

规格书

SPECIFICATION

型号： MODEL：	YC20005-F
版本号： REV：	V1.0

客户承认 APPROVED BY CUSTOMER		
确认意见 COMMENTS	审核 CHECKED BY	批准 APPROVED BY

客户承认签章后敬请回传正本一份

Please kindly countersign the document and send it back for our record

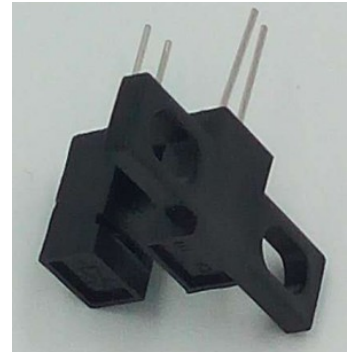
Technical Data Sheet

Opto Interrupter

YC20005-F

■ Features

- Fast response time
- High analytic
- Cut-off visible wavelength $\lambda_p=940\text{nm}$
- High sensitivity
- Pb free
- This product itself will remain within RoHS compliant version



■ Descriptions

The **YC20005-F** consist of an infrared emitting diode and an NPN silicon phototransistor, encased side-by-side on converging optical axis in a black thermoplastic housing .The phototransistor receives radiation from the IR only .This is the normal situation. But when an object is between the IR and PT, phototransistor could not receives the radiation. For additional component information, please refer to IR and PT.

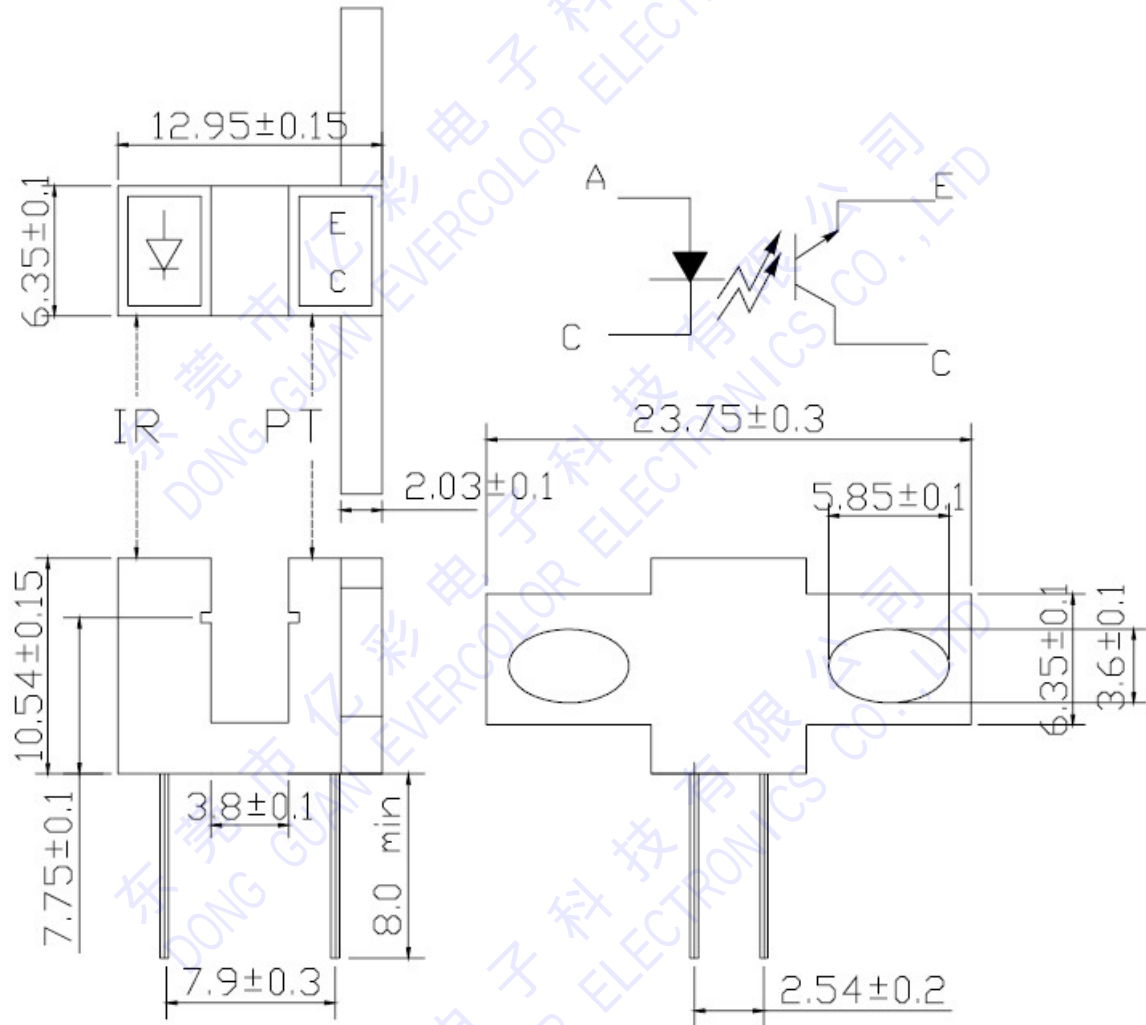
■ Applications

- Mouse Copier
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

■ Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR	GaAlAs	Water clear
PT	Silicon	Water clear

Package Dimensions



注：引脚长度可定制

1. All dimensions are in millimeters
2. Tolerances unless dimensions $\pm 0.25\text{mm}$
3. Lead spacing is measured where the lead emerge from the package

东莞市亿彩电子科技有限公司

DONG GUAN EVERCOLOR ELECTRONICS CO., LTD.

YC20005-F

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (*1) Pulse width ≤100 μs, Duty cycle=1%	I _{FP}	1	A
Output	Collector Power Dissipation	P _C	75	mW
	Collector Current	I _C	20	mA
	Collector-Emitter Voltage	B V _{CEO}	30	V
	Emitter-Collector Voltage	B V _{ECO}	5	V
Operating Temperature		Topr	-25~+85	°C
Storage Temperature		Tstg	-40~+100	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	°C

(*1) tw=100 μsec., T=10 msec. (*2) t=5 Sec

Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V _F	---	1.2	1.5	V	I _F =20mA
	Reverse Current	I _R	---	---	10	μA	V _R =5V
	Peak Wavelength	λ _p	---	940	---	nm	I _F =20mA
	View Angle	2θ1/2	---	40	---	Deg	I _F =20mA
Output	Dark Current	I _{CEO}	---	---	100	nA	V _{CE} =20V, Ee=0mW/cm ²
	C-E Saturation Voltage	V _{CE(sat)}	---	---	0.4	V	I _C =2mA Ee=1mW/cm ²
Transfer Characteristics	Collect Current	I _{C(ON)}	0.5	---	---	mA	V _{CE} =5V I _F =20mA
	Rise time	t _r	---	15	---	μsec	V _{CE} =5V I _C =1mA R _L =1KΩ
	Fall time	t _f	---	15	---	μsec	

Typical Electrical-Optical Characteristics Curves for IR

Fig.1 Forward Current vs.

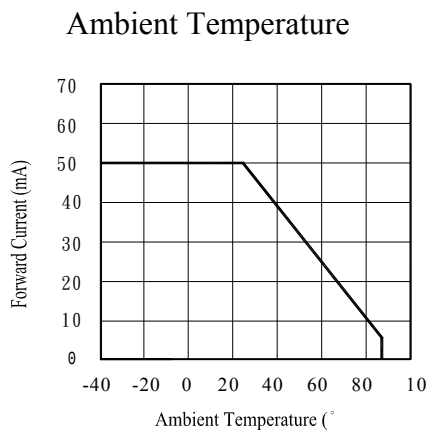


Fig.2 Spectral Distribution

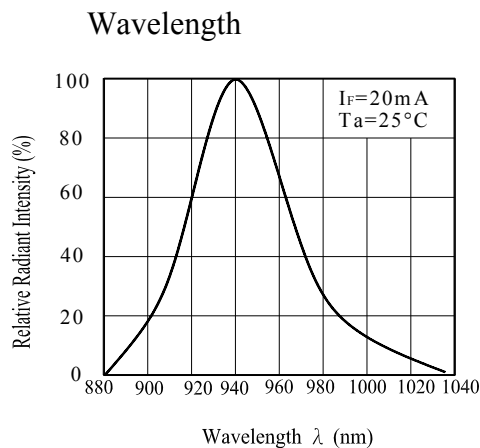


Fig.3 I_e-Radiant Intensity vs.

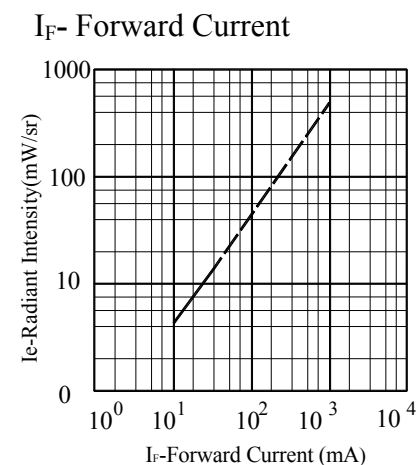


Fig.4 Relative Radiant Intensity vs.

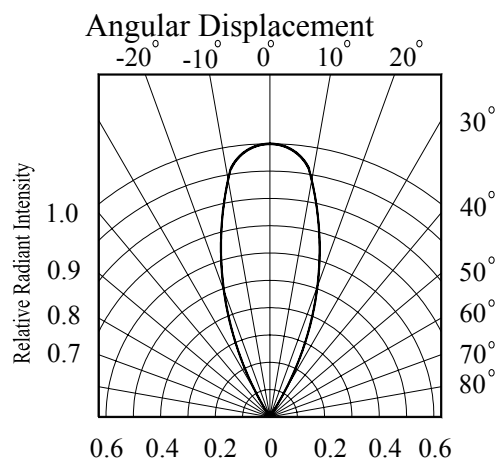


Fig.5 I_e-Radiant Intensity vs.

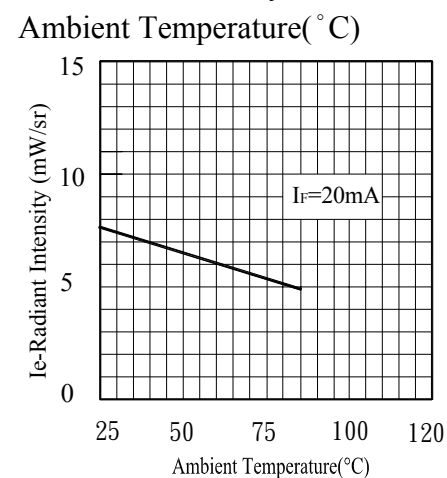
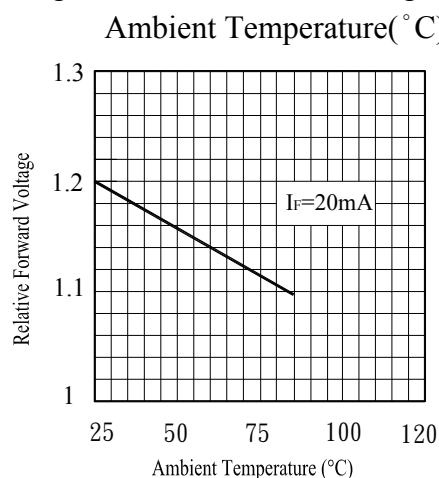


Fig.6 Relative Forward Voltage vs.



Typical Electrical-Optical Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

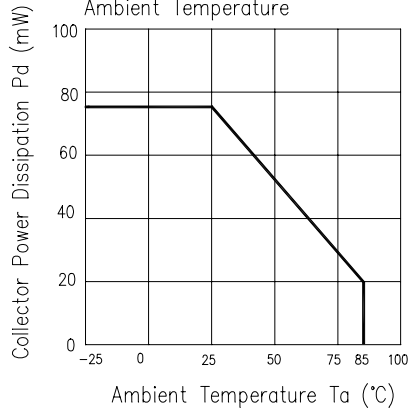


Fig.2 Collector Dark Current vs. Ambient Temperature

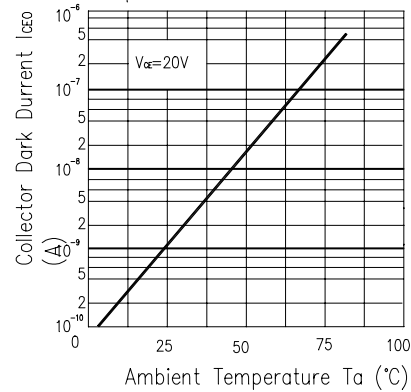


Fig.3 Relative Collector Current vs. Ambient Temperature

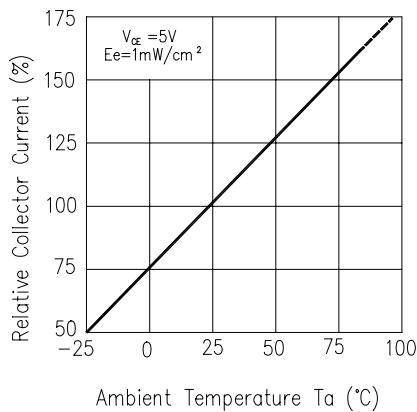


Fig.4 Collector Current vs. Irradiance

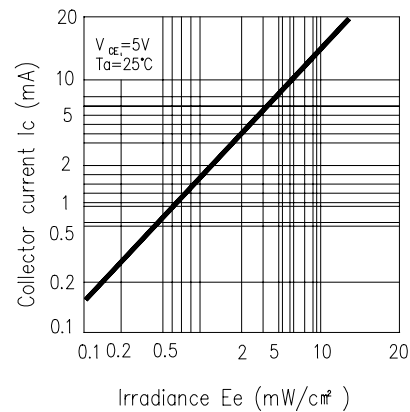


Fig.5 Spectral Sensitivity

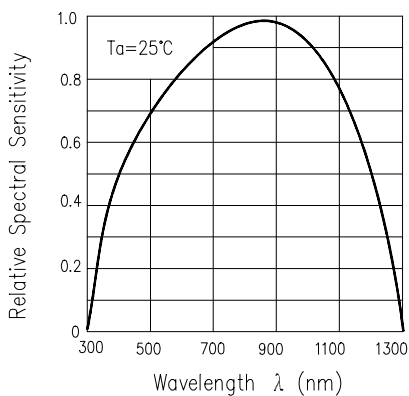
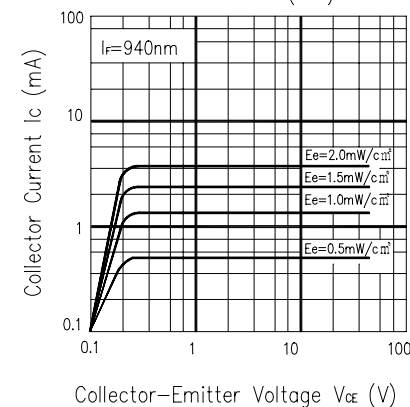


Fig.6 Collector Current vs. Collector Current Ic (mA)



东莞市亿彩电子科技有限公司

DONG GUAN EVERCOLOR ELECTRONICS CO., LTD.

YC20005-F

Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

NO.	Item	Test Condition	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5°C	10sec	22 PCs	Attenuation of Light Current value>20%	0/1
2	Temperature Cycle	H : +100°C 15 mins ↕ 5 min L : -40°C 15 mins	300 cycle	22 PCs		0/1
3	Thermal Shock	H : +100°C 5 min ↕ 10 sec L : -10°C 5 min	300 cycle	22 PCs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 PCs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000 hrs	22 PCs		0/1
6	DC Operating Life	V _{CE} =5V I _F =20mA	1000 hrs	22 PCs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 PCs		0/1

东莞市亿彩电子科技有限公司

DONG GUAN EVERCOLOR ELECTRONICS CO., LTD.

YC20005-F

Packing Quantity Specification

200Pcs/Bag,4Bag/Box,10Boxes/Carton

Label Form Specification

		
CPN: P/N:		
		
YC20005-F		
QTY:	CAT:	
	HUE:	
LOT NO:	REF:	
		
Reference		
		

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

X: Month

Reference: Identify Label Number

Notes

- 1.All dimensions are in millimeters
- 2.Tolerances unless dimensions $\pm 0.25\text{mm}$
- 3.Lead spacing is measured where the lead emerge from the package
- 4.Above specification may be changed without notice. Dong Guan YICAI will reserve authority on material change for above specification
- 5.These specification sheets include materials protected under copyright of Dong Guan YICAI corporation . Please don't reproduce or cause anyone to reproduce them without Dong Guan YICAI 's consent
- 6.When using this product , please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. Dong Guan YICAI assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.