



# Dongbao

## Infrared Receiver Module

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### Module №: DBM1838LM

#### Features

- High protection ability against EMI .
- 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.
- Long reception distance.
- High sensitivity.

#### Descriptions

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

#### Applications

1. Optical switch
2. 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

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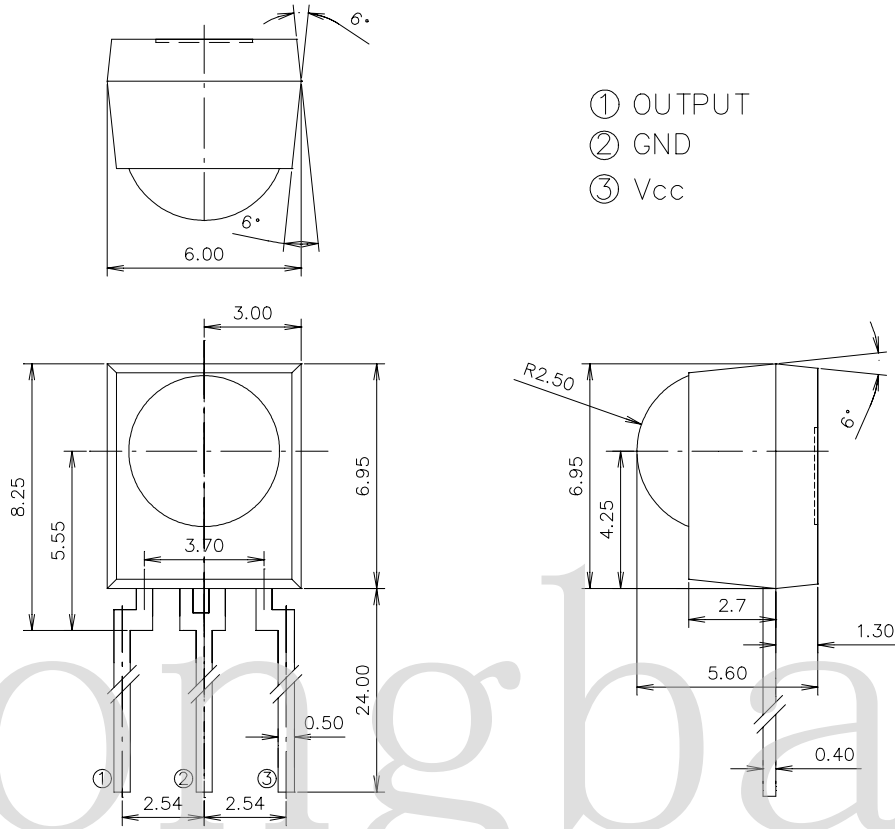


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### Package Dimensions



- Notes:** 1. All dimensions are in millimeters.  
 2. Tolerances unless dimensions  $\pm 0.3\text{mm}$ .

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

Parameter	Symbol	Rating	Unit	Notice
Supply Voltage	Vcc	0~6	V	
Operating Temperature	Topr	-25 ~ +85	°C	
Storage Temperature	Tstg	-40 ~ +85	°C	
Soldering Temperature	Tsol	260	°C	4mm from mold body less than 10 seconds



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### Electro-Optical Characteristics (Ta=25°C, and Vcc=2.7V~3.3V)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Supply Voltage	Vcc	2.5	---	5.5	V	DC voltage
Consumption Current	Icc	0.7	0.9	1.2	mA	No signal input
B.P.F Center Frequency	Fo	---	38	---	KHz	
Peak Wavelength	$\lambda_p$	---	940	---	nm	
Reception Distance	L <sub>0</sub>	15	---	---	m	At the ray axis *1
	L <sub>45</sub>	8	---	---		
Half Angle(Horizontal)	$\Theta_h$	---	45	---	deg	
Half Angle(Vertical)	$\Theta_v$	---	45	---	deg	
High Level Pulse Width	T <sub>H</sub>	400	---	800	$\mu s$	At the ray axis *2
Low Level Pulse Width	T <sub>L</sub>	400	---	800	$\mu s$	

**Notes:**

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

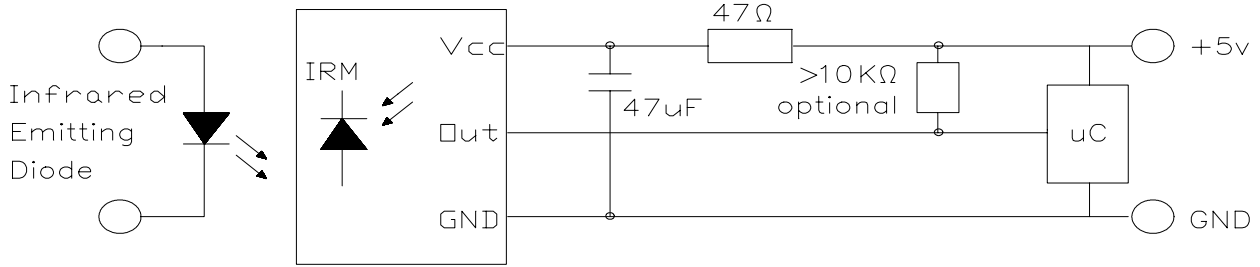
\*2:A range from 30cm to the arrival distance. Average value of 50 pulses.

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## Infrared Receiver Module

Module No: **DBM1838LM**

### Application Circuit :



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

Fig.-1 Transmitter Wave Form

D.U.T output Pulse

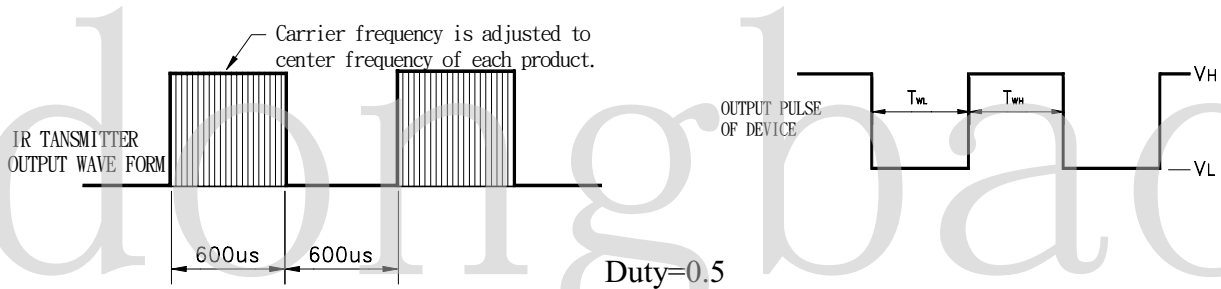
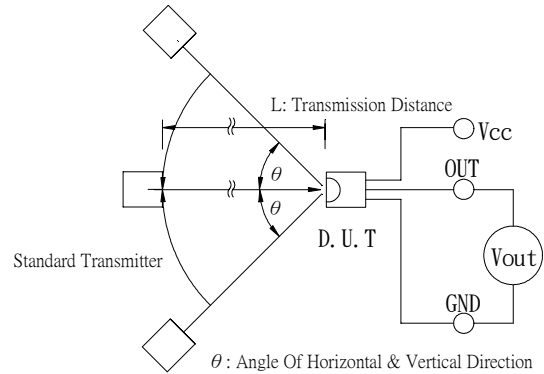
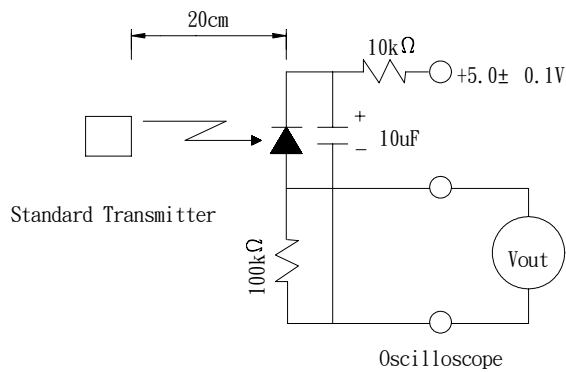


Fig.-2 Measuring Method

Fig.-3 Measuring System





## Infrared Receiver Module

### Module No: DBM1838LM

#### Typical Electro-Optical Characteristics Curves

Fig.-4 Relative Spectral Sensitivity vs.

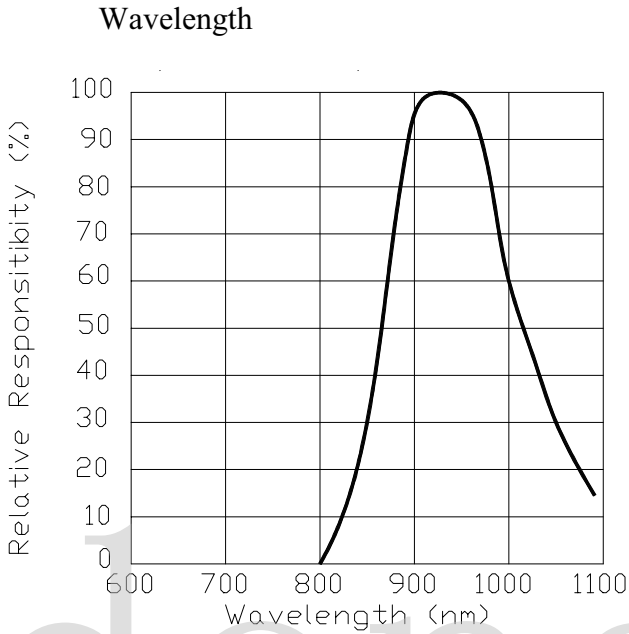


Fig.-5 Relative Transmission Distance vs.

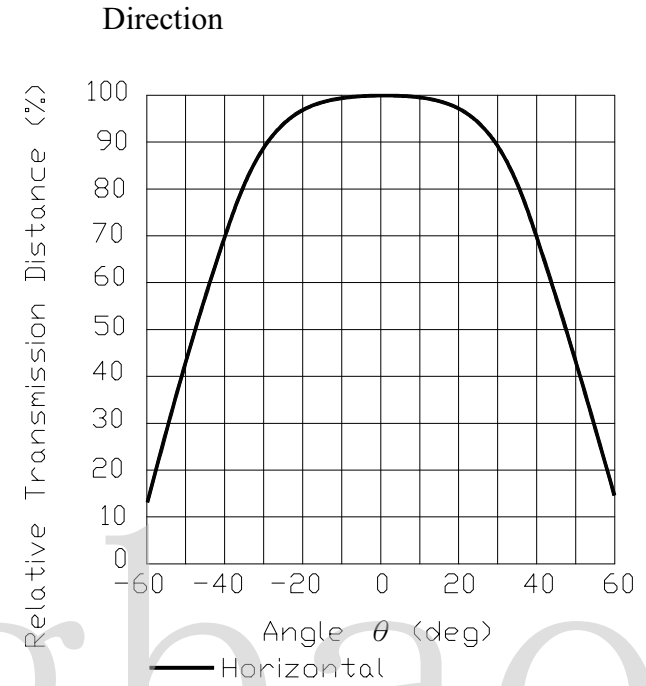


Fig.-6 Output Pulse Length vs. Arrival Distance

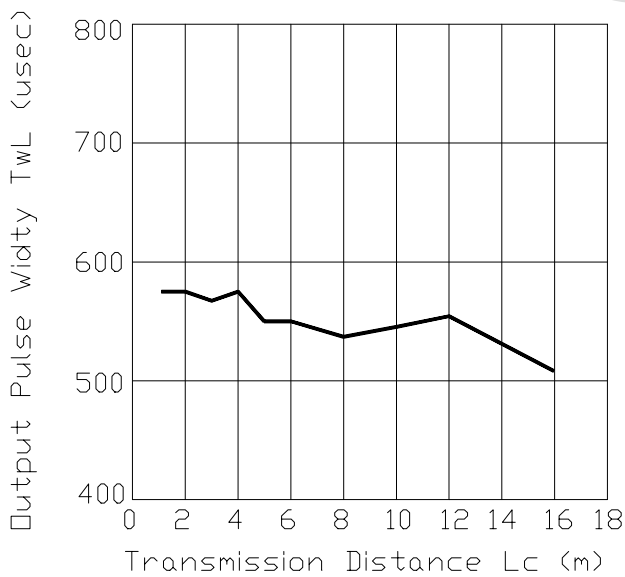
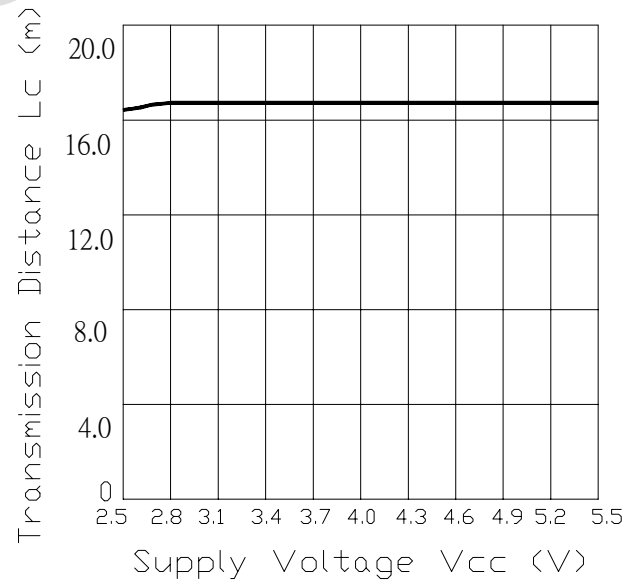


Fig.-7 Arrival Distance vs. Supply Voltage



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