

Harvatek 14.0*6.0*10.0 mm Transmissive Sensor**HV-21S140100-S11CH**

Official Product	HV-21S140100-S11CH	Customer Part No.	Data Sheet No.
*	*****	*****	HV-21S140100-S11CH
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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.

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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
 RoHS Compliant



Orderable Information

H V - 21 S 140 100 - S11CH

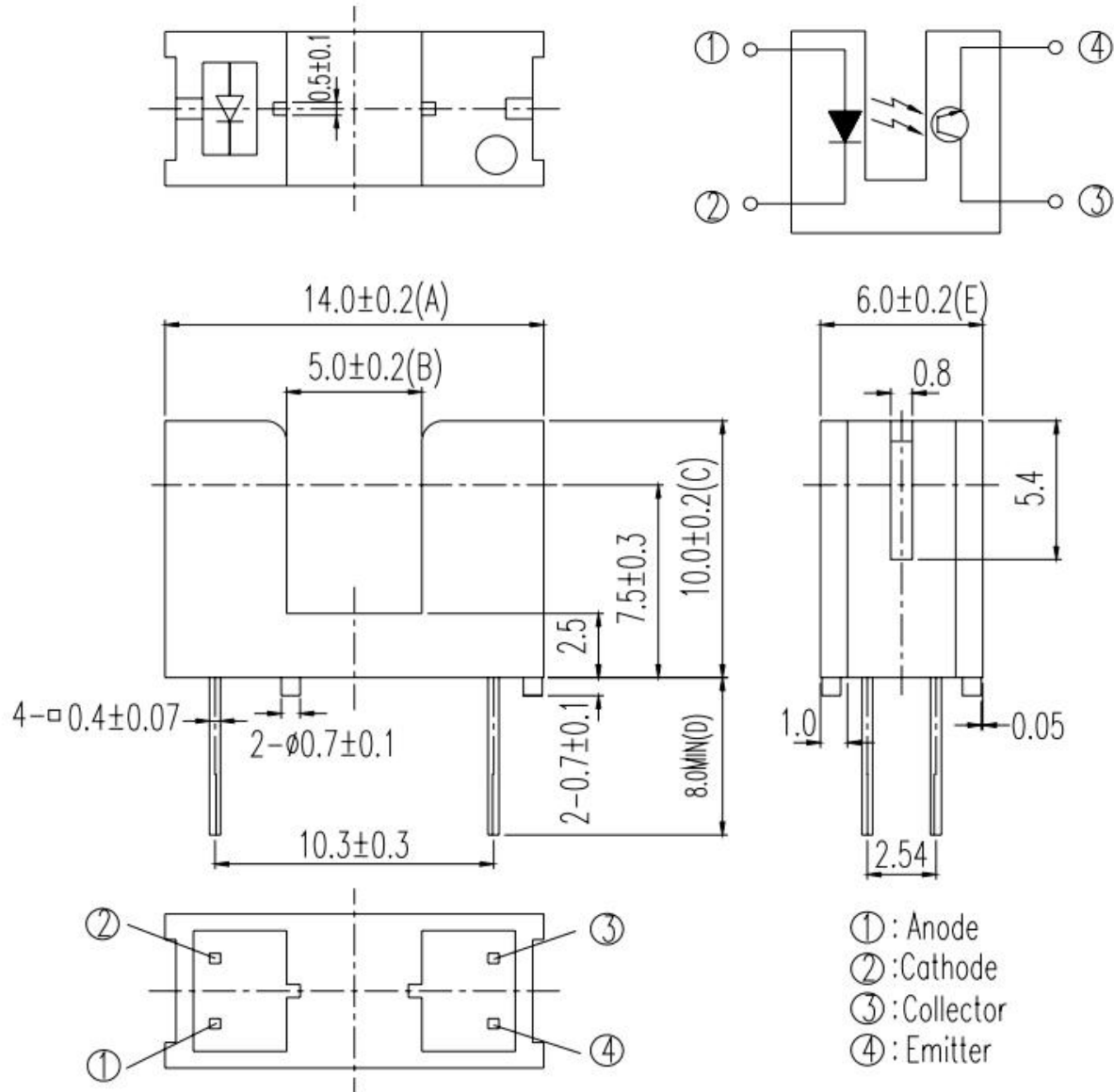
Series Name	Color Code	Remark
HV : HARVATEK	21S140100: 14.0*6.0*10.0mm Transmissive Sensor With GaAIAs Infrared emitter & Silicon Phototransistor. S11CH : HARVATEK Part No.	

Features:

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

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Package Dimensions:



Notes:

1. All dimensions are millimeters.
2. Tolerance is +/-0.25mm unless otherwise noted.
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Absolute Maximum Ratings at Ta=25°C

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	100	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (Pulse width ≦ 100μs, Duty cycle= 1%)	I _{FP}	0.5	A
Output	Collector Power Dissipation	Pd	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~+85	°C
Lead Soldering Temperature (1/16 inch form body for 5 seconds)		Tsol	260	°C

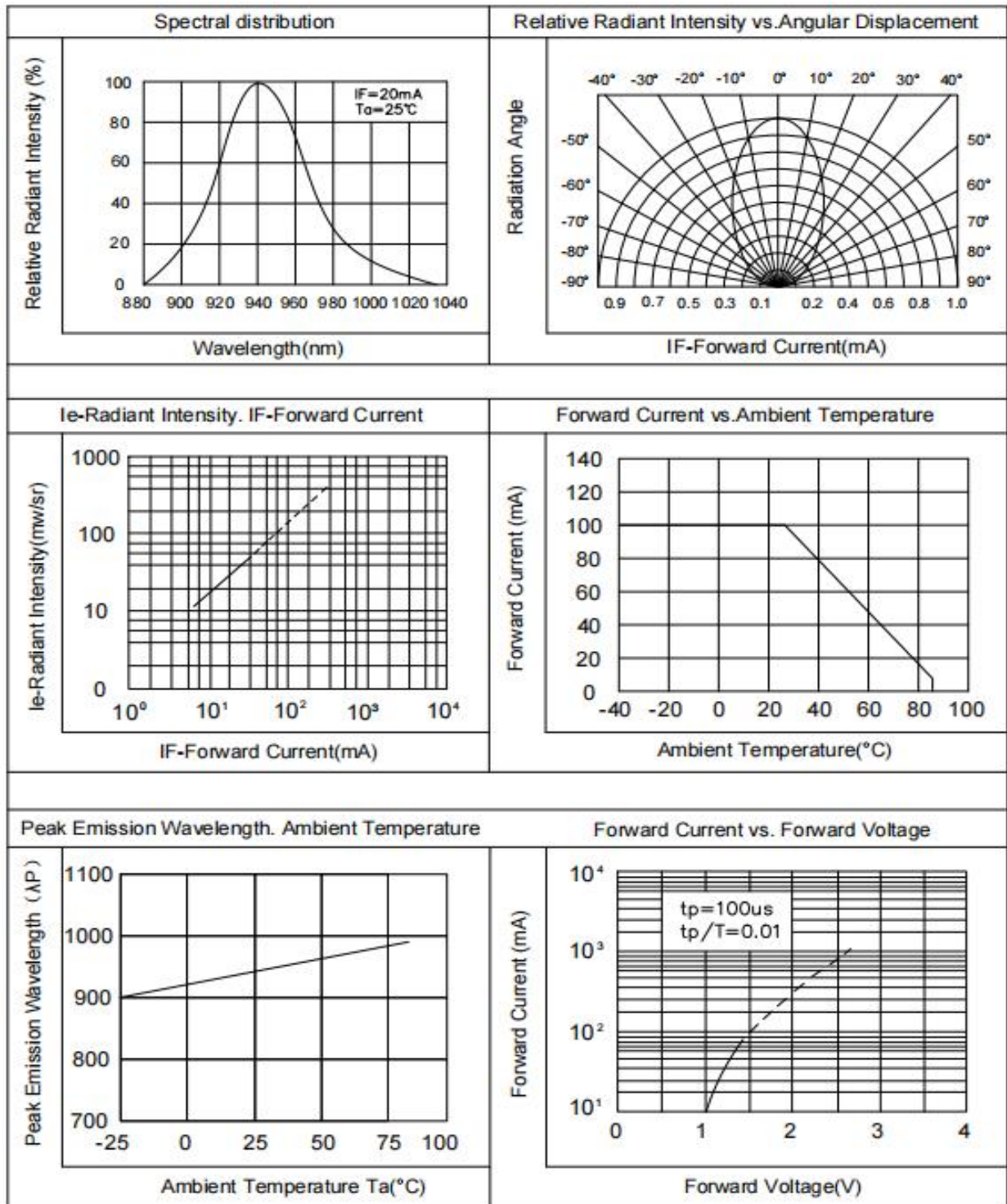
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Electrical and Optical Characteristic (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	---	1.2	1.6	V	$I_F=20mA$
	Reverse Current	I_R	---	---	10	μA	$V_R=5V$
	Peak Wavelength	λ_P	---	940	---	nm	$I_F=20mA$
	View Angle	$2\theta_{1/2}$	---	60	---	Deg	$I_F=20mA$
Output	Dark C urrent	I_{CEO}	---	---	100	nA	$V_{CE}=20V,$ $E_e=0mW/cm^2$
	C-E Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	$I_C=2mA$ $E_e=1mW/cm^2$
Transfer Characteristics	Collect Current	$I_C(ON)$	0.5	---	10	mA	$V_{CE}=5V$ $I_F=20mA$
	Rise time	t_r	---	15	---	μS	$V_{CE}=5V, I_C=1mA,$ $R_L=1000\Omega$
	Fall time	t_f	---	15	---		

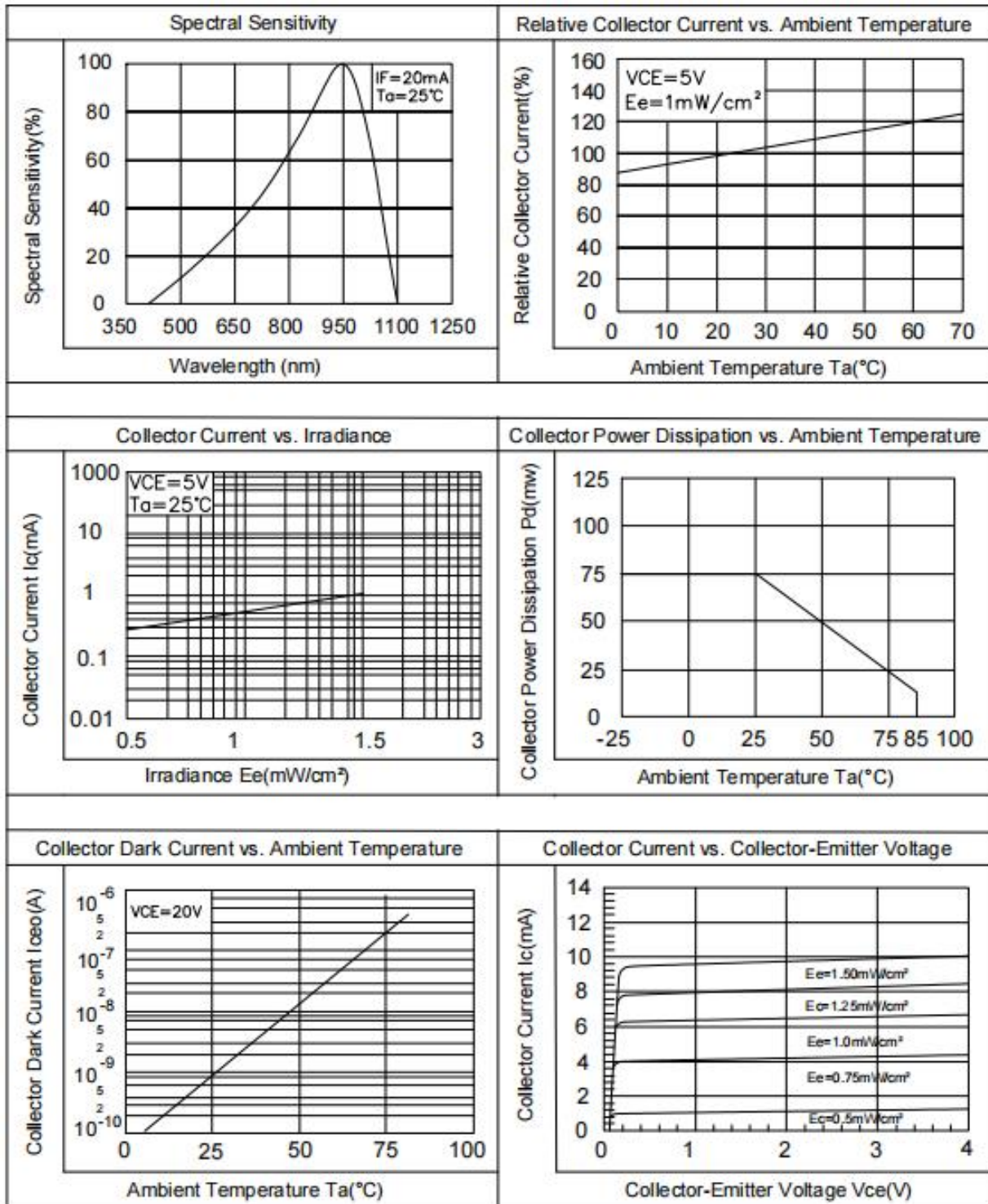
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Typical Electro-Optical Characteristics Curves For IR



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Typical Electro-Optical Characteristics Curves For PT



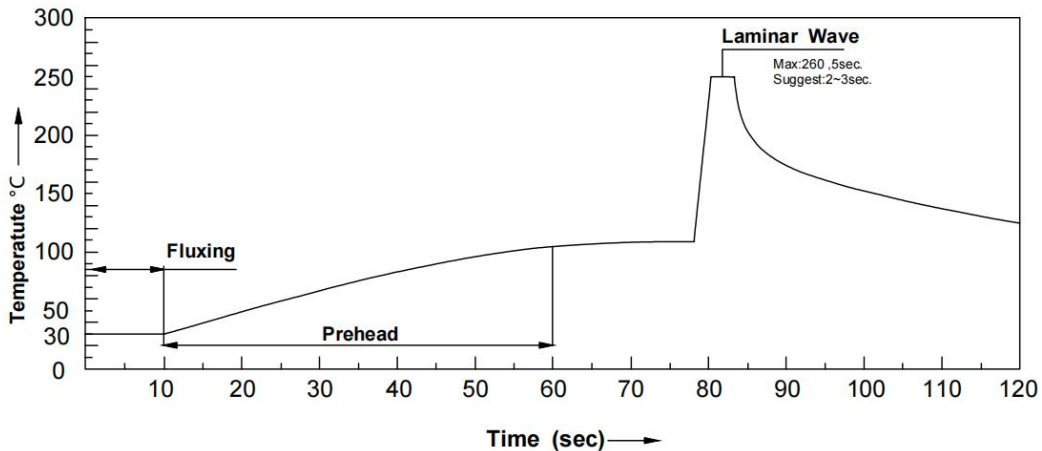
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Soldering condition

1. Careful attention should be paid during soldering. When soldering, leave more than 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°C Max. (30W Max.)	Preheat temp.	100°C Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260°C Max., 5 sec Max
Distance	2mm Min.(From solder joint to Led)	Distance	2mm Min. (From solder joint to Led)



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Reliability Test Item And Condition

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

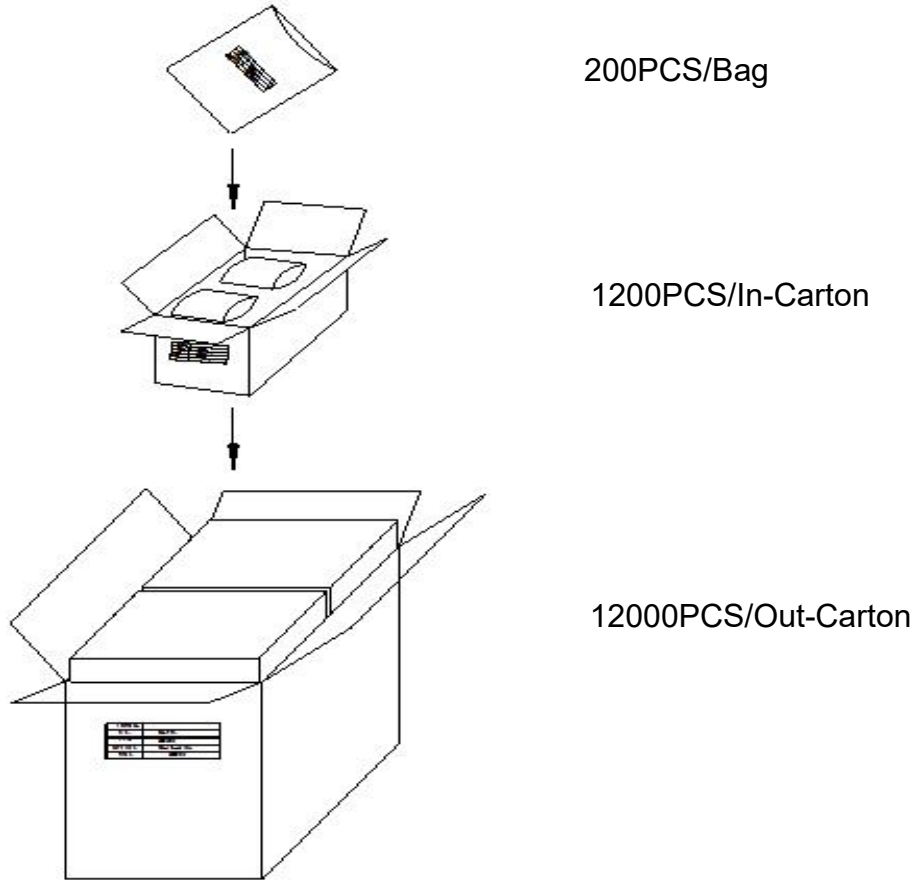
Confidence level: 90%

LTPD: 10%

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

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Packing Specification:



	HARVATEK	
CPN:		RoHs
P/N:		
	HV-21S140100-S11CH	
QTY:		CAT:
		HUE:
LOT NO:		REF:

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Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	06-26-2025

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