

产品介绍/Product Introduction

NIR1301T是一种微型高性能反射式光电传感器，由LED和高灵敏度光电三极管组成。

NIR1301T is a micro high-performance reflective photoelectric sensor composed of a LED and a high sensitivity photoelectric transistor.

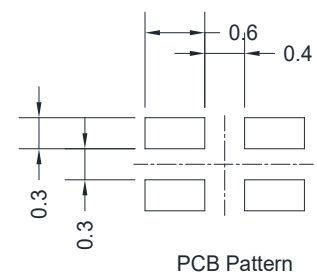
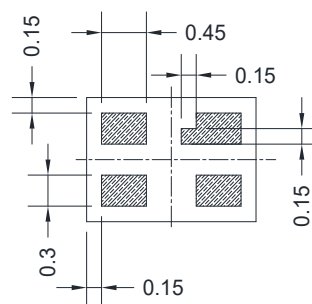
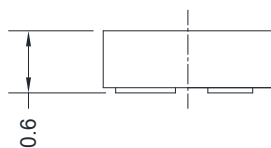
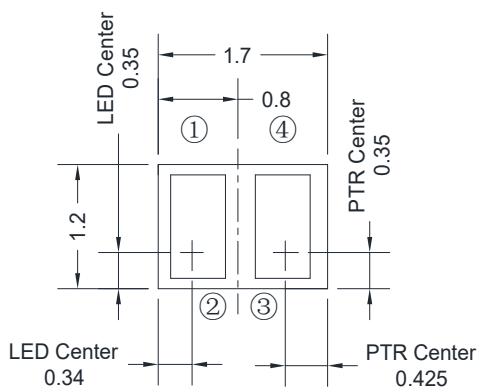
特点/Features

- 小尺寸：1.2mm×1.7mm×0.6mm
Small size: 1.2mm × 1.7mm × 0.6mm
- 表面帖装&回流焊
Surface mount & reflow soldering
- 截止可见光
Cut off visible light

用途/Application

- 打印机、非接触开关
Printer、Non-contact Switching
- 位置检测
Position detection
- 工业设备
Industrial machines

尺寸图/Device Dimensions (mm)



- ① Anode
- ② Cathode
- ③ Collector
- ④ Emitter

极限值/Maximum Ratings

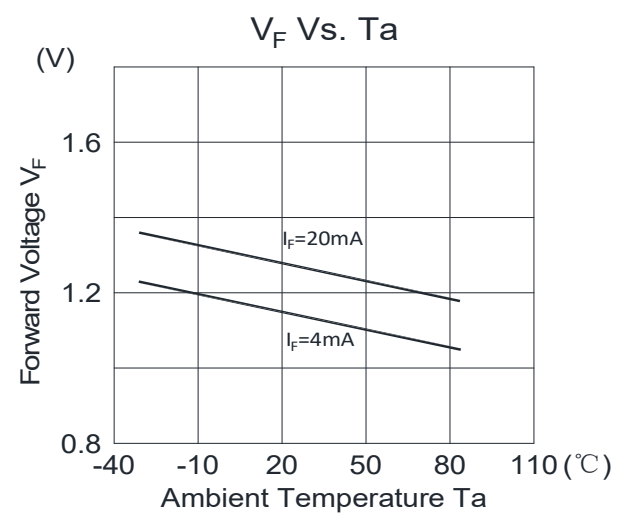
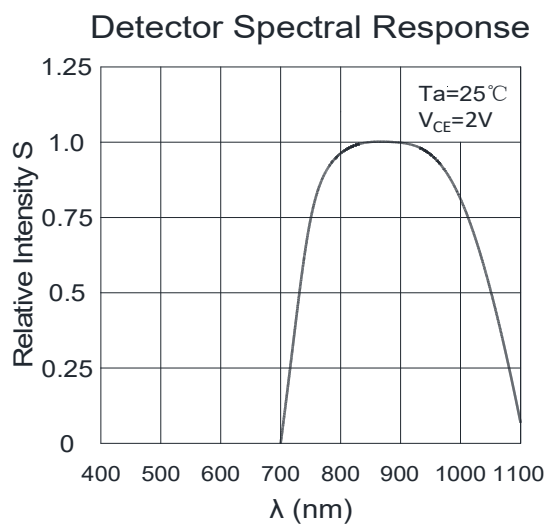
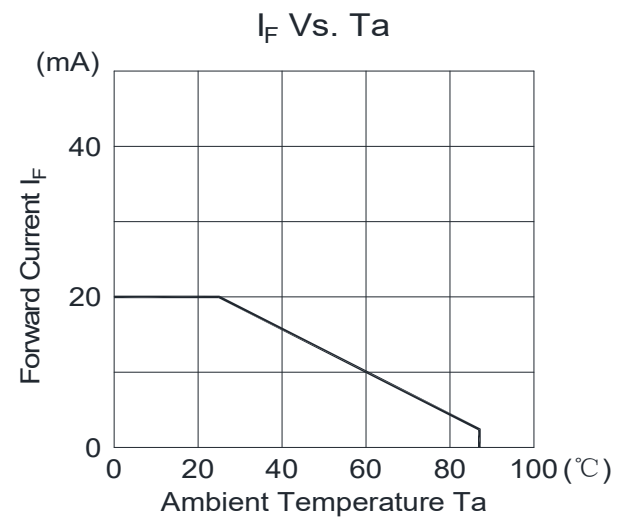
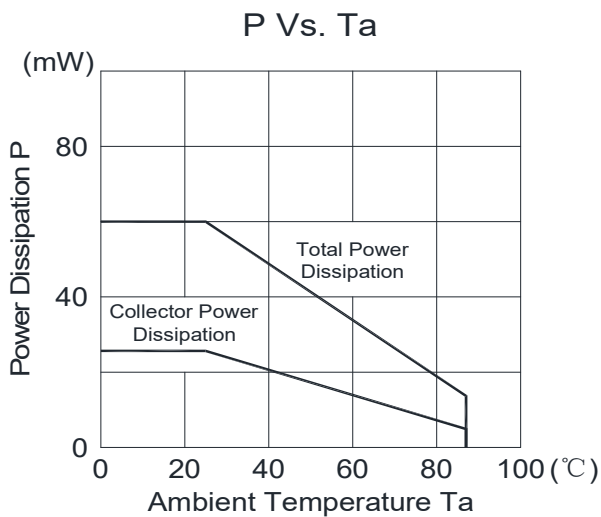
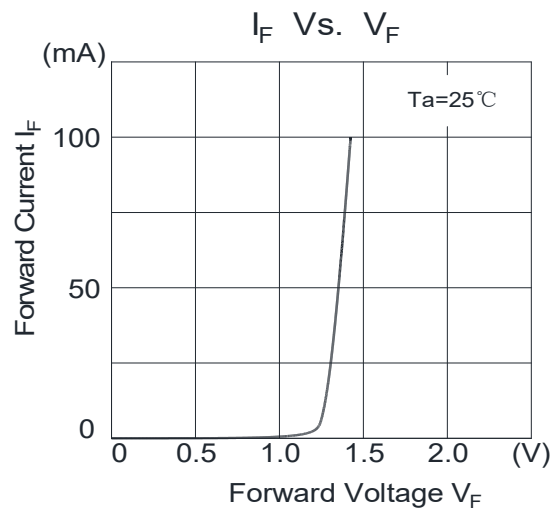
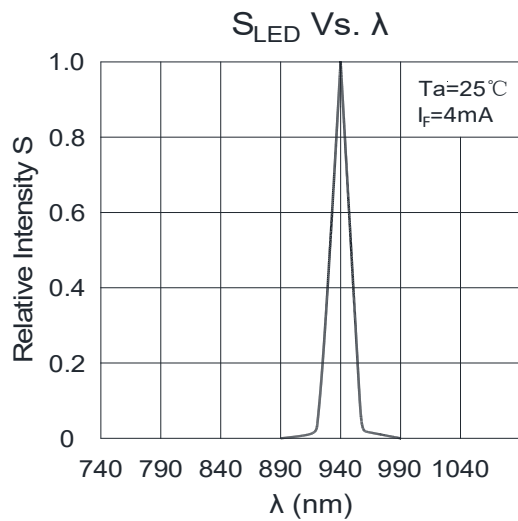
(Ta= 25°C)

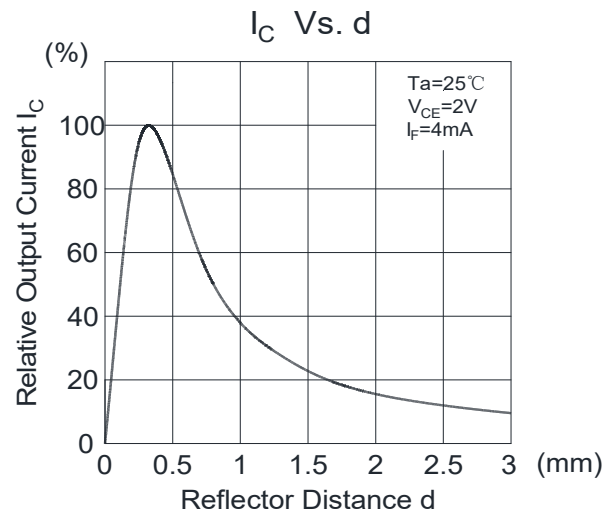
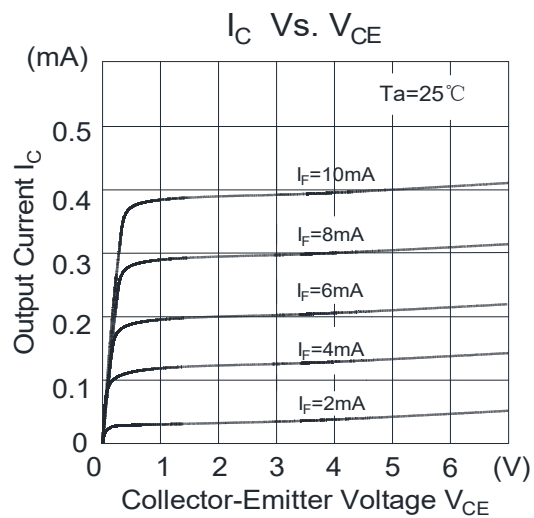
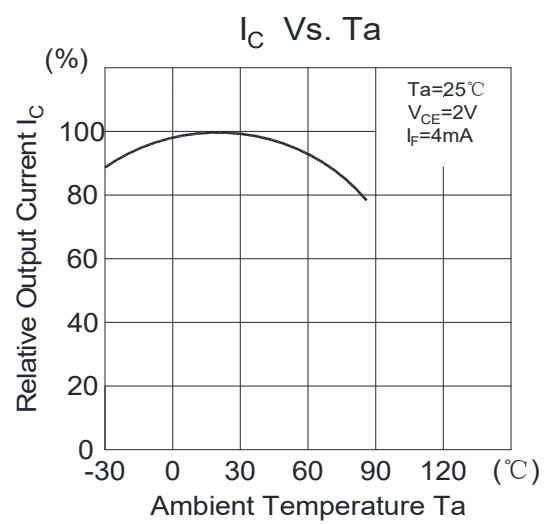
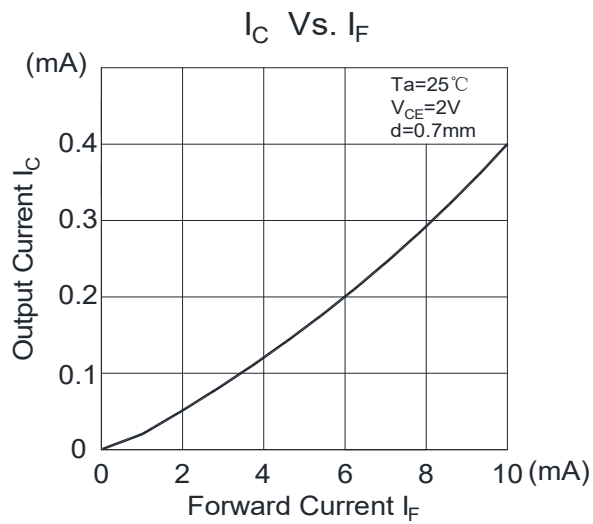
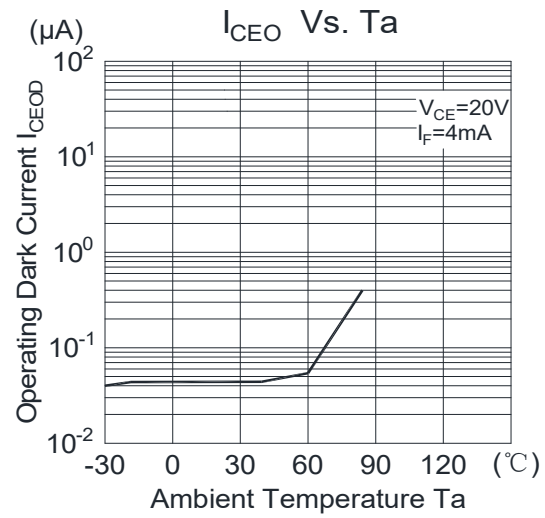
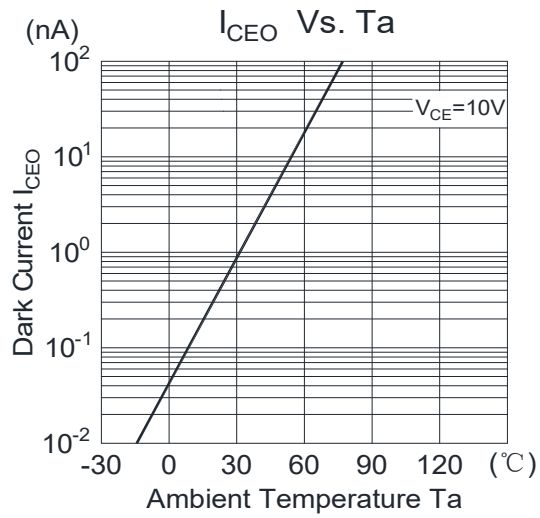
项目 Item	符号 Symbol	额定值 Rating	单位 Unit
Emitter	反向电压 Reverse Voltage	V_R	5
	正向电流 Forward Current	I_F	20
Detector	功耗 Collector Power Dissipation	P_C	25
	集电极电流 Collector Current	I_C	10
	集电极-发射极电压 Collector-Emitter Voltage	V_{CEO}	16
	发射极-集电极电压 Emitter-Collector Voltage	V_{ECO}	6
工作温度 Operating Temp.		Topr.	-30~+85
存储温度 Storage Temp.		Tstg.	-40~+100

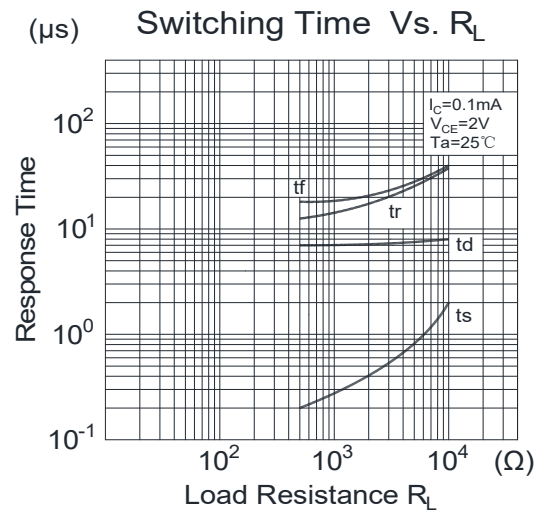
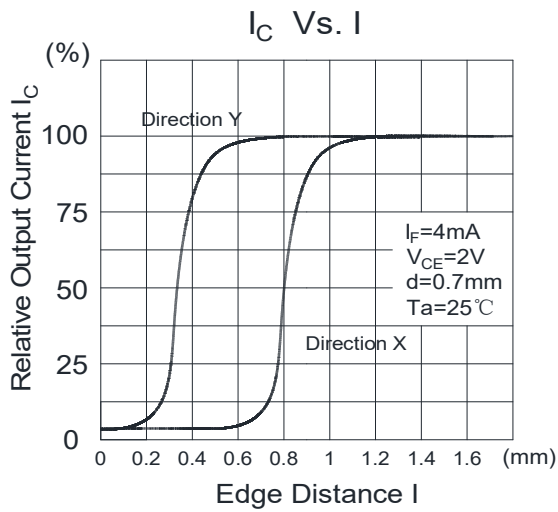
光电特性/Electro-Optical Characteristics

(Ta= 25°C)

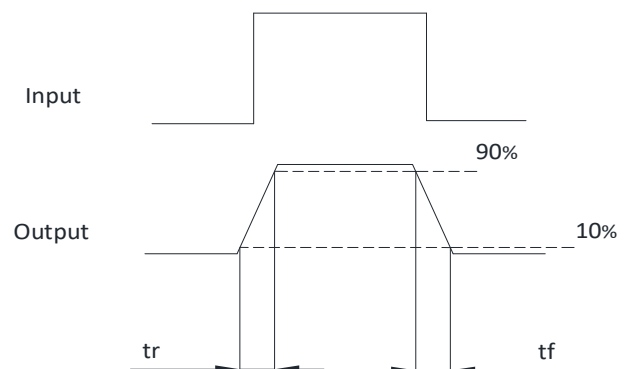
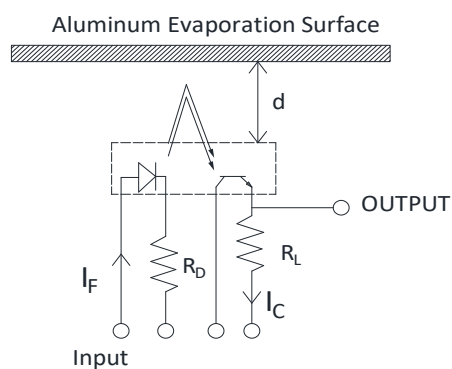
项目 Item	符号 Symbol	条件 Condition	最小 Min.	典型 Typ.	最大 Max.	单位 Unit
Emitter	反向电流 Reverse Current	I_R $V_R=5V$	-	-	10	μA
	正向压降 Forward Voltage	V_F $I_F=4mA$	0.9	-	1.3	V
	峰值波长 Peak Wavelength	λ_p $I_F=4mA$	-	940	-	nm
	电容 Capacitance	C $V_R=0V$ $f=1MHz$	-	25	-	pF
Detector	暗电流 Collector DarkCurrent	I_{CEO} $V_{CE}=10V$	-	-	200	nA
	饱和压降 Collector-Emitter Voltage	V_{CEO} $I_C=0.1mA$	16	-	-	V
	光谱响应 Spectrum	λ -	700-1100			nm
Coupled	输出电流 Output Current	I_C $I_F=4mA, V_{CE}=2V$ $d=0.7mm$ $R_D=R_L=0\Omega$	62	-	155	μA
	工作暗电流 Operating Dark Current	I_{CEOD} $I_F=4mA$ $V_{CE}=2V$ $R_D=R_L=0\Omega$	-	-	500	nA
	响应时间 Spectrum	t_r $I_C=0.1mA$ $V_{CE}=2V$	-	20	-	μs
		t_f $d=0.7mm$ $R_L=1K\Omega$	-	20	-	μs



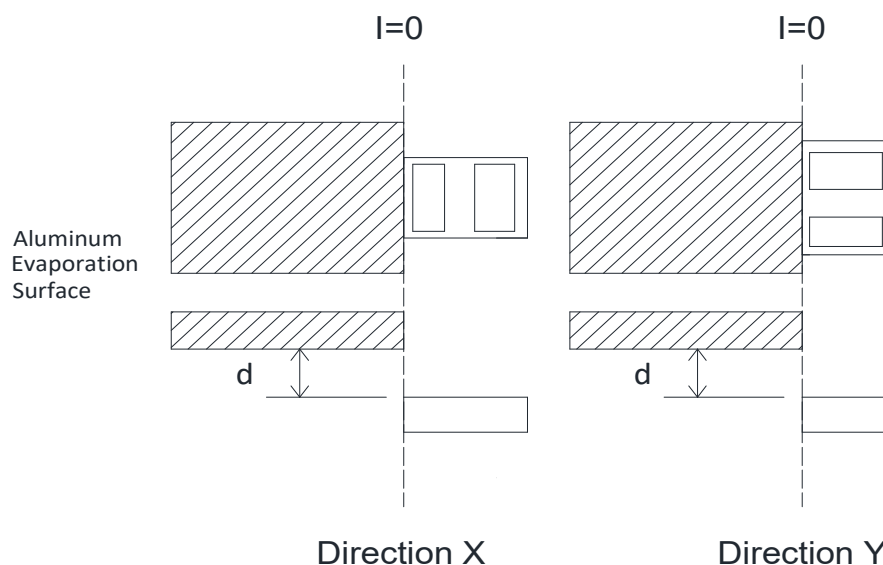




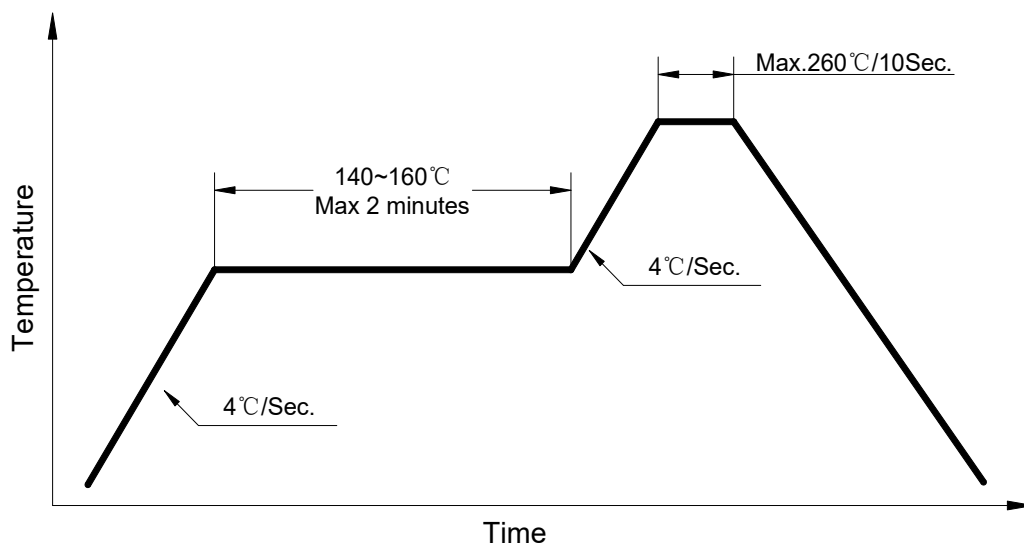
Output and Response Time Measurement Circuit



Edge Response Test Condition



回流焊曲线/Reflow Soldering Profile:



备注/Note:

- 密封包装存储温度为5—40℃，湿度为40—80%，时间为12个月。

Pack Sealing Temperature: 5 to 40°C. Humidity: 40 to 80 %,the duration is 12 months.

- 拆开包装后，将该器件存放在温度为5—40℃、湿度40—60%的环境中，并在48小时内对该器件进行回流焊。

After unpacking, store the device in an environment with a temperature of 5 to 40 °C and a humidity of 40 to 60%, and perform reflow soldering on the device within 48 hours.

- 如果没有满足上述条件，则再次焊接前需要进行烘烤，温度为60℃，时间为48—72小时，允许烘烤三次；或者温度为100℃，时间为2—6小时，允许烘烤三次。

If the above conditions are not met, baking is required before welding again, at a temperature of 60 °C for 48 to 72 hours, and three baking times are allowed. Alternatively, the temperature can be set at 100 °C for 2 to 6 hours, and baking is allowed three times.

- 在回流焊过程中施加到器件上的热应力因所使用的PCB和回焊炉而不同。

Thermal stress applied to the device during reflow soldering differs depending on the PC boards and reflow oven being used.

- 设置回流条件时，确保回流焊工艺不会降低器件的可靠性。

When setting the reflow conditions,make sure that the reflow soldering process does not degrade device reliability.

- 建议在焊接后使用酒精作为清洗溶剂，在 30℃下进行 3 分钟或在 50℃下进行 30 秒。

It is recommended to use alcohol as the cleaning solvent after welding, and operate at 30 °C for 3 minutes or 50 °C for 30 seconds.