮湿空气中。 ENVIRONMENTAL AIR MUST BE FREE FROM CORROSIVE GASSES SUCH AS HYDROGEN SULFIDE OR SALT WATER AIR.</p> <p>3.使用时避免阳光直射和强光直射。 MOUNT SENSOR AWAY FROM DIRECT SUN-LIGHT AND INCANDESCENT.</p> <p>4.光发射和接收部分的表面应保护好。 THE SIDE WITH EMITTING &amp; RECEIVING ELEMENTS SHOULD BE HANDLED VERY CAREFULLY.</p> <p>5.插头插入或拔出要在常温下进行。 INSERT &amp; REMOVE CONNECTORS AT ROOM TEMPERATURE ONLY.</p> <p>6.长时间使用的情况下,请要考虑发光素子功能的下降。 DEGRADING LED RADIANT POWER SHOULD BE ADDRESSED IF SENSOR IS USED REPEATEDLY OVER LONG PERIOD OF TIME.</p> <p>7.本製品不能自动装配和焊接。 THIS PRODUCT CAN NOT AUTOMATIC MOUNTING AND AUTOMATIC SOLDERING.</p> <p>8.本制品应用在以如下机械及设备之中。 OA机器、AV机器、家電製品、通信机器(端末)、计测机器、電算机器 THIS PRODUCT WAS DESIGNED FOR USE IN THE FOLLOWING APPLICATIONS. OA EQUIPMENT, VIDEO EQUIPMENT, CONSUMER ELECTRONICS, COMMUNICATION EQUIPMENT, MEASURING EQUIPMENT AND CONTROL EQUIPMENT.</p> <p>9.保証期間の保証范围 GUARANTEE TERM AND GUARANTEE LIMITS</p> <p>1.保証期間 GUARANTEE TERM 交付后保证期为1年。 THE GUARANTEE PERIOD IS ONE YEAR AFTER THE DELIVERY DATE.</p> <p>2.保証范围 GUARANTEE LIMITS 保证期内若本制品发生故障,我们将会更换一个产品,但不负责交货后产品组合以后发生的不良。 WE WILL REPLACE A PRODUCT IF THE FAILURE IS DUE TO OUR MANUFACTURING PROCESS WITHIN THE WARRANTY TERM. WE DON'T GUARANTEE RESPONSIBILITY OF DAMAGE BY TROUBLE OF A PRODUCT AFTER THE DELIVERY.</p> <p>3.本制品在使用时请注意其相关最大规格值,若因超出其参数规格值使用发生的不良,敝司不负责。 WE WILL NOT REPLACE A PRODUCT IF DAMAGE IS DUE TO DISREGARD OF MAXIMUM RATING, HANDLING NOTES AND OTHER SPECIFICATION.</p>				