

Harvatek 6.0×7.0×5.6mm Infrared Receiver Module**HV-IRM605638H00-B**

Official Product	HV-IRM605638H00-B	Customer Part No.		Data Sheet No.
	*****	*****		HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1	Page 1/12

DISCLAIMER

HARVATEK reserves the right to make changes without further notice to any products herein to improve reliability, function or design. HARVATEK does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

-

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.

Official Product	HV-IRM605638H00-B	Customer Part No.		Data Sheet No.
	*****	*****		HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1	Page 2/12

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant



Orderable Information

H V - IRM 60 56 38 H 00 - B

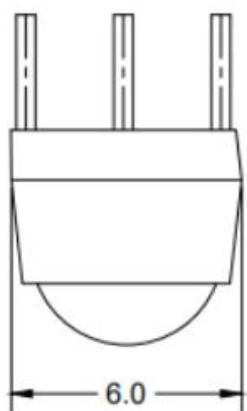
Series Name	Color Code	Remark
HV : HARVATEK	IRM : Infrared Receiver Module. 940nm chip. 6056 : HARVATEK Part No. 38 : Carrier Frequency. H00-B : HARVATEK Part No.	

Features:

- Wide Angle and receiving over long distances.
- Strong anti-interference ability.
- Can resist the influence of the ambient light.

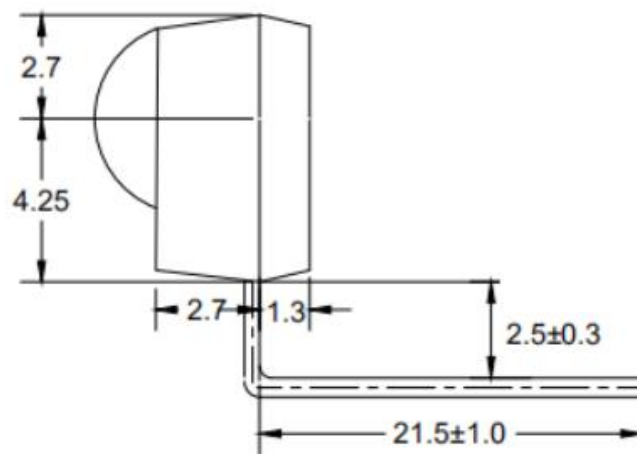
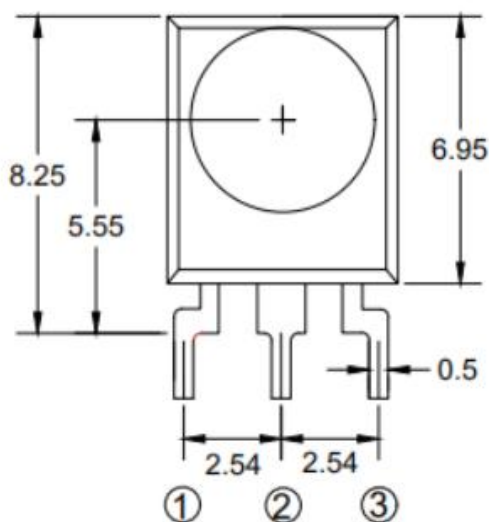
Official Product	HV-IRM605638H00-B	Customer Part No.	Data Sheet No.
	*****	*****	HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1
			Page 3/12

Package Dimensions:



① OUT

② GND

③ V_{CC} 

Notes:

- 1.All dimensions are millimeters.
- 2.Tolerance is +/-0.25mm unless otherwise noted.
- 3.Specifications are subject to change without notice.

Official Product	HV-IRM605638H00-B	Customer Part No.		Data Sheet No.
	*****	*****		HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1	Page 4/12

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Units
Supply Voltage	V _{cc}	0~6	V
Operating Temperature	T _{opr}	-25~+80	°C
Storage Temperature	T _{stg}	-40~+80	°C
Soldering Temperature	T _{sol}	260 for ≤ 5 seconds	°C

Electrical and Optical Characteristic

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	V _{cc}	2.7	/	5.5	V	DC voltage
Current consumption	I _{cc}	/	0.8	1.0	mA	No signal input
Reception range	L ₀	14	/	/	m	At the ray axis
	L ₄₅	6	/	/		In the range of 45° cone
B.P.F Center Frequency	f _o	/	38	/	KHz	/
Peak Wavelength	λ _p	/	940	/	nm	/
Half Angle	θ	/	35	/	deg	/
High Level Pulse Width	T _H	400	600	800	μS	At the ray axis 1
Low Level Pulse Width	T _L	400	600	800	μS	
High Level Output Voltage	V _H	V _{cc} -0.4	/	/	V	No load
Low Level Output Voltage	V _L	/	0.2	0.5	V	I _{SINK} ≤ 2mA

Notes:1:A range from 30cm to the arrival distance. Average value of 50 pulses.

Official Product	HV-IRM605638H00-B	Customer Part No.		Data Sheet No.
	*****	*****		HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1	Page 5/12

Test Method :

The specified electro-optical characteristics is satisfied under the following Conditions at the controllable distance.

①Measurement place

A place that is nothing of extreme light reflected in the room.

②External light

Project the light of ordinary white fluorescent lamps which are not high Frequency lamps and must be less then 10 Lux at the module surface.
($E_e \leq 10\text{Lux}$)

③Standard transmitter

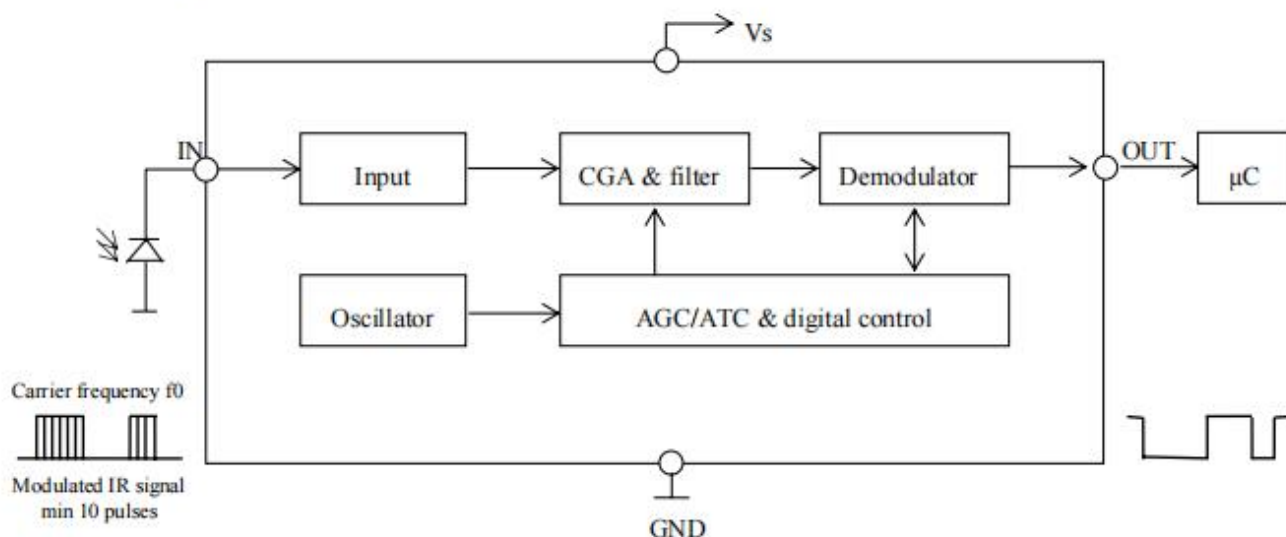
A transmitter whose output is so adjusted as to **$V_o=400\text{mVp-p}$** and the output Wave form shown in Fig.-1.According to the measurement method shown in Fig.-2 the standard transmitter is specified.

However , the infrared photodiode to be used for the transmitter should be $\lambda_p=940\text{nm}, \Delta\lambda=50\text{nm}$. Also, photodiode is used of PD438B($V_r=5\text{V}$).
(Standard light / Light source temperature 2856°K).

④Measuring system

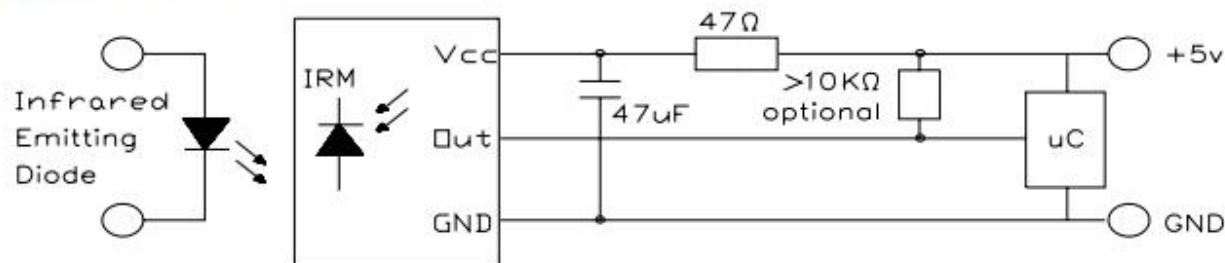
According to the measuring system shown in Fig.-3

Block Diagram :



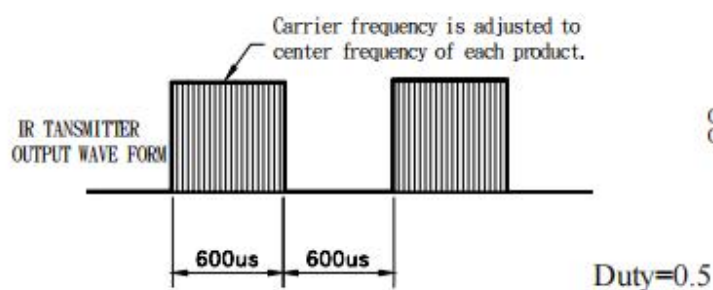
Official Product	HV-IRM605638H00-B	Customer Part No.	Data Sheet No.
	*****	*****	HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Mar.27. 2021	Version of 1.1	Page 6/12

Application Circuit :



RC Filter should be connected closely between Vcc pin and GND pin.

Fig.-1 Transmitter Wave Form



D.U.T output Pulse

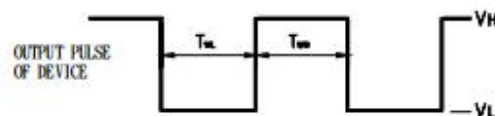


Fig.-2 Measuring Method

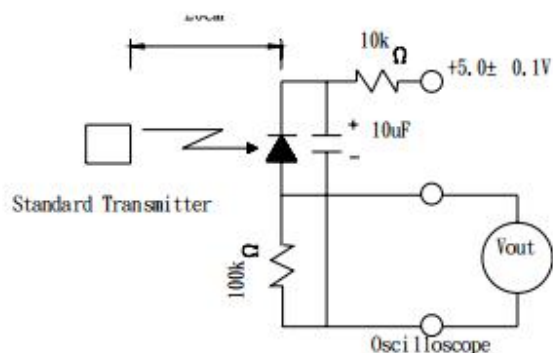
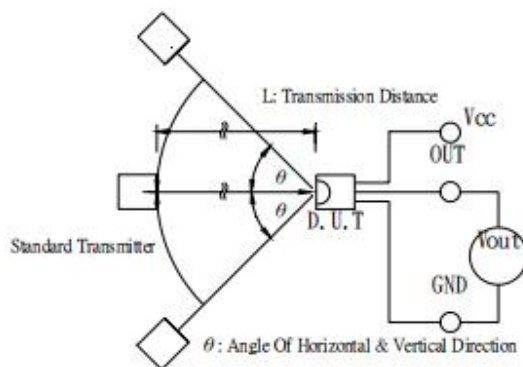


Fig.-3 Measuring System

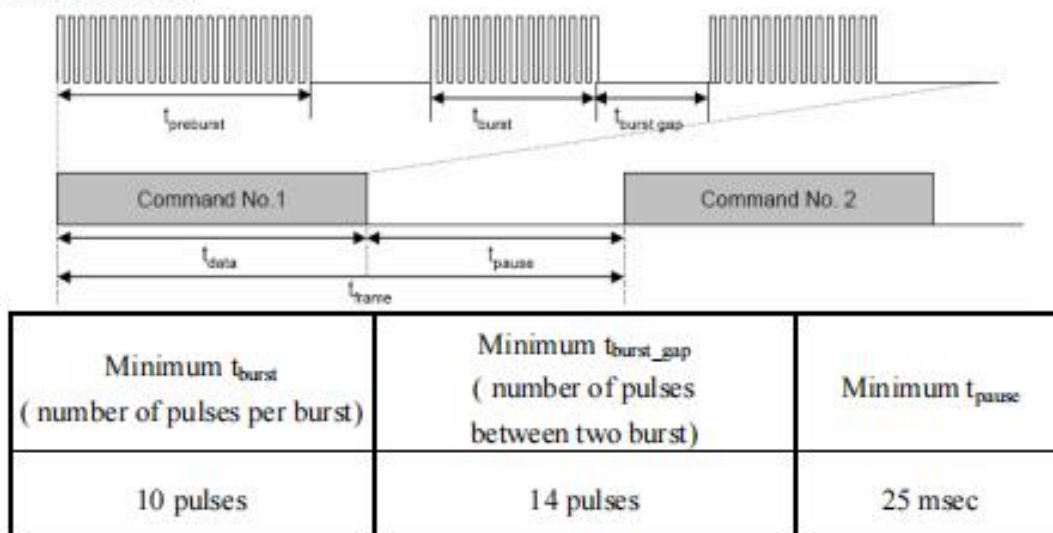


Official Product	HV-IRM605638H00-B	Customer Part No.	Data Sheet No.
	*****	*****	HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Mar.27. 2021	Version of 1.1	Page 7/12

The Notice of Application:

Transmission of remote control signal consist of four parts: Encode Part, IR Transmitter Source, IRM device, Decode Part

1. When IRM-3638TF4 code select frequency, it need to well understand the center system of encode part.
2. Strong or weak light of IR Transmitter can affect distance of transmission.
3. When using IRM-3638TF4 device, it requires the composition of code pattern to reach the demand as follows:



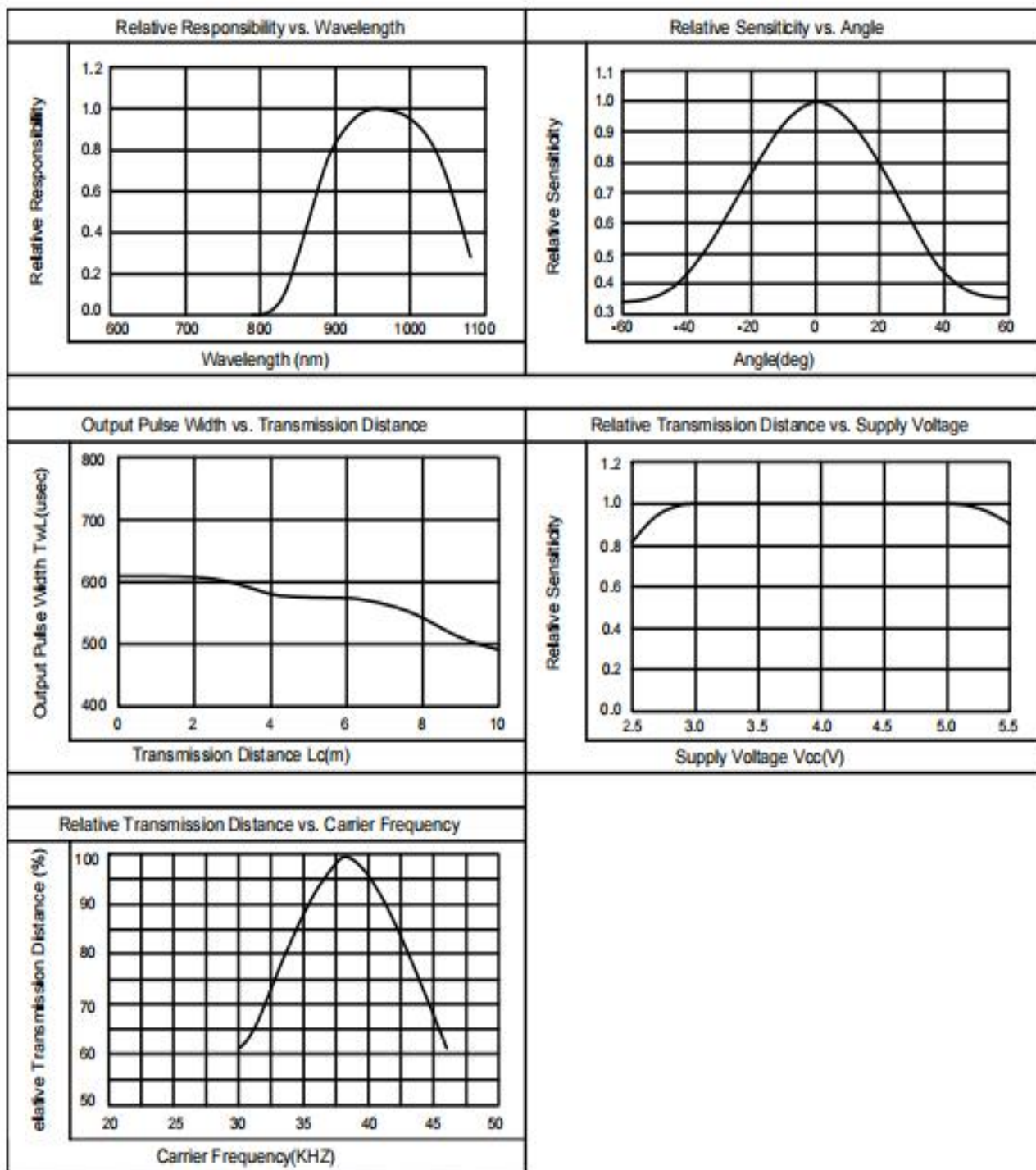
4. It needs to ensure the translation range of decode part if it is applied to the pulse-width range.

If the above items hardly assure of its application, it'll cause NG(no good) message from the edge of signal.

Data format		Data format	
NEC	O	Sony 12 Bit	O
RC5 Philips	O	Sony 15 Bit	X
RC6 Philips	O	Sony 20 Bit	X
RCA Thomson	X	Matsushita	O
Toshiba	O	Mitsubishi	O
Sharp	O	Zenith	O
JVC	O	High data rate (4000 bit/s)	X

Official Product	HV-IRM605638H00-B	Customer Part No.	Data Sheet No.
	*****	*****	HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1
		Page 8/12	

Typical Electro-Optical Characteristics Curve



Official Product	HV-IRM605638H00-B	Customer Part No.	Data Sheet No.
	*****	*****	HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1
		Page 9/12	

Reliability test items and conditions:

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

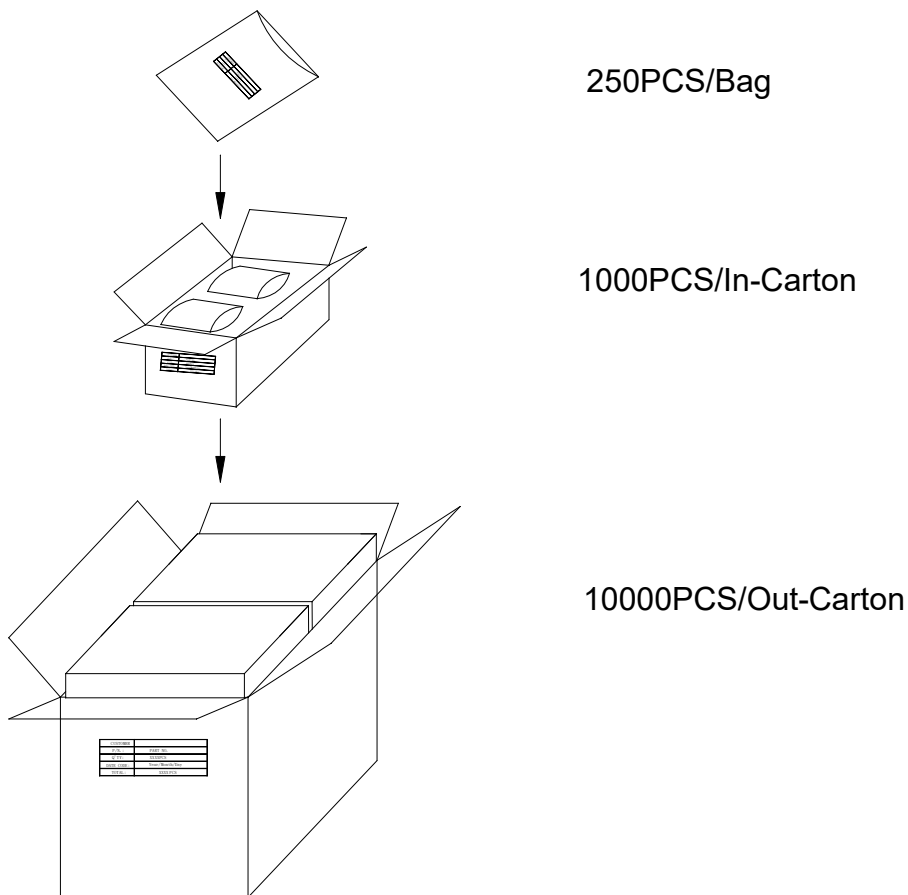
Confidence level: 90%.






LTPD:10%.

No	Item	Test Conditions	Failure Judgement Criteria	Samples(n) Defective(c)
1	Temperature cycle	1 cycle -40℃ +100℃ (15min)(5min)(15min) 300 cycle test	$L_0 \leq L \times 0.8$ $L_{45} \leq L \times 0.8$ L: Lower specification limit	n=22,c=0
2	High temperature test	Temp: +100℃ Vcc:6V 1000hrs		n=22,c=0
3	Low temperature storage	Temp: -40℃ 1000hrs		n=22,c=0
4	High temperature High humidity	Ta: 85℃,RH:85% 1000hrs		n=22,c=0
5	Solder heat	Temp: 260±5℃ 10sec 4mm From the bottom of the package.		n=22,c=0

Official Product	HV-IRM605638H00-B	Customer Part No.		Data Sheet No.
	*****	*****		HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Version of 1.1	Page 10/12

Packing Specification:



	HARVATEK	
CPN:		RoHs
P/N:		
		
HV-IRM605638H00-B		
QTY:		CAT:
		HUE:
LOT NO:		REF:
		

Official Product	HV-IRM605638H00-B	Customer Part No.	Data Sheet No.
	*****	*****	HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.27. 2021	Page 11/12

Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	02-04-2021
Change of Product Notes	6/7/8	1.1	03-27-2021

Official Product	HV-IRM605638H00-B	Customer Part No.	Data Sheet No.
	*****	*****	HV-IRM605638H00-B
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Mar.27. 2021	Version of 1.1	Page 12/12