Harvatek 13*6*10mm Transmissive Sensor

HV-21S130100/S11C

DISCLAIMER

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LIFE SUPPORT POLICY

HARVATEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of HARVATEK or HARVATEK INTERNATIONAL. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.

2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant

Orderable Information

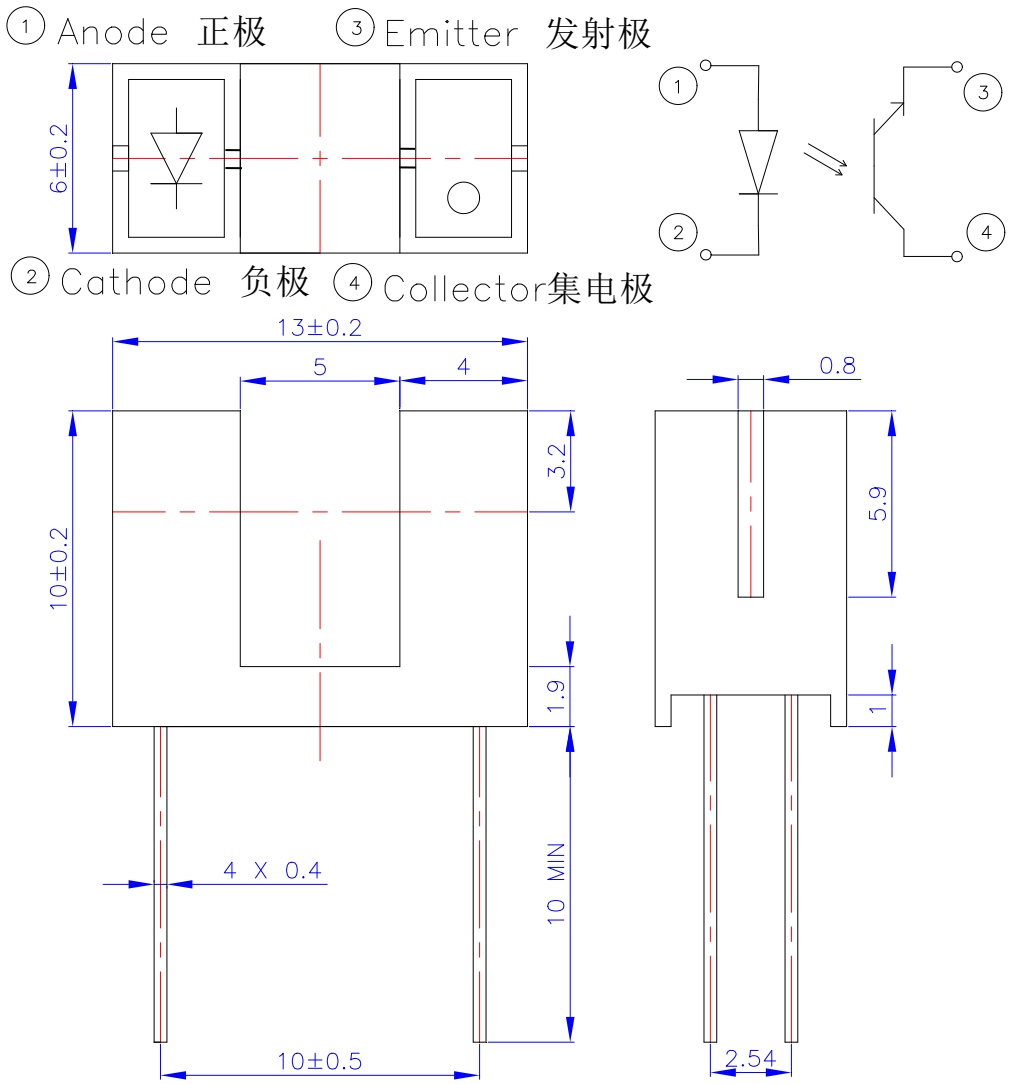
H V - 21 S 130 100 / S 11 C

Series Name	Color Code	Remark
HV : **HARVATEK**	**21S130100 :** **13*6*10mm Transmissive Sensor.** **With AlGaAs Infrared emitter &** **Silicon Phototransistor.** **S11 : HARVATEK Part No.** **C : Water Clear**	

Features:

- Low power consumption.
- High analytic.
- Fast response.
- Good lock and easy to assembly.

Package Dimensions



Notes:

1.All dimensions are millimeters.

2.Tolerance is +/-0.25mm unless otherwise noted.

3.Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameter		Symbol	Rating	Unit
Emitter	Forward Current	IF	50	mA
	Power Dissipation	Pd	75	mW
	Reverse Voltage	VR	5	V
	Peak Forward Current *1	IFp	1	A
Receiver	Collector Current	Ic	20	mA
	Power Dissipation	Pd	75	mW
	Collector-Emitter Voltage	Vceo	30	V
	Emitter-Collector Voltage	Veco	5	V
Operating Temperature		Topr	-40to+85	℃
Storage Temperature		Tstg	-40to+100	℃
Soldering Temperature *2		Tsol	260±5	℃

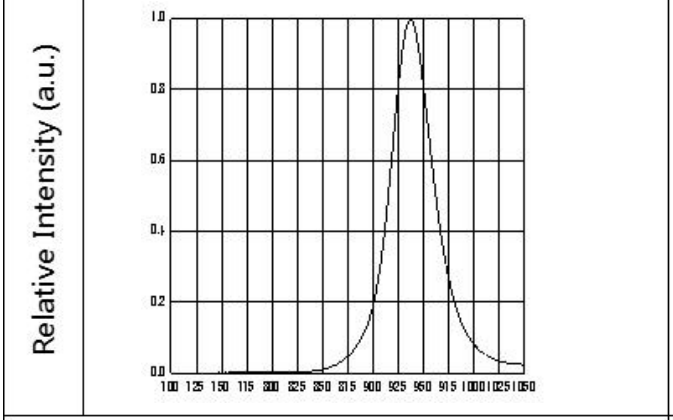
*1: Pulse Width≦ 100 μs and Duty≦ 1% *2: Soldering time ≦ 5 seconds.

Electrical and Optical Characteristic

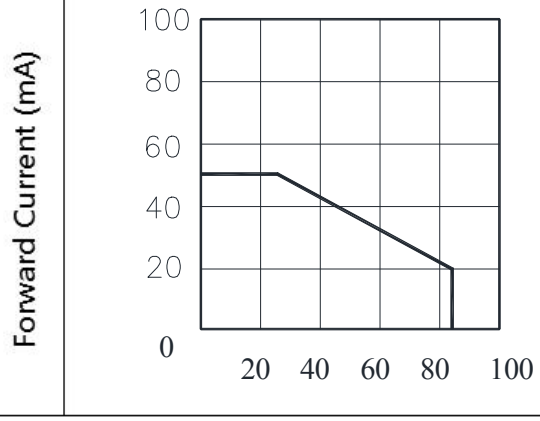
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Emitter	Forward Voltage	V_F	I_F=20 mA	/	1.2	1.5	V
	Reverse Current	I_R	V_R= 5 V	/	/	10	μA
	Peak Wavelength	λρ	I_F=20 mA	930	940	/	nm
Receiver	Dark Current	Id	V_{CE}=20V	/	/	100	nA
	C-E Saturation	Vce(sat)	I_C=0.5mA I_F=20 mA	/	/	0.4	V
Transfer Characteristics	Collect Current	$I_{C(ON)}$	V_{CE}=5V I_F=20 mA	0.5	/	/	mA
	Rise time	T_r	V_{CE}=5V I_C=1mA R_L=1K Ω	/	15	/	μ sec
	Fall time	T_f		/	15	/	μ sec

Typical Electro-Optical Characteristics Curves For IR

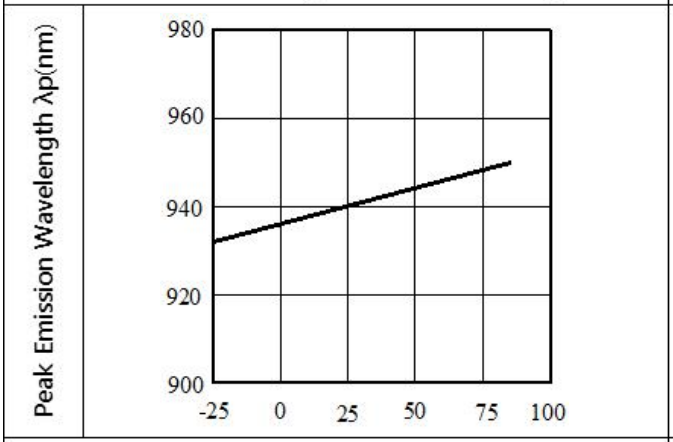
Spectral Distribution



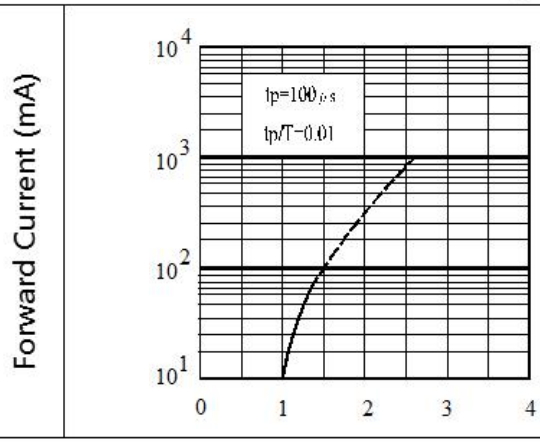
Forward Current vs. Ambient Temp.



Peak Emission Wavelength vs.Ambient Temperature

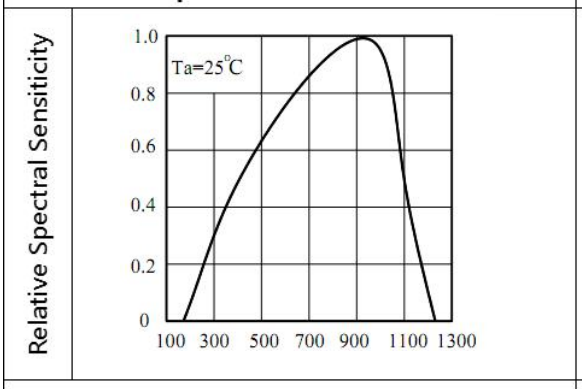


Forward Current vs. Forward Voltage

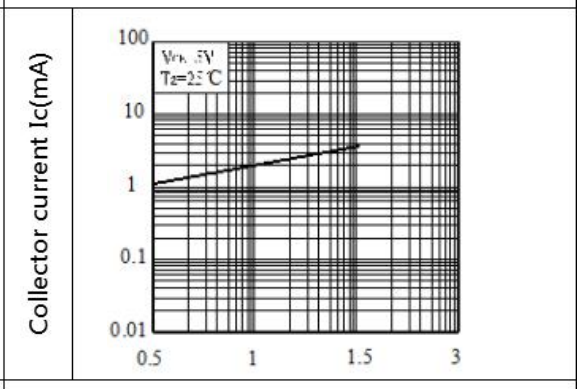


Typical Electro-Optical Characteristics Curves For PT

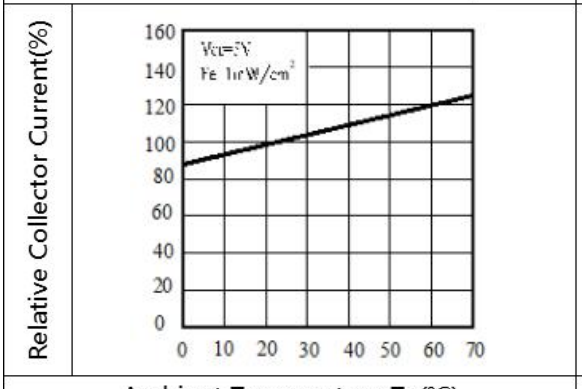
Spectral Distribution



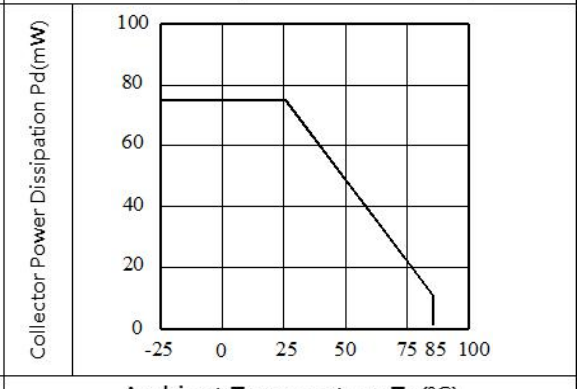
Collector Current vs.Irradiance



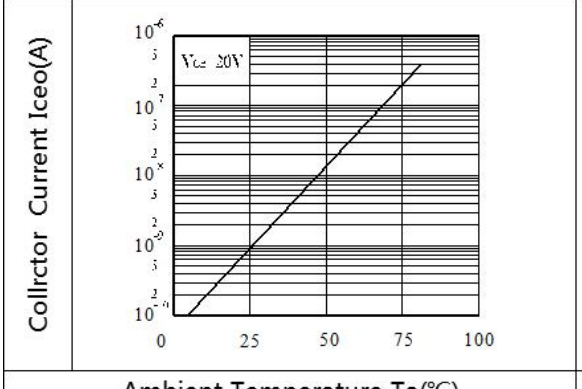
Relative Collector Current vs.Ambient Temperature



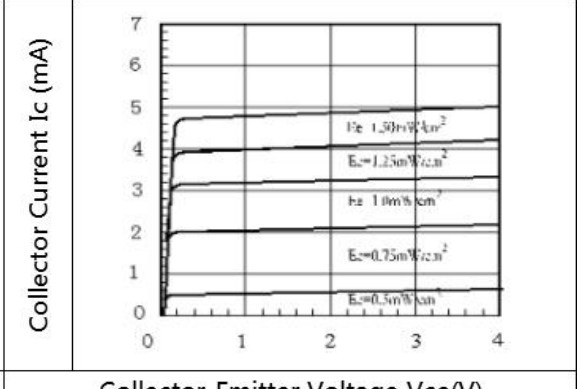
Collector Power Dissipation vs.Ambient Temperature



Collector Dark Current vs.Ambient Temperature



Collector Current VS.Collector-Emitter Voltage



Reliability test items and conditions：

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

Confidence level：97%

LTPD:3%

No	Item	Test Conditions	Test Hours/Cycle	Sample Size	Failure Judgment Criteria	Ac/Er
1	Solder Heat	TEMP:260℃±5℃	10 SEC	76 PCS	Iv≦Ivt*0.5 or Vf≧U or Vf≦L	0/1
2	Temperature Cycle	H:+100℃ 15min ∫ 5min L:-40℃ 15min	300 CYCLES	76 PCS		0/1
3	Thermal Shock	H:+100℃ 5min ∫ 10sec L:-10℃ 5min	300 CYCLES	76 PCS		0/1
4	High Temperature Storage	TEMP:100℃	1000 HRS	76 PCS		0/1
5	Low Temperature Storage	TEMP:-40℃	1000 HRS	76 PCS		0/1
6	DC Operating Life	TEMP:25℃ IF=20mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 HRS	76 PCS		0/1

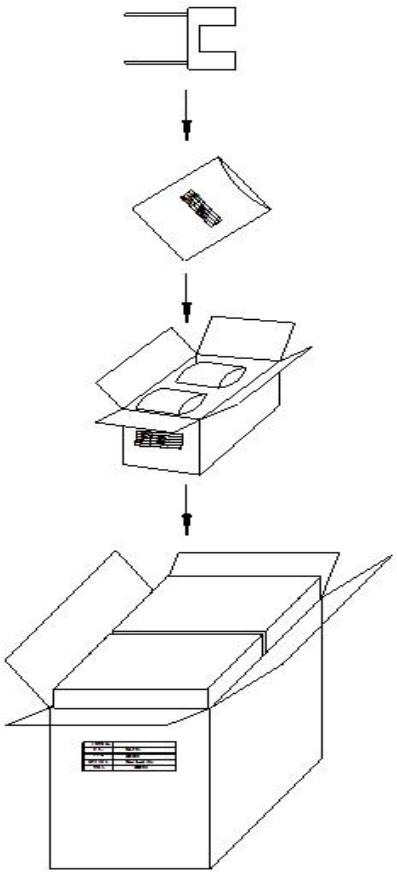
Note：Ivt：To test Iv value of the chip before the reliability test.

Iv：The test value of the chip that has completed the reliability test

U：Upper Specification Limit

L：Lower Specification Limit

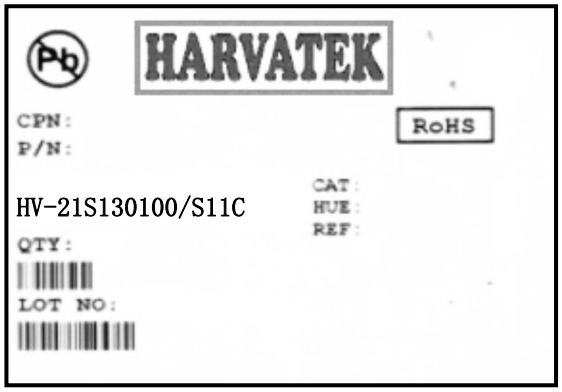
Packing Specification:



150PCS/Bag

750PCS/In-Carton

7500PCS/Out-Carton



Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	08-09-2018
Modifies Electrical and Optical Characteristic	6	1.1	11-11-2019