



Technical Data Sheet

Infrared Remote-control Receiver Module

IRM-V5xx/TR1 SERIES

Features

- High shielding against electric field disturbance.
- Circular lens to improve the receive characteristic.
- Line-up for various center carrier frequencies.
- Low voltage and low power consumption.
- High immunity against ambient light.
- Photodiode with integrated circuit.
- TTL and CMOS compatibility.
- Side-received SMD.
- Suitable burst length ≥ 10 pulses/burst.
- This product itself will remain within RoHS compliant version.
- Pb free.
- External dimensions 5.3(L)*3.8(W)*2.65(H)mm.



Descriptions

The device is a miniature SMD type infrared remote control system receiver that has been developed and designed by utilizing the most updated IC technology. The PIN diode and preamplifier are assembled on PCB, the epoxy package is designed as an IR filter. The demodulated output signal can directly be decoded by a microprocessor.

Applications

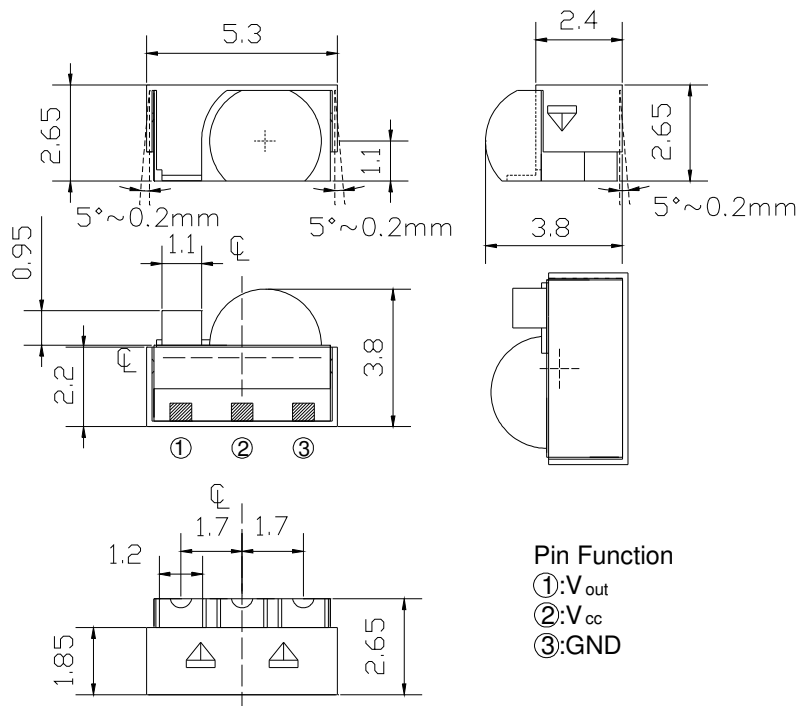
1. Light detecting portion of remote control
 - AV instruments such as Audio, TV, VCR, CD, MD, etc.
 - Home appliances such as Air-conditioner, Fan , etc.
 - The other equipments with wireless remote control.
 - CATV set top boxes
 - Multi-media Equipment

Device Selection Guide

PART	MATERIAL	COLOR
Chip	Silicon	---
Package	Epoxy	Black
Metal case	SPCC	Silver white

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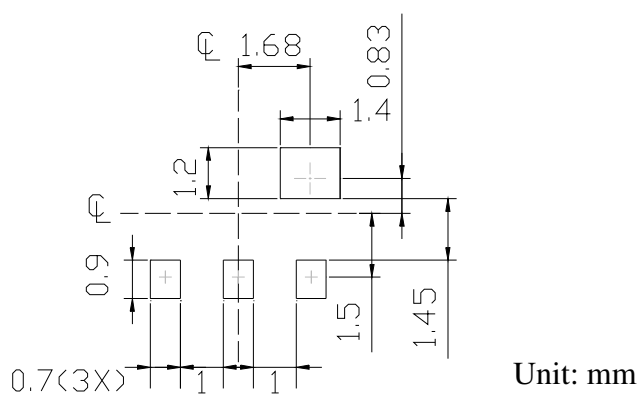
Package Dimensions



- Notes :** 1.All dimensions are in millimeters.
 2.Tolerances unless dimensions $\pm 0.2\text{mm}$.

Soldering patterns

The following soldering patterns are recommended for reflow-soldering :



Available Types For Different Carrier Frequencies

Type	Carrier Frequencies (Typ)
IRM-V536/TR1	36 kHz
IRM-V538/TR1	38 kHz
IRM-V540/TR1	40 kHz

IRM-V5xx/TR1 SERIES
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit	Notice
Supply Voltage	V _{cc}	0~6	V	
Operating Temperature	T _{opr}	-25 ~ +85	°C	
Storage Temperature	T _{stg}	-40 ~ +85	°C	

Recommended Operating Condition

Supply Voltage Rating: V_{cc} 2.7V to 5.5V

Electro-Optical Characteristics (Ta=25°C, and V_{cc}=3.0V)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Supply Current	I _{cc}	---	---	1.2	mA	No signal input
Peak Wavelength	λ_p	---	940	---	nm	
Reception Distance	L ₀	8	---	---	m	At the ray axis *1
	L ₄₅	5	---	---		
Half Angle(Horizontal)	Θ_h	---	45	---	deg	
Half Angle(Vertical)	Θ_v	---	45	---	deg	
High Level Pulse Width	T _H	400	---	800	μs	At the ray axis *2
Low Level Pulse Width	T _L	400	---	800	μs	
High Level Output Voltage	V _H	2.7	---	---	V	
Low Level Output Voltage	V _L	---	0.2	0.5	V	

Notes:

*1 : The ray receiving surface at a vertex and relation to the ray axis in the range of $\theta = 0^\circ$ and $\theta = 45^\circ$.

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