

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
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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.

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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant



Orderable Information

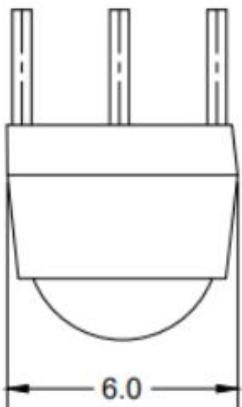
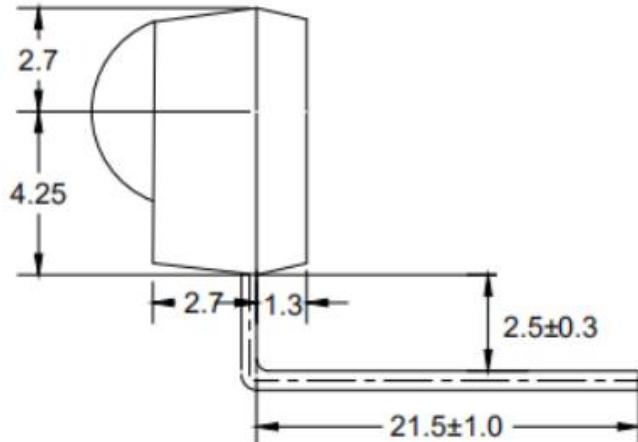
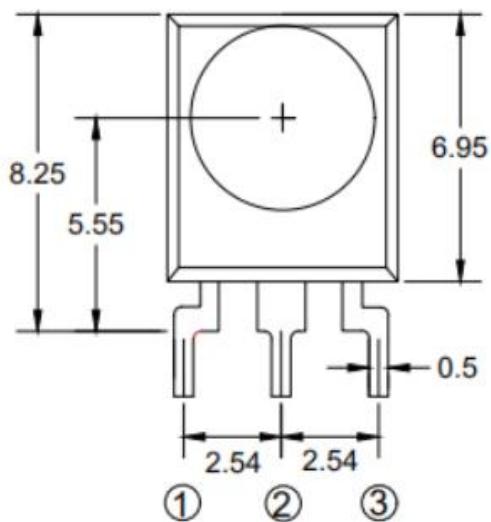
H V - I RM 60 56 38 H 00 - B

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.

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Package Dimensions:**① OUT****② GND****③ Vcc****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	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.

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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

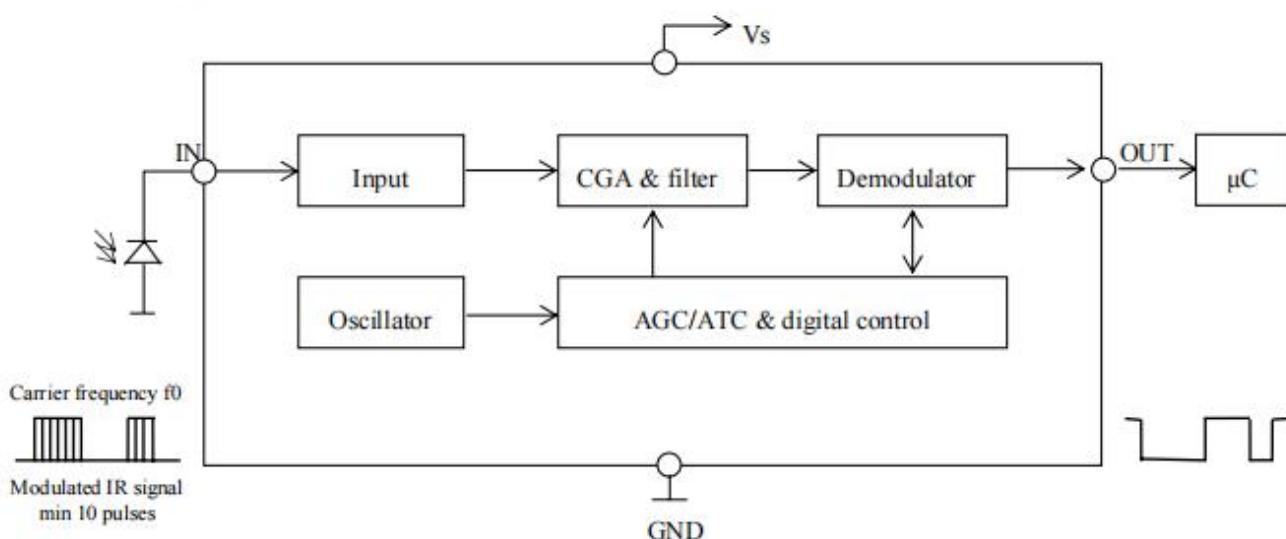
Project the light of ordinary white fluorescent lamps which are not high Frequency lamps and must be less then 10 Lux at the module surface.
($E_e \leq 10 \text{ Lux}$)

③Standard transmitter

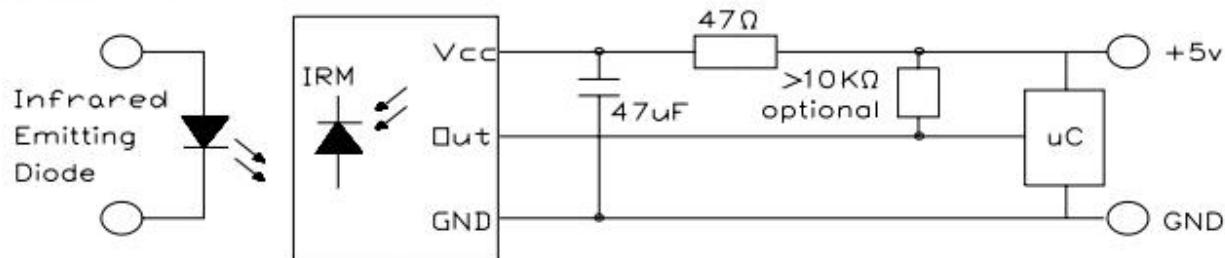
A transmitter whose output is so adjusted as to **$V_o = 400 \text{ mVp-p}$** and the output Wave form shown in Fig.-1. According to the measurement method shown in Fig.-2 the standard transmitter is specified.
However , the infrared photodiode to be used for the transmitter should be $\lambda_p = 940 \text{ nm}$, $\Delta\lambda = 50 \text{ nm}$. 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

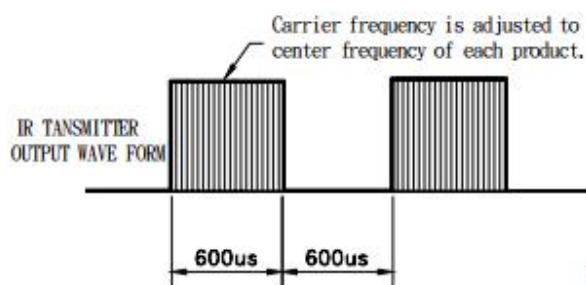
Block Diagram :

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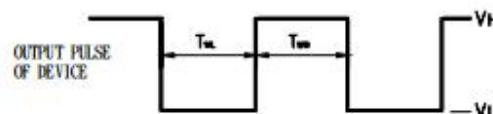
Application Circuit :

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

Fig.-1 Transmitter Wave Form



D.U.T output Pulse



Duty=0.5

Fig.-2 Measuring Method

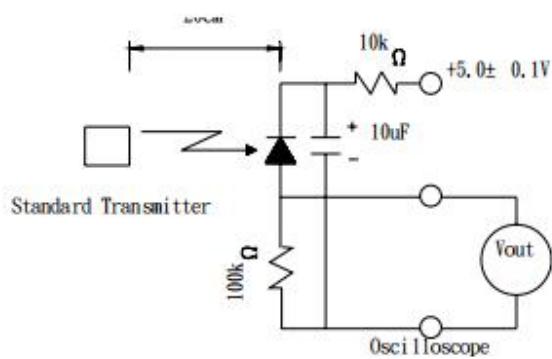
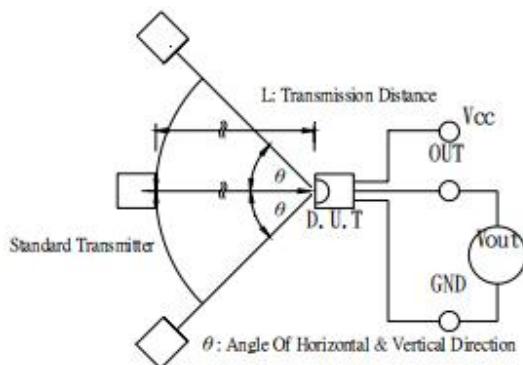


Fig.-3 Measuring System

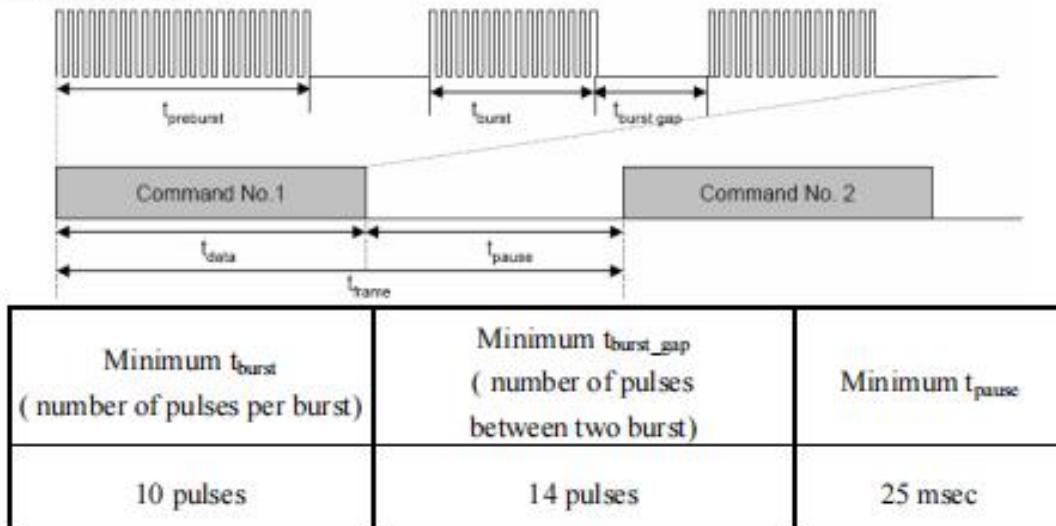


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The Notice of Application:

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:



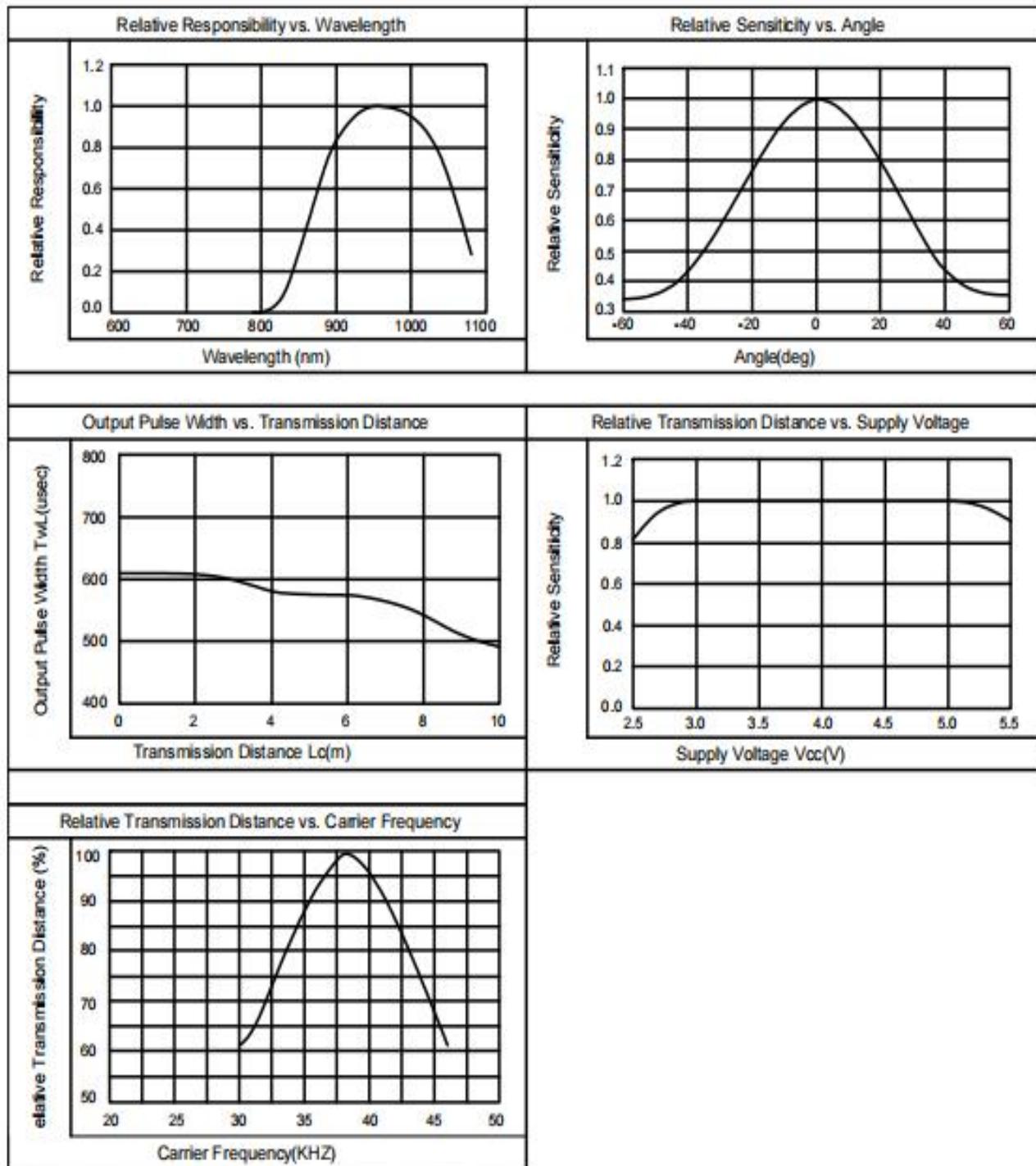
4. It needs to ensure the translation range of decode part if it is applied to the pulse-width range.

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

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Typical Electro-Optical Characteristics Curve



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Reliability test items and conditions:

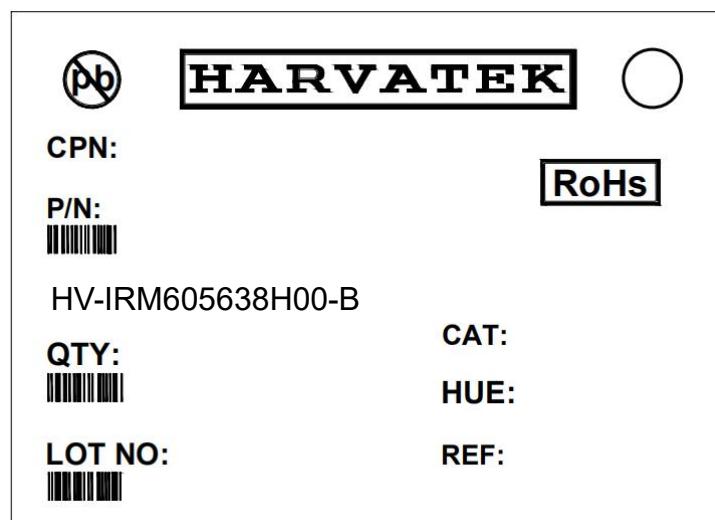
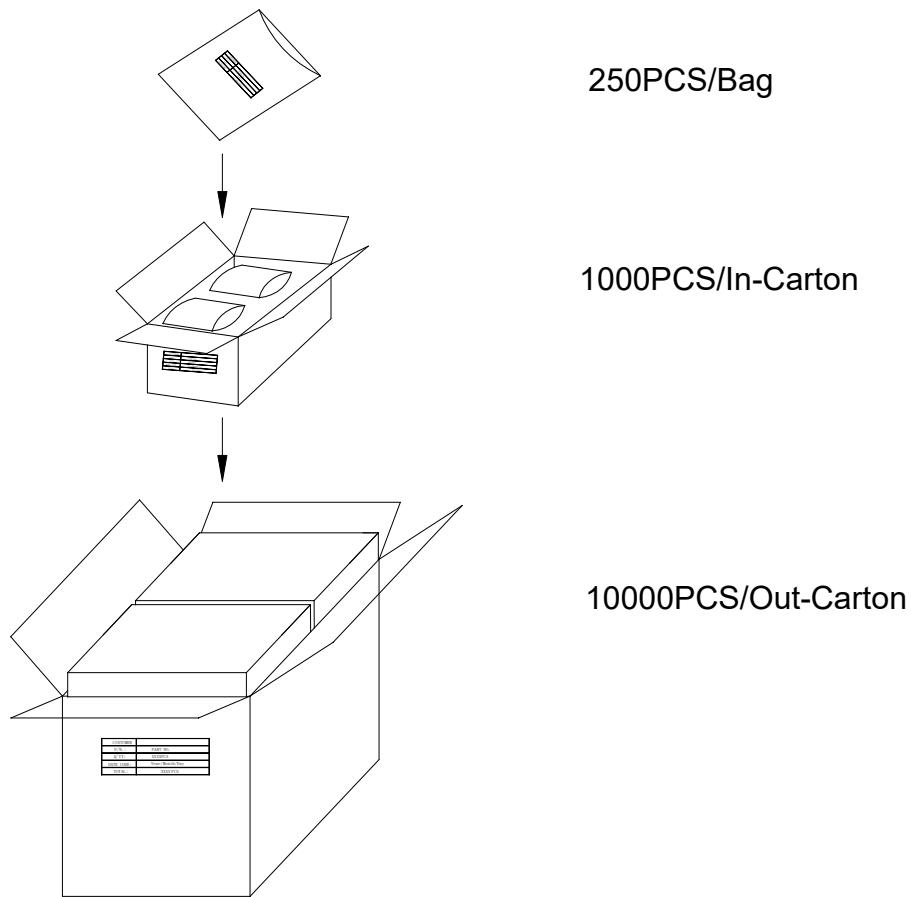
The reliability of products shall be satisfied with items listed below.

Confidence level: 90%.

LTPD:10%.

No	Item	Test Conditions	Failure Judgement Criteria	Samples(n) Defective(c)
1	Temperature cycle	1 cycle -40°C +100°C (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°C Vcc:6V 1000hrs		n=22,c=0
3	Low temperature storage	Temp: -40°C 1000hrs		n=22,c=0
4	High temperature High humidity	Ta: 85°C, RH:85% 1000hrs		n=22,c=0
5	Solder heat	Temp: 260±5°C 10sec 4mm From the bottom of the package.		n=22,c=0

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Packing Specification:

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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

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