

Features

- High protection ability against EMI
- Suitable for continuous code
- Low operating voltage and low power consumption
- High immunity against ambient light
- High sensitivity
- Long reception range

Application

- TV, VCR, AUDIO, SET TOP BOX
- Home Appliances
- Remote Control Equipment

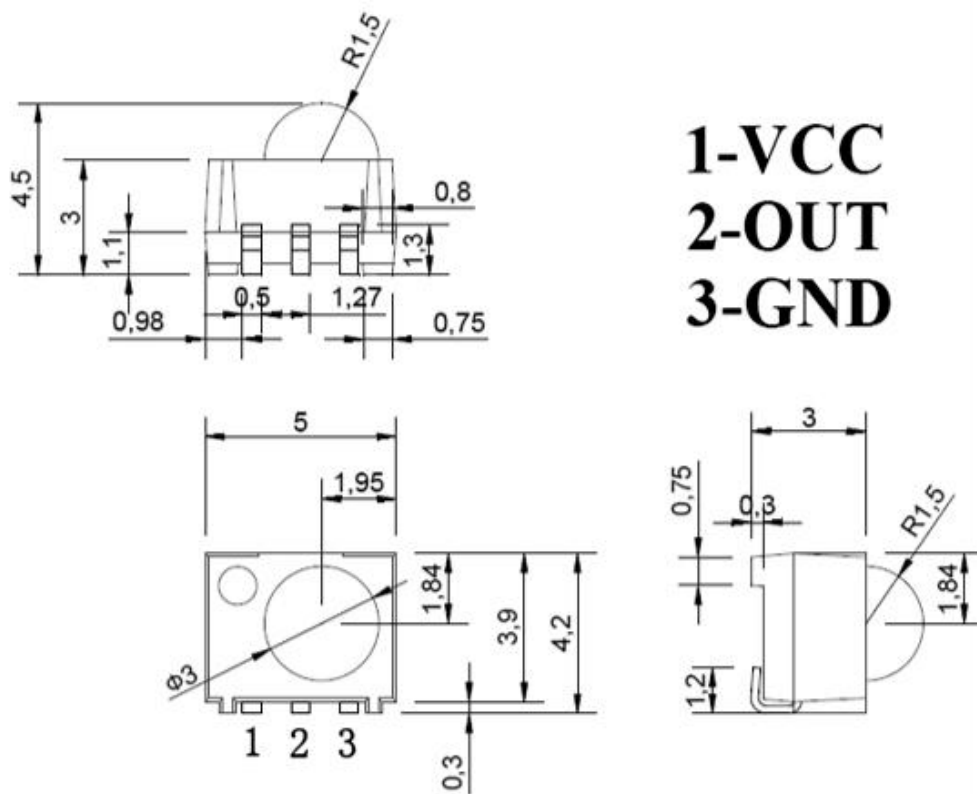
Description

The IRM-V688-K2 devices are SMD type infrared receivers which have been developed and designed by using the latest IC technology.

The PIN diode and preamplifier are assembled onto a lead frame and molded into a black epoxy package which operates as an IR filter.

The demodulated output signal can directly be decoded by a microprocessor.

PACKAGE DIMENSIONS



1-VCC
2-OUT
3-GND

Fig.8

Note:
Tolerance unless mentioned is ± 0.5 mm, Unit = mm.

Proposed pad layout(For reference only)

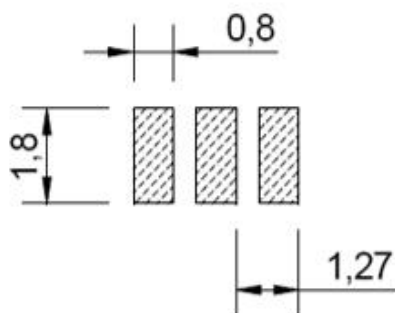


Fig.9

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{cc}	6	V
Operating Temperature	T_{opr}	-20 ~ +80	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +85	$^\circ\text{C}$
Soldering Temperature *1	T_{sol}	260	$^\circ\text{C}$

Note:

*1 Soldering time ≤ 5 seconds

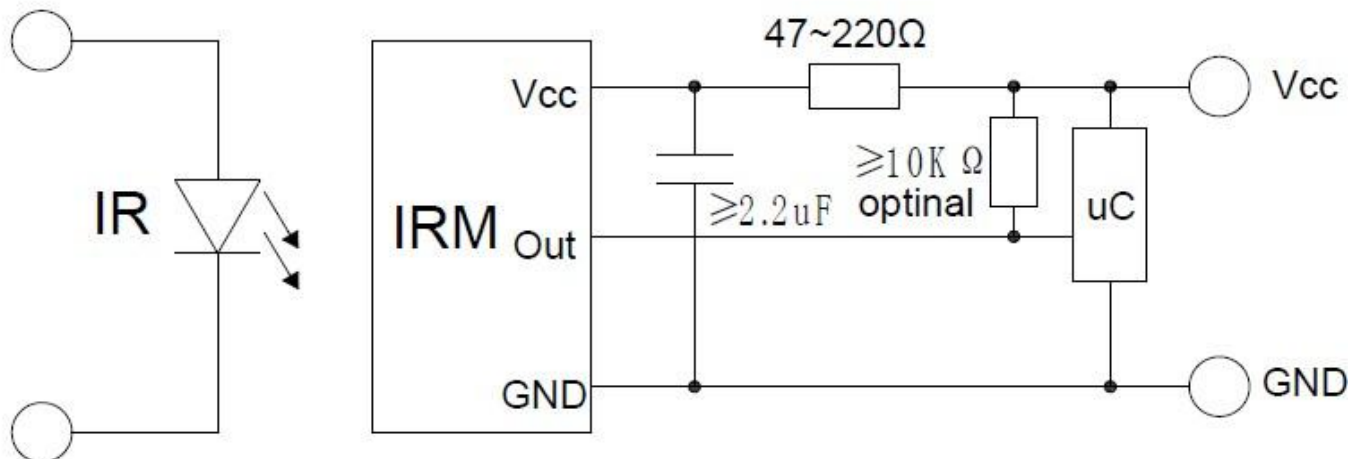
Electro-Optical Characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Supply Voltage	V_{cc}	2.7	--	6.0	V	
Supply Current	I_{cc}	--	0.45	0.9	mA	$V_{cc}=3.0\text{V}$
		--	0.5	0.9	mA	$V_{cc}=5.0\text{V}$
Peak wavelength	λ_p	--	940	--	nm	
High Level Pulse Width	T_{pwh}	400	600	800	us	
Low Level Pulse Width	T_{pwl}	400	600	800	us	
High Level Output Voltage	V_{oh}	$V_{cc}-0.3$	V_{cc}	--	V	Test signal according to figure 1
Low Level Output Voltage	V_{ol}	0	0.2	0.4	V	
Half Angle	θ	--	± 45	--	deg	Angle of half transmission distance
Reception Distance	L0	--	20	--	m	EV=200 \pm 50Lx, test signal see fig.3, IR diode SED113, $I_f=400\text{mA}$
	L45	--	10	--	m	
Center Carrier Frequency	f_0	--	38	--	KHz	

Note:

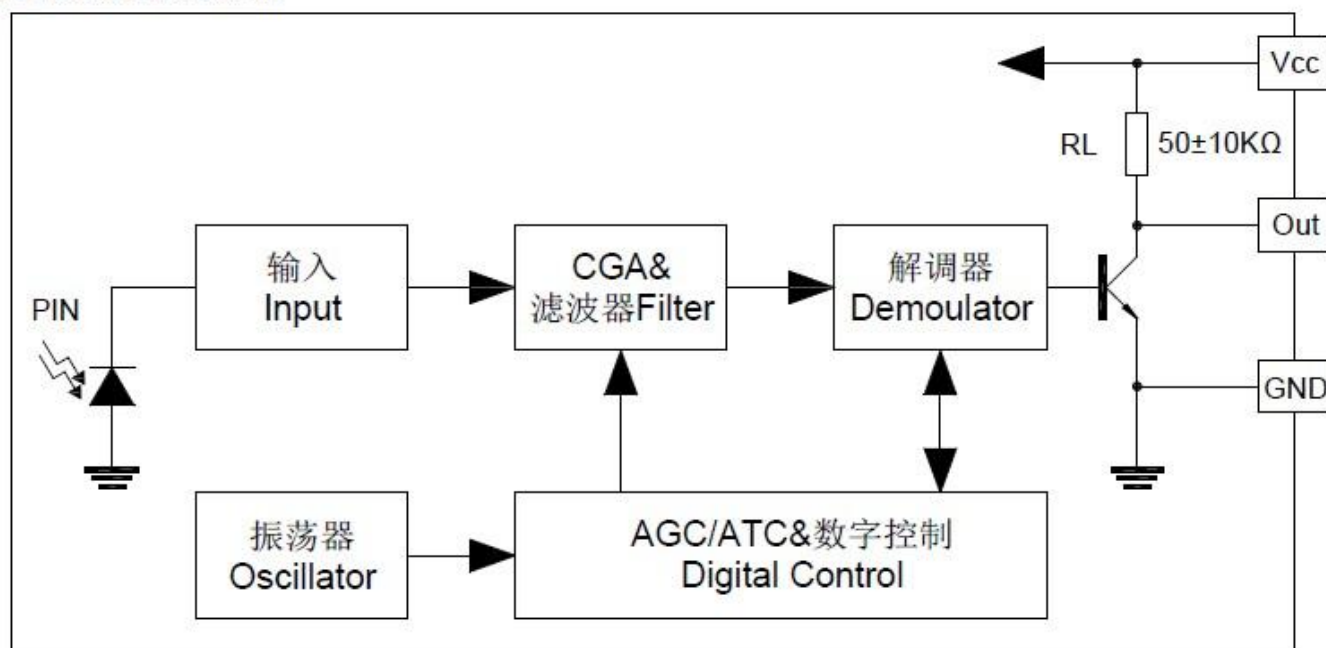
Stress above those listed under Absolute Maximum Rating may cause permanent damage of device.

Application circuit



The RC Filter must be connected as close as possible to Vcc and GND pins.

BLOCK DIAGRAM



Test method

The specified electro-optical characteristic is satisfied under the following Conditions:

1. Measurement environment
Indoor, without extreme light reflected.
2. External light
Detecting surface illumination shall be 200 ± 50 Lux under ordinary fluorescent lamp of no high Frequency lighting.
3. Standard transmitter
The test transmitter is calibrated by using the circuit shown in figure 2. Burst wave of standard transmitter shall be arranged to 50mVp-p under the measurement circuit.
4. The signal is according to figure 1.
5. Receive distanced incidence angle test is shown in figure 3.

Fig.1 Transmitter Wave Form

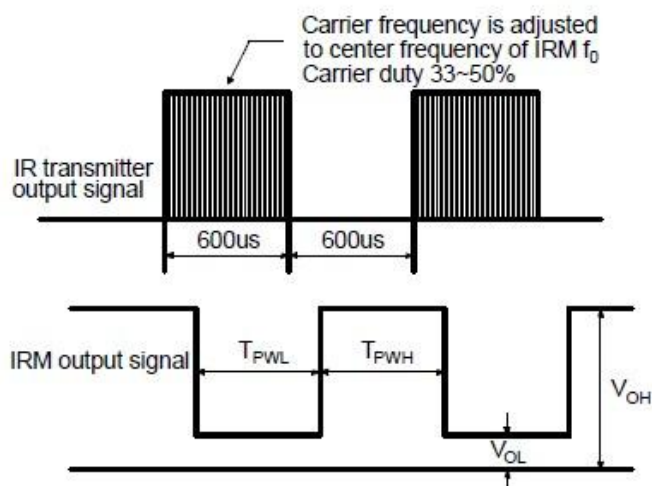


Fig.2 Standard transmitter calibration

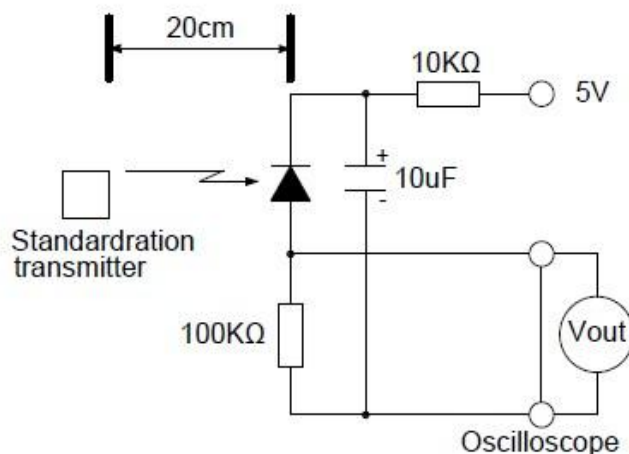
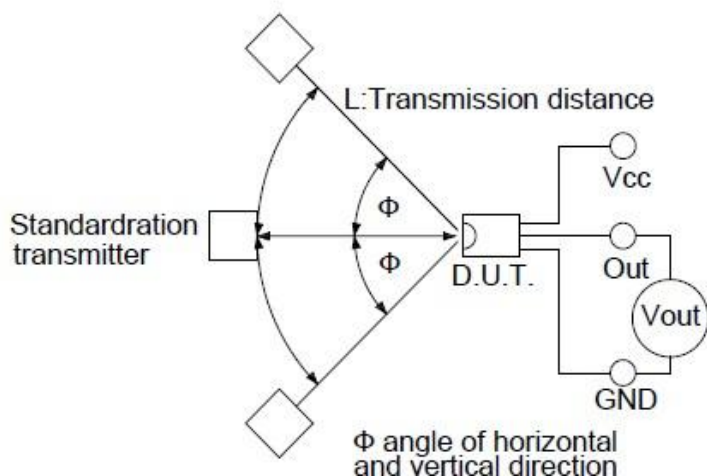


Fig.3 Receive distanced incidence angle test



Typical Electro-Optical Characteristics Curves

Fig.4 Relative spectral sensitivity

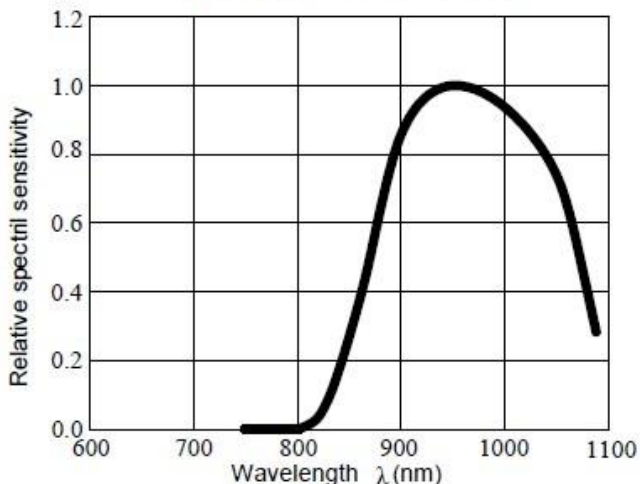


Fig.5 Incidence angle VS. Relative receiving distance

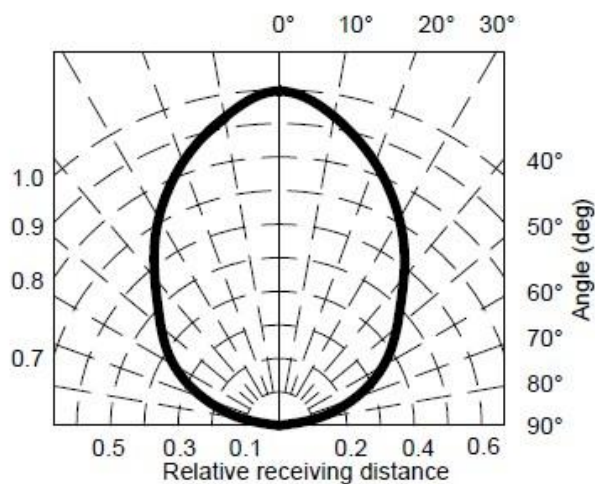


Fig.6 Variation output pulse width vs. Distance

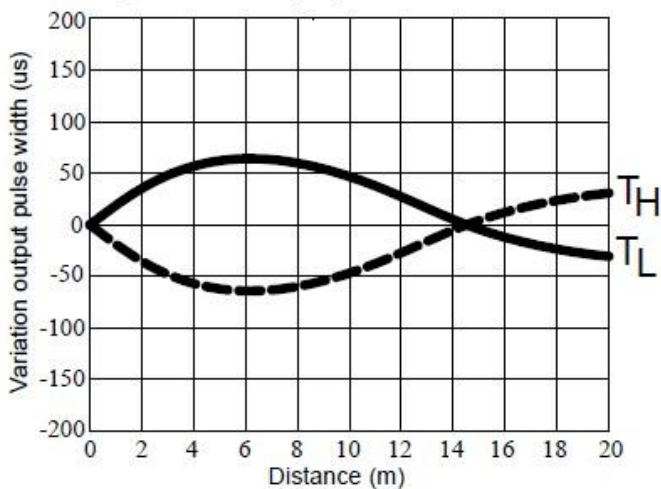
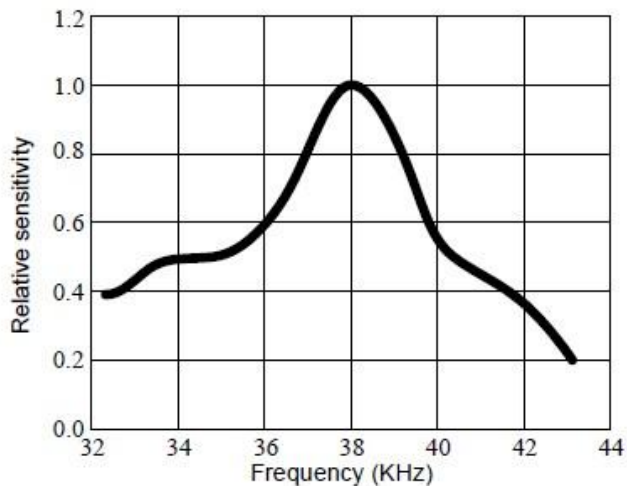


Fig.7 Relative sensitivity VS. Frequency



SUITABLE DATA FORMAT

Data Format	Suitable	Data Format	Suitable
NEC	YES	Sony 12Bit	YES
RC5_Philips	YES	Sony 15Bit	No
RC6_Philips	YES	Sony 20Bit	No
Toshiba	YES	XMP/RCMM Code	No

PACKAGING SPECIFICATION
Reel Dimensions

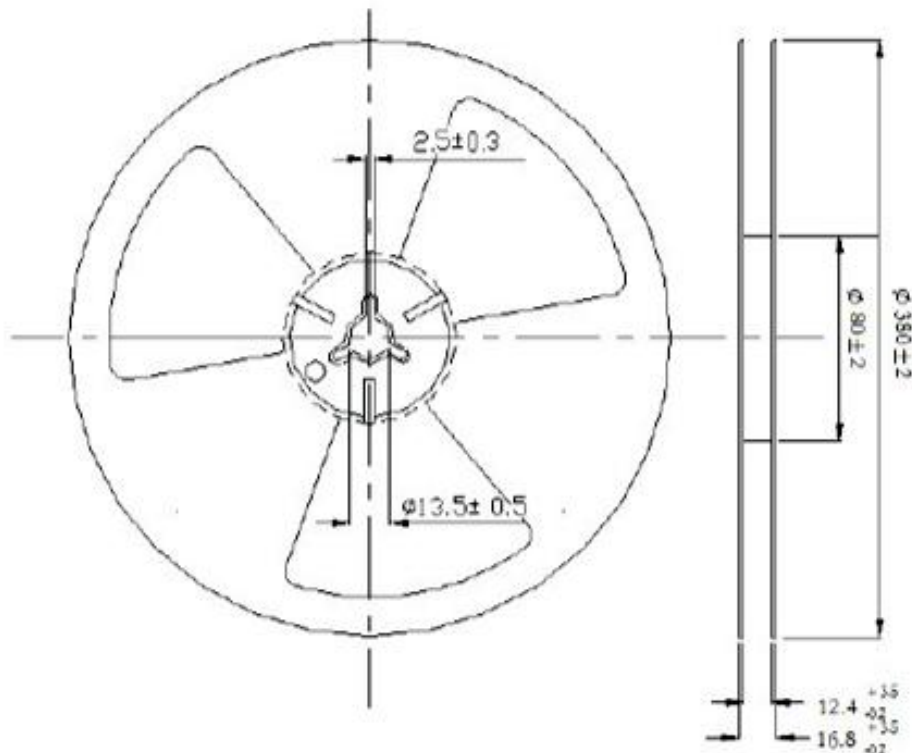


Fig.10

Note: Tolerances unless mentioned ± 0.1 mm, Unit = mm.

Carrier Tape Dimensions: Loaded Quantity 2000 PCS/Reel

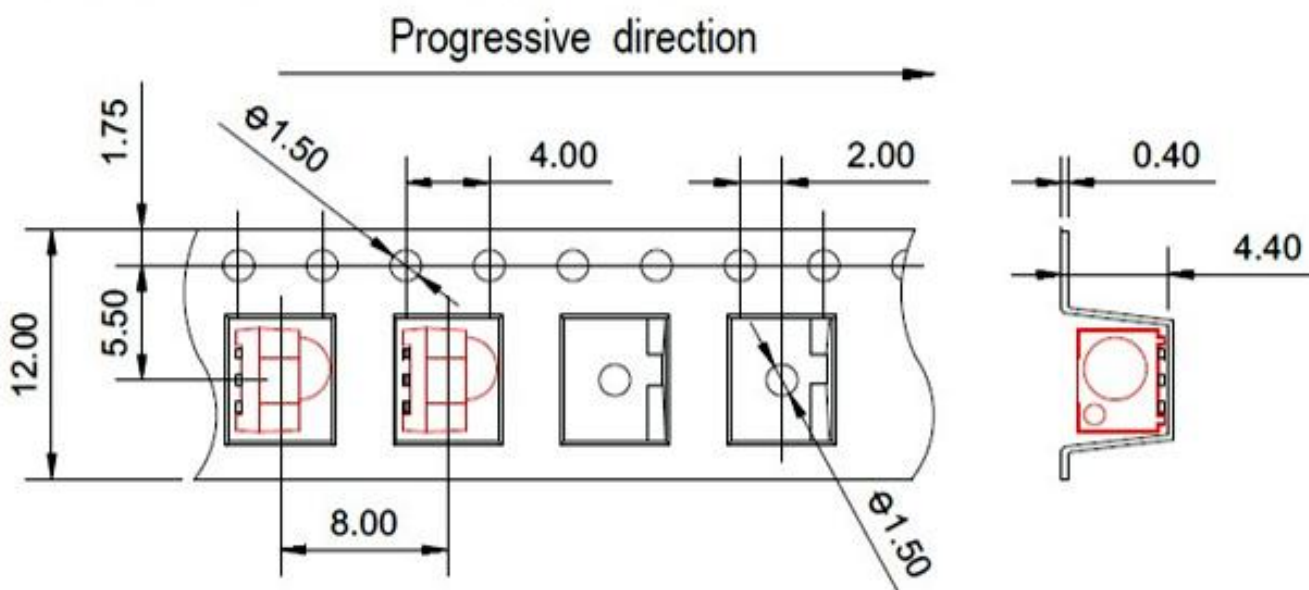


Fig.11

Packing Quantity Specification

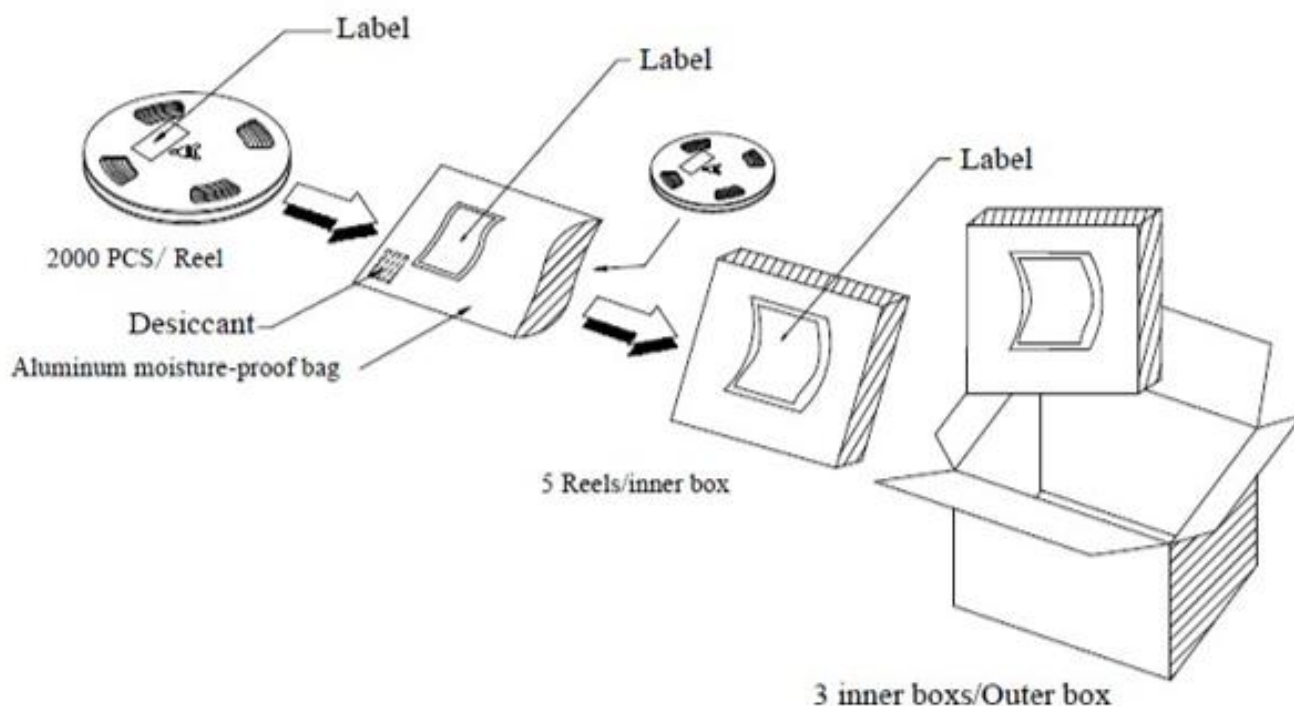
1. 2000Pcs/1Reel,5 Reel/1Box
2. 3Boxes/1Carton

Label Form Specification

製品名 PRODUCT	
コードNo. CODE No.	
数量 Q'TY	
ロットNo. LOT No.	
備考 REMARKS	

- PRODUCT: Part Number
- CODE NO.: Product Serial Number
- QTY: Packing Quantity
- LOT No: Lot Number
- REMARKS:Remarks

Moisture Resistant Packing Process



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