Harvatek 25*6*10 mm Transmissive Sensor

HV-21S025010-S15C-J0002

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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

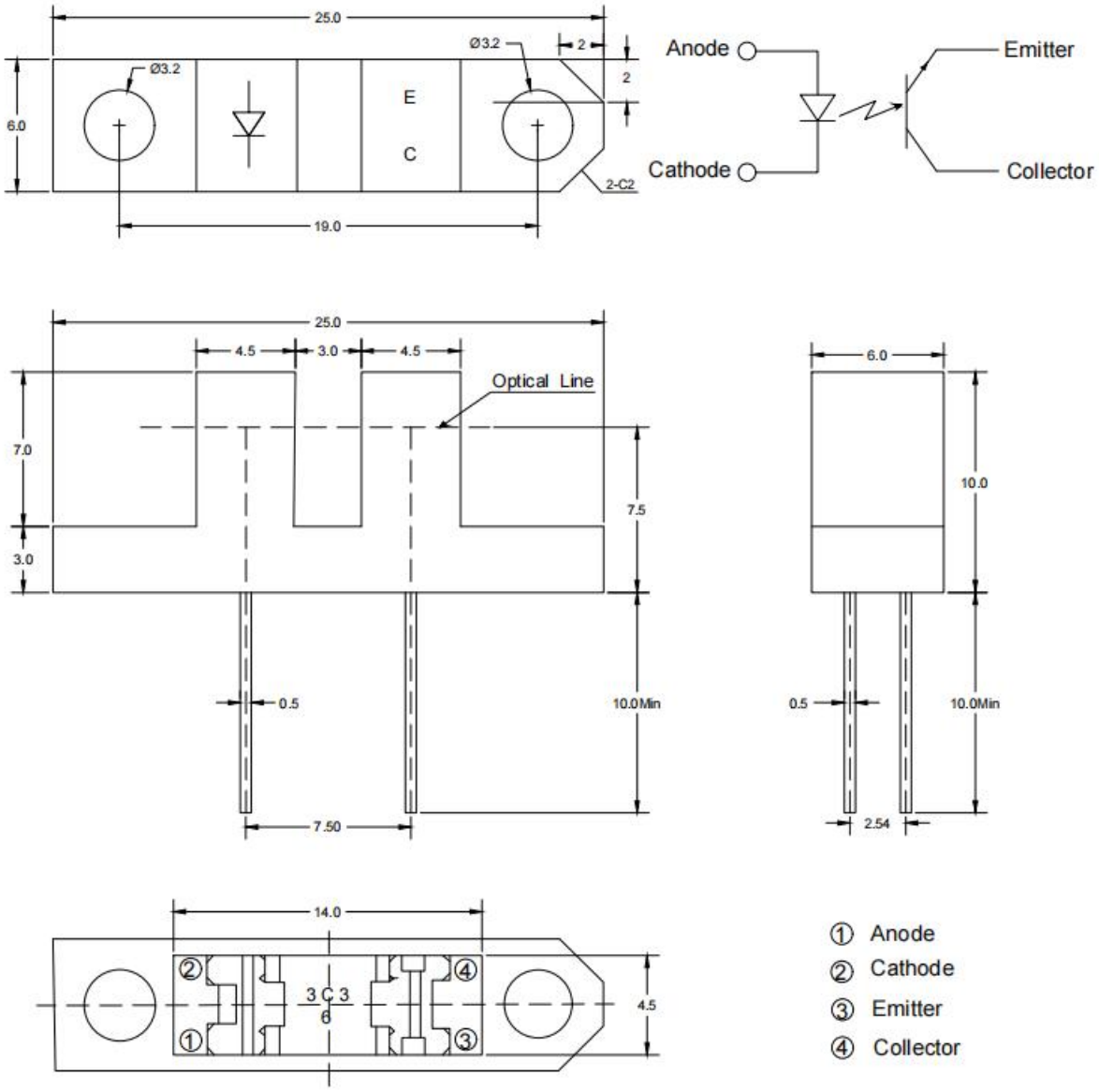
H V - 21 S 025 010 - S15C - J0002

Series Name	Color Code	Remark
HV : **HARVATEK**	**21S025010:** **25*6*10mm Transmissive Sensor** **With GaAlAs Infrared emitter & Silicon Phototransistor.** **S15C : HARVATEK Part No.**	**J0002:** **Customer Product Code**

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	Ratings	Unit
Input Emitter	Power Dissipation *1	Pd	75	mW
	Reverse Voltage	VR	5	V
	Forward Current	IF	50	mA
	Peak Forward Current *2	IFP	0.5	A
Output Detector	Power Dissipation *1	Pd	75	mW
	Collector-Emitter Voltage	VCEO	35	V
	Emitter-Collector Voltage	VECO	5	V
	Collector Current	IC(ON)	20	mA
Operating Temperature		Topr	-25~+85	C
Storage Temperature		Tstg	-40~+85	C
Lead Soldering Temperature*3		Tsol	260	C

Note:

*1 、 below 25 Free Air Temperature.

*2 、 Pulse width≦100μs,Duty cycle= 1%.

*3 、 2mm form body for 5 seconds.

Electrical and Optical Characteristic

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward Voltage	VF	IF=20mA	--	1.2	1.5	V
	Peak Wavelength	λρ	IF=20mA	--	940	--	nm
	Reverse Current	IR	VR=5V	--	--	10	μA
Output	Dark Current	ICEO	Ee=0mW/cm2 VCE=10V	--	--	100	nA
	C-E Saturation Voltage	VCE(SAT)	IC=2mA Ee=1mW/cm2	--	--	0.4	V
Transfer Characteristics	Rise Time	Tr	VCE=5V IC=1mA RL=1000Ω	--	15	--	μS
	Fall Time	Tf		--	15	--	
	Collector Current	IC(ON)	IF=10mA VCE=5V	--	3.0	--	mA

Typical Electro-Optical Characteristics Curves For IR

Fig.1 Forward Current vs. Ambient Temperature

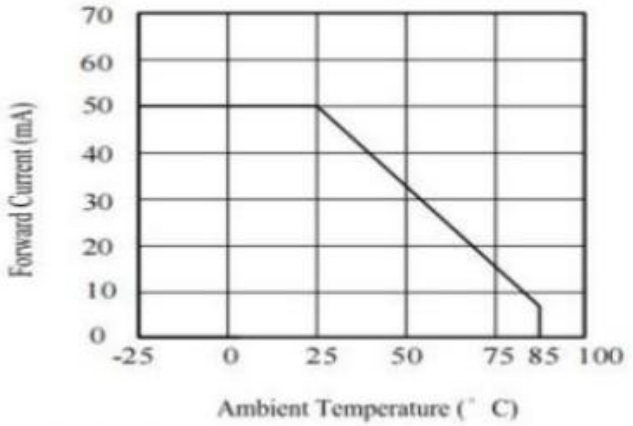


Fig.2 Spectral Distribution

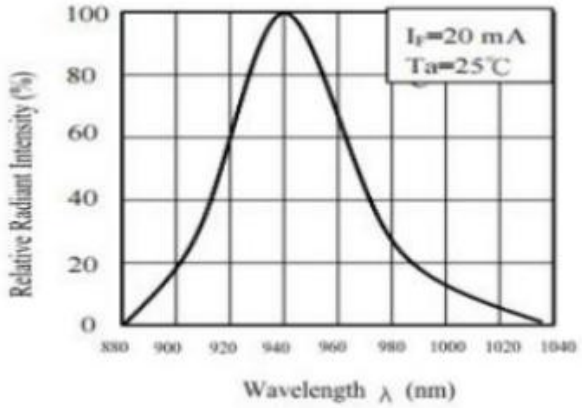


Fig.3 Peak Emission Wavelength Ambient Temperature

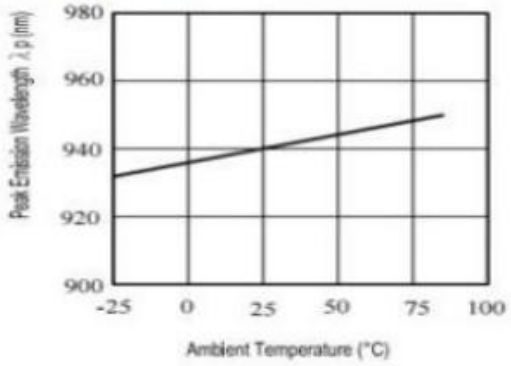


Fig.4 Forward Current vs. Forward Voltage

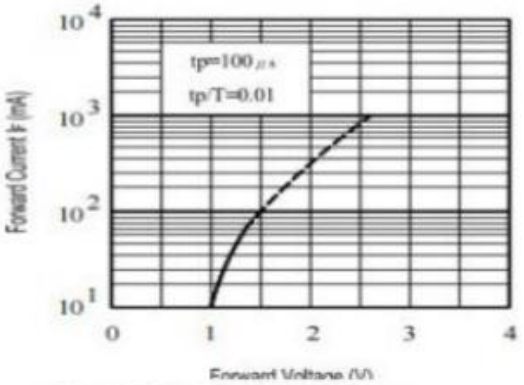


Fig.5 Forward Voltage vs. Ambient Temperature(˚C)

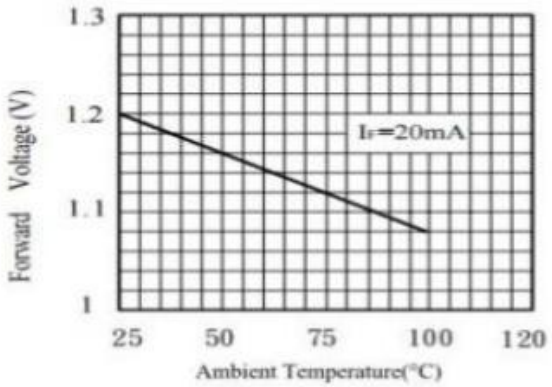
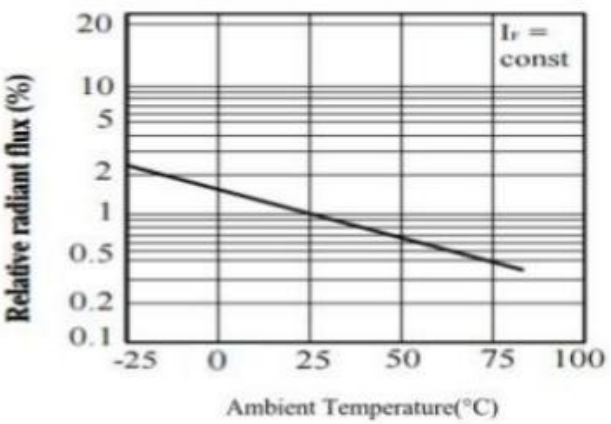
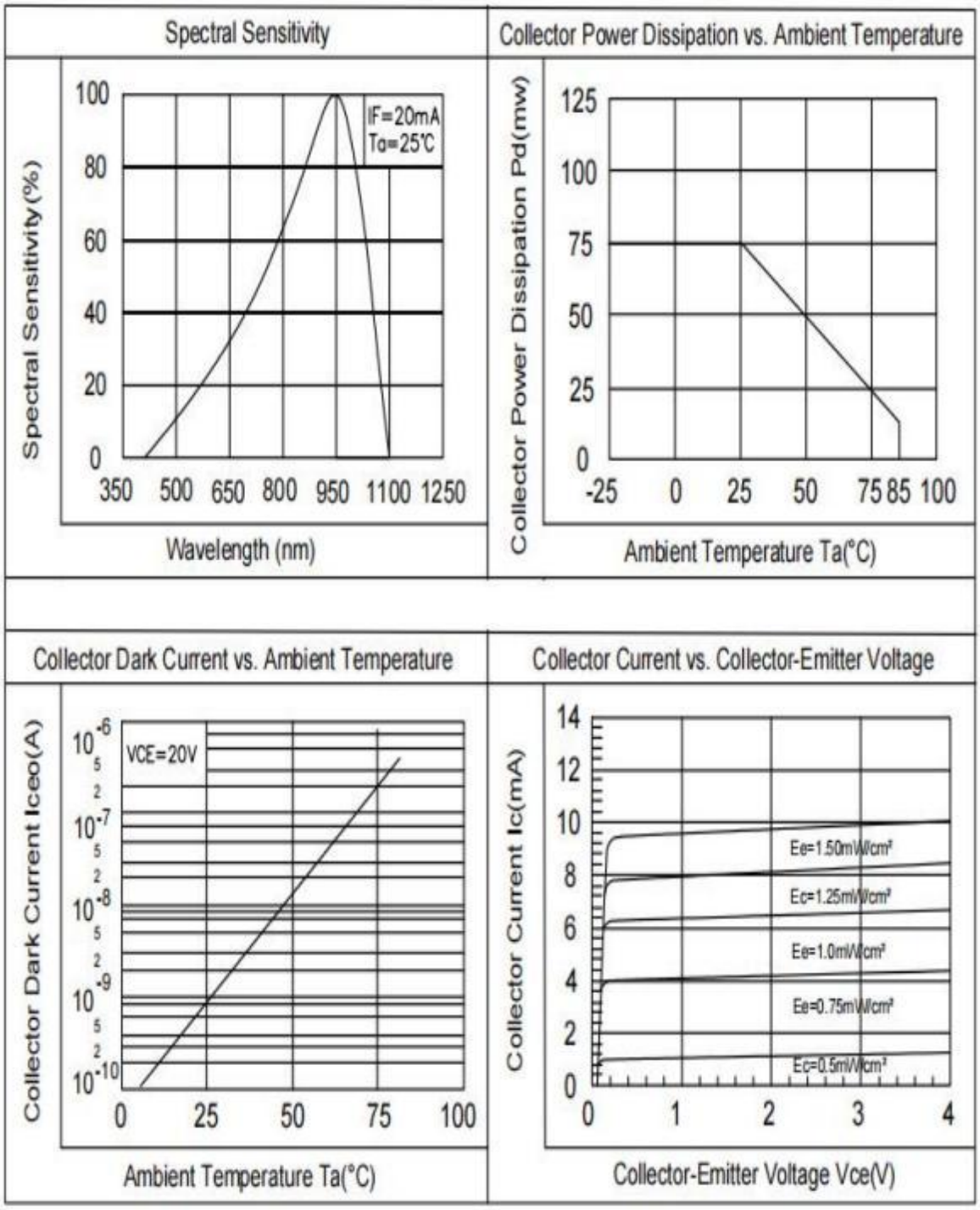


Fig.6 Relative Radiant Flux vs. Ambient Temperature(˚C)



Typical Electro-Optical Characteristics Curves For PT

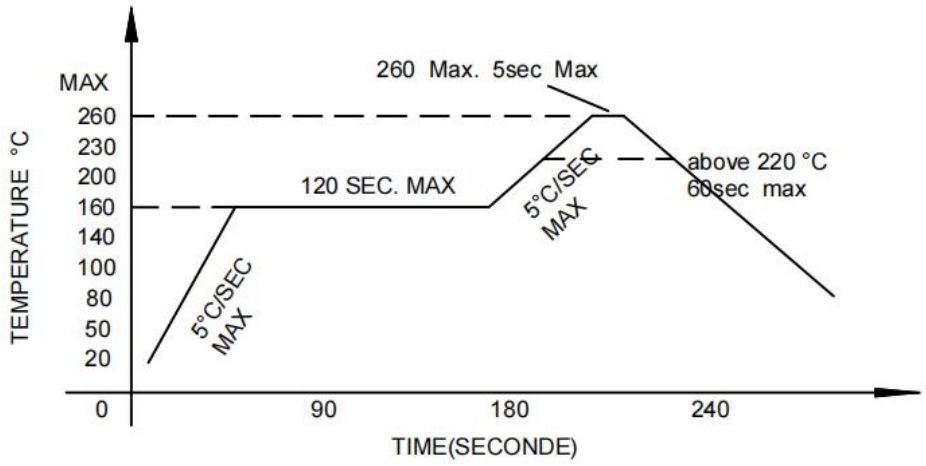


Soldering condition

1. Careful attention should be paid during soldering. When soldering, leave more then 2mm from solder joint to Led, and soldering beyond the base of the tie bar is recommended.
2. Avoiding applying any stress to the lead frame while the LED are at high temperature particularly when soldering.
3. Dip and hand soldering should not be done more than one time.
4. After soldering the LED, the epoxy bulb should be protected from mechanical shock or vibration until the LED return to room temperature.
5. A rapid-rate process is not recommended for cooling the LED down from the peak temperature.
6. Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LED.
7. Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

Recommended soldering conditions

Hand Soldering		Wave Soldering	
Temp. at tip of iron	300℃ Max. (30W Max.)	Preheat temp.	160℃ Max. (120 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	2mm Min.(From solder joint to Led)	Distance	2mm Min. (From solder joint to Led)



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	Ic≦Ict*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

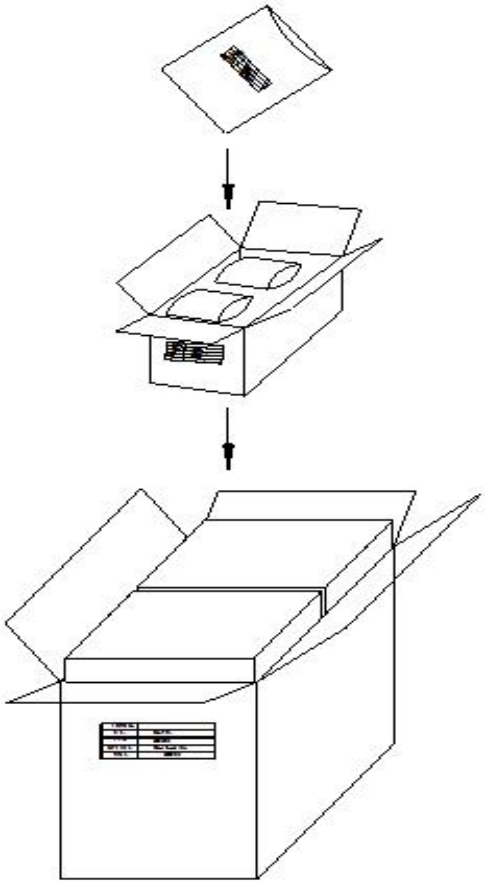
Note：Ict：To test Ic value of the chip before the reliability test.

Ic：The test value of the chip that has completed the reliability test.

U：Upper Specification Limit.

L：Lower Specification Limit.

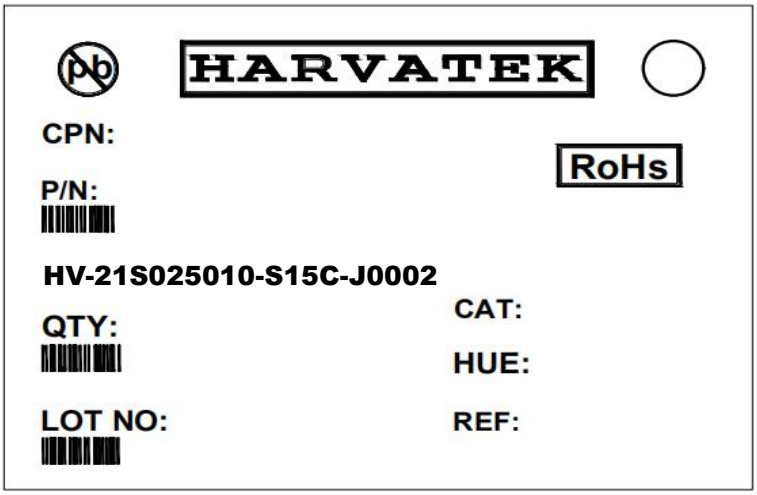
Packing Specification:



150PCS/Bag

600PCS/In-Carton

6000PCS/Out-Carton



Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	09-06-2022
Increase the figure size		1.1	10-19-2022