

ITR523D

8ITR523D02SB0003

Datasheet

光遮断器（光电开关）



Features 产品特性

- Gap : 2 mm 间距 2 毫米
- Slit : 0.4 mm 狭缝:0.4 毫米
- Pb/Halogens free Pb /无卤素
- The product itself will remain within RoHS complian version
产品本身将保持在 RoHS 合规版本内
- Compliance with EU REACH 符合欧盟 REACH 规定
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm,Br+Cl < 1500ppm)
无卤素(Br < 900ppm, Cl < 900ppm,Br+Cl < 1500ppm)

Description 产品描述

- ITR523D is an ultra small outline photo-interrupter, integrating both infrared emitter and silicon phototransistor detector with plastic molding housing.
ITR523D 是一种超小轮廓光中断器，集成了红外发射器和硅光电晶体管检测器与塑料成型外壳。

Product Application 产品应用

- Printer 打印机
- Digital Camera 数码相机
- Optical switch 光开关

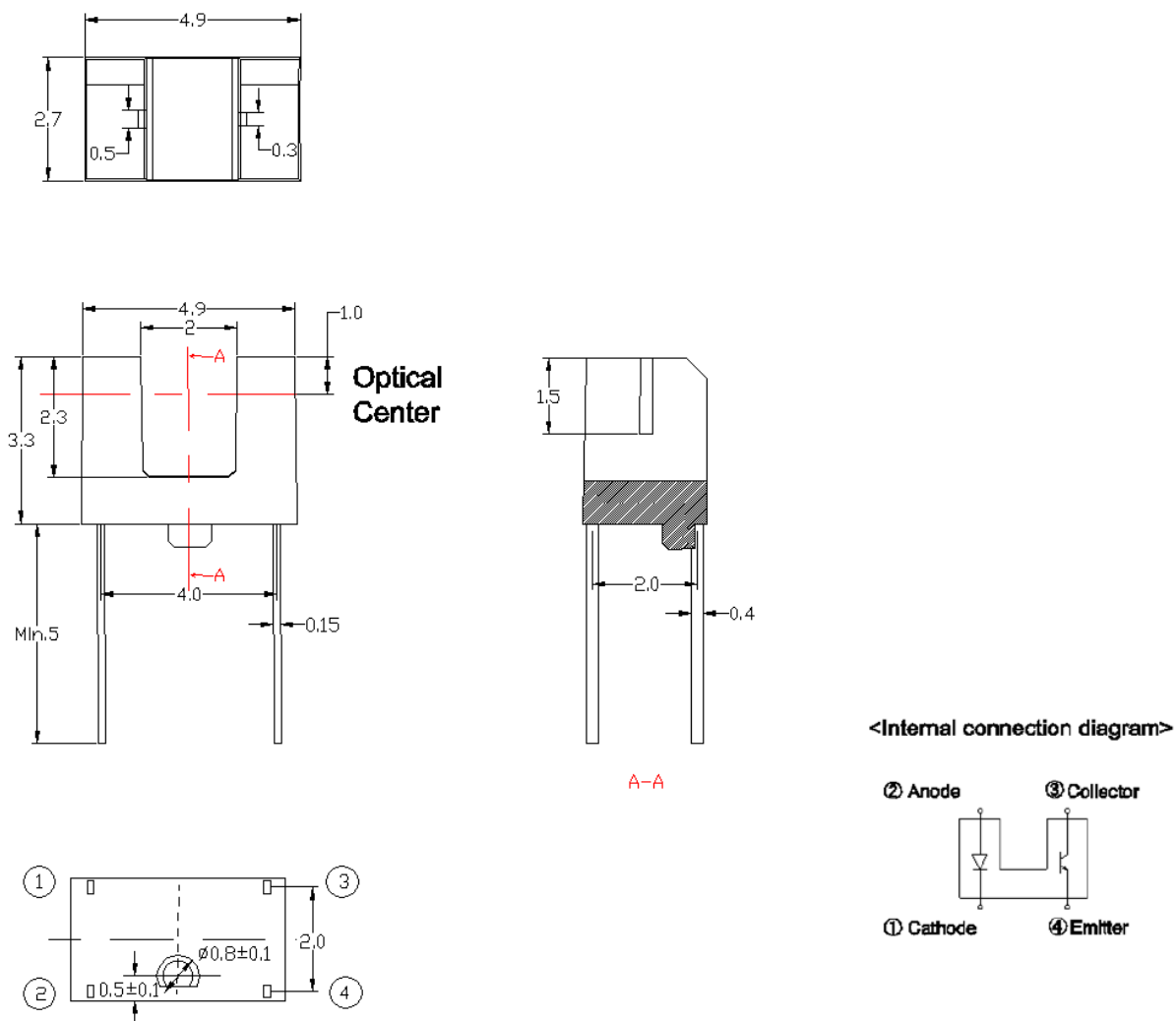
Device Selection Guide 设备选择指南

Device No.设备编号	Chip Material 芯片材料
IR	AlGaAs

Table of Contents 目录

Features 产品特性.....	1
Description 产品描述.....	1
Product Application 产品应用	1
Table of Contents 目录	2
Package Dimensions 包装尺寸	3
Absolute Maximum Ratings (Ta=25°C) 绝对最大额定值(Ta=25°C)	4
Electro-Optical Characteristics (Ta=25°C) 光电特性(Ta = 25°C)	5
Typical Electrical/Optical/Characteristics Curves 典型的电/光/特性曲线	6
Typical Electro-Optical Characteristics Curves 典型光电特性曲线	7
Measuring Circuit For Response Time 响应时间测量电路.....	8
Precautions For Use 预防措施.....	9
Revision history 修订历史	11
About Edison Opto 关于艾笛森.....	11

Package Dimensions 外形尺寸



Notes:

1. All dimensions are in millimeters. 所有尺寸都以毫米为单位
2. Tolerances: $\pm 0.2\text{mm}$. 公差: $\pm 0.2\text{毫米}$

Absolute Maximum Ratings (Ta=25°C) 绝对最大额定值(Ta=25°C)

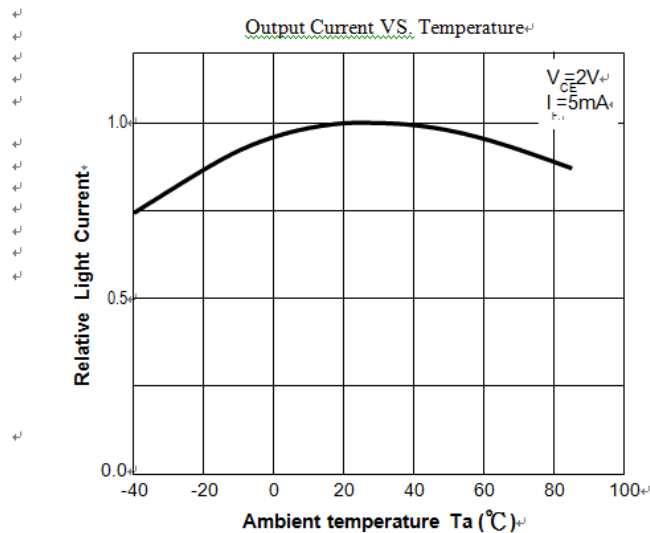
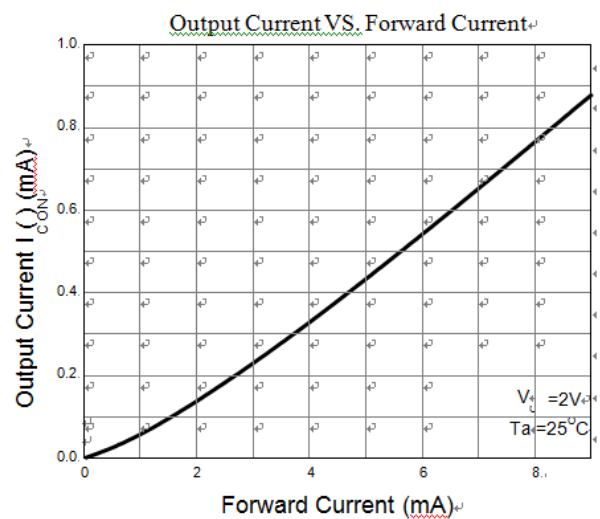
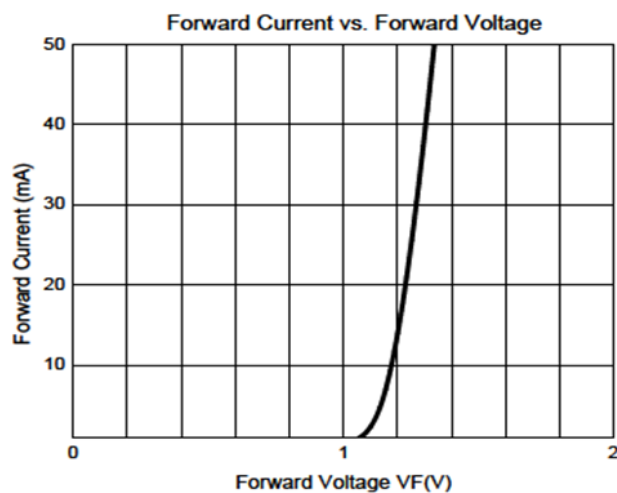
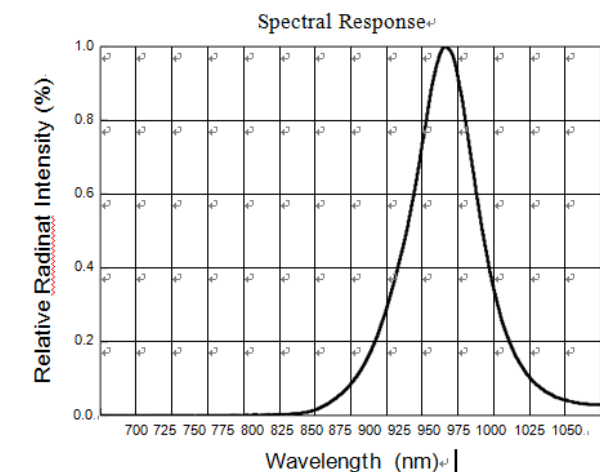
Parameter		Symbol	Rating	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	65	mW
	Reverse Voltage	VR	5	V
	Forward Current	IF	50	mA
	Peak Forward Current (*1)	IFP	1	A
	Collector Power Dissipation	PC	75	mW
Output	Collector Current	IC	20	mA
	Collector-Emitter Voltage	B VCEO	30	V
	Emitter-Collector Voltage	B VECO	5	V
	Operating Temperature	Topr	-25~+85	°C
Storage Temperature		Tstg	-30~+100	°C
Lead Soldering Temperature (*2)		Tsol	260	°C

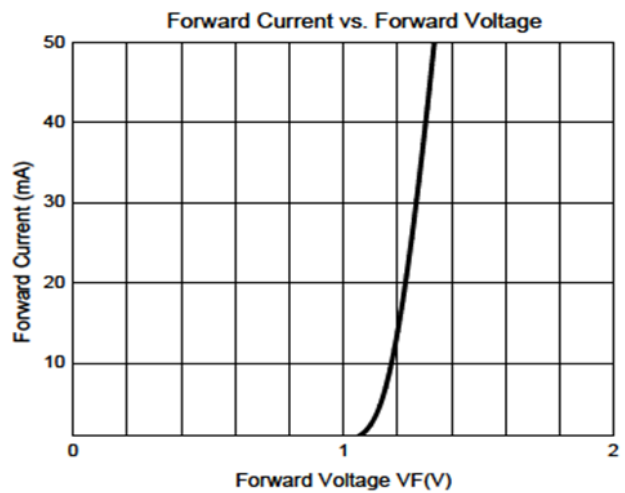
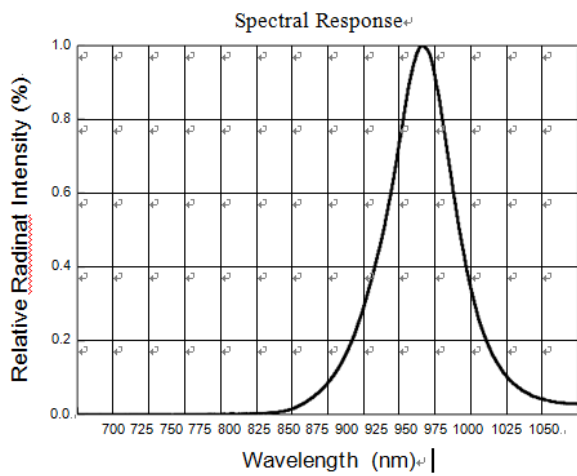
Notes: (* 1) Pulse width $t_w=100\ \mu\text{sec}$. ,Period $T=10\ \text{msec}$. (* 2) $2t \leq 5\ \text{Sec}$

Electro-Optical Characteristics (Ta=25°C) 光电特性(Ta = 25°C)

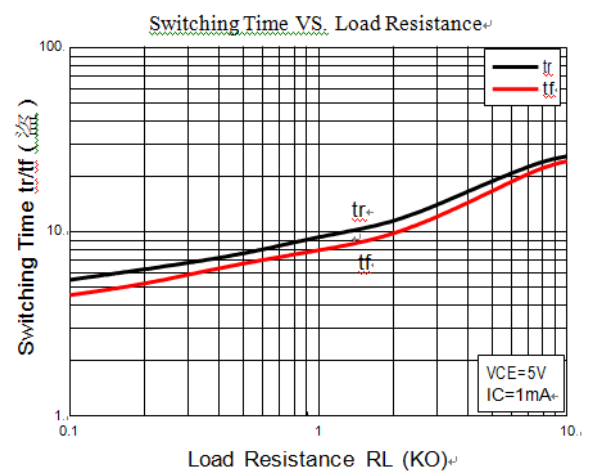
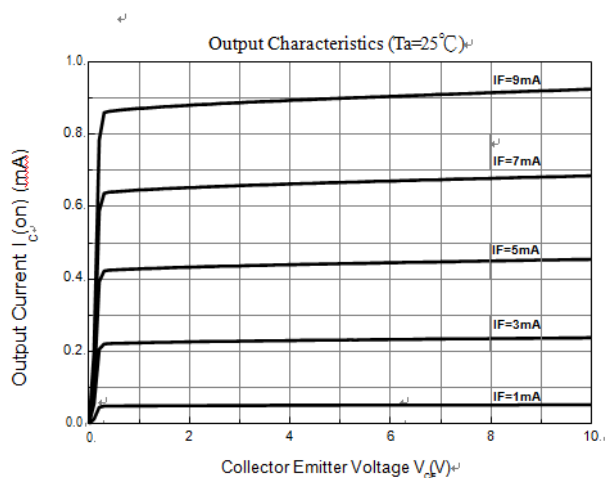
Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V _F	---	1.2	1.4	V	I _F =20mA
	Reverse Current	I _R	---	---	10	μA	V _R =5V
	Peak Wavelength	λ _P	---	940	---	nm	I _F =20mA
Output	Dark Current	I _{CEO}	---	---	100	nA	V _{CE} =20V
	C-E Saturation voltage	V _{CE(sat)}	---	---	0.4	V	I _C =0.05mA I _F =20mA
Transfer Characteristics	Collector Current	I _{C(ON)}	0.2	1.0	---	mA	V _{CE} =5V I _F =20mA
	Rise time	t _r	---	10	---	μs	V _{CE} =5V I _C =1mA
	Fall time	t _f	---	10	---	μs	RL=1K □

Typical Electrical/Optical/Characteristics Curves 典型的电/光/特性曲线

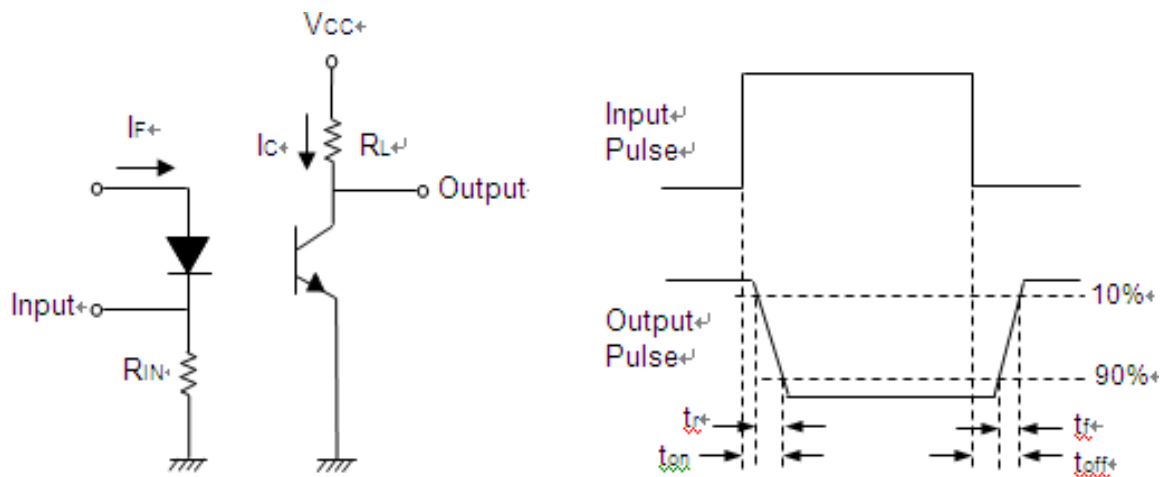




Typical Electro-Optical Characteristics Curves 典型光电特性曲线



Measuring Circuit For Response Time 响应时间测量电路



Precautions For Use 预防措施

1. Storage 存储

Do not open moisture proof bag before the products are ready to use.

在产品准备使用之前，不要打开防潮袋。

Before opening the package, the device should be kept at 30°C or less and 90% RH or less.

打开包装前，设备应保持在30°C及90%RH以下。

The device should be used within a year. 该设备应在一年内使用。

After opening the package, the device should be kept at 30°C or less and 70% RH or less.

打开包装后，设备应保存在30°C及70%RH以下。

The device should be used within 168 hours (7 days) after opening the package.

设备应在打开包装后的168小时(7天)内使用。

If the moisture absorbent material (silica gel) has faded away or the device have exceeded the storage time, baking treatment should be performed using the following conditions. 如果吸湿材料(硅胶)已经褪色或设备已经超过储存时间，应在以下条件下进行烘烤处理。

Baking treatment : 60±5°C for 24 hours. 烘烤处理:60±5°C 烘烤 24 小时。

2. Soldering Condition 焊接条件

Pb-free solder temperature profile 无铅焊锡温度剖面

Avoiding applying any stress to the lead frame while the Photo Interrupter are at high temperature particularly when soldering. 在高温焊接时，避免对引线框架施加任何压力

Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.

焊接时应特别注意。焊接时，焊点与环氧胶体距离应大于 3mm 且焊接处要在支架 bar 以下

Dip and hand soldering should not be done more than one time 波峰焊和手焊接应该一次性完成

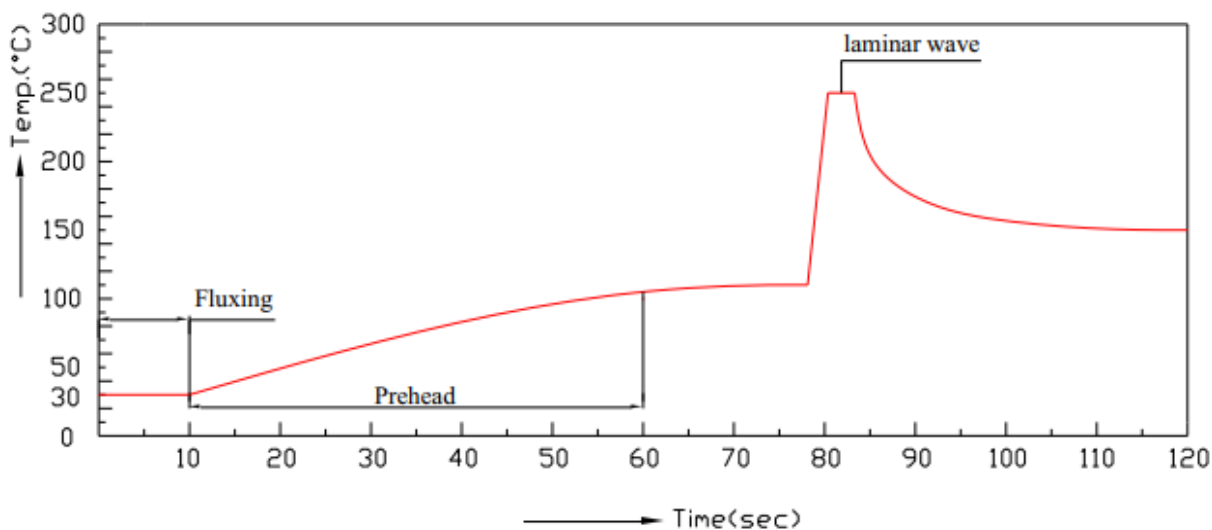
After soldering the Photo Interrupter, the epoxy bulb should be protected from mechanical shock or vibration until the Photo Interrupter return to room temperature. 焊接完成后，在光电开关恢复常温前，避免受到外力冲击和振动

A rapid-rate process is not recommended for cooling the Photo Interrupter down from the peak temperature. 不得快速将光电开关从峰值温度冷却

Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the Photo Interrupter.

虽然在上表中已指定了推荐的焊接条件，但对于光电开关来说浸锡或手工焊接尽可能在最低温度下进行

Recommended soldering profile 建议焊接曲线:



3.Soldering Iron 烙铁

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder. 每个端子去烙铁的尖端温度小于 350°C 3 秒内一次在小于烙铁容量 25W。留出两秒以上的间隔，对每个端子进行焊接。要小心，因为产品的损坏往往是从手工焊接的时候开始的。

4.Repairing 修复

Repair should not be done after the device have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the device will or will not be damaged by repairing.

设备焊接后不应进行修理。不可避免的修理时，应使用双头烙铁。应事先确认设备的特性是否会因修理而受损。

Revision history 修订历史

Versions 版本	Description	Release Date
1.0	Preliminary 初定	2023/07/30

About Edison Opto 关于艾笛森

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at www.edison-opto.com

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