

## Micro Infrared Receiver Module

0-04-10-09 Preliminary

Module No.: PIC-5823SMB

Short Pulse Width Acceptable

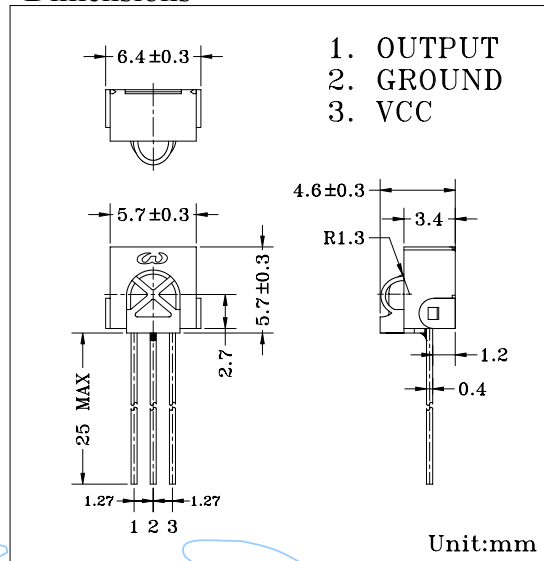
### 1. Features:

- Microminiature size
- Built-in exclusive IC
- Wide half angle & long reception distance
- Continuous Signal Acceptable
- Suitable for R-C oscillating transmitter
- High protection ability to EMI
- Back Metal Cover
- Side view
- Mesh
- Wide voltage operating: 2.7V ~ 5.5V

### 2. Applications

- ▣ AV instruments (Audio, TV, VCR, CD player)
- ▣ Home appliances (Air-conditioner, Fan, Light.)
- ▣ Remote control for wireless devices

### Dimensions



### 3. Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Supply Voltage	Vcc	6.0	V
Operating Temperature	Topr	-10 ~ +60	°C
Storage Temperature	Tstg	-20 ~ +75	°C
Soldering Temperature *1	Tsol	240	°C

\*1 At the position of 2mm from the bottom of the package within 5 seconds.

### 4. Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	Operating Region	2.7	3.0	5.5	V
Current Consumption	Icc	Input Signal = 0		0.9	1.5	mA
Reception Distance	d	200±5Lux, Vcc=3V	10	16		m
Half Angle (Horizontal)	Δθh			±45		deg
Half Angle (Vertical)	Δθv			+45/-40		deg
B.P.F. Center Frequency	Fo			37.9		kHz
Peak Wavelength	λp			940		nm
Signal Output	So		--- Active Low ---			
High Level Output Voltage	Voh		Vcc-0.5			V
Low Level Output Voltage	Vol			0.2	0.4	V
High Level Pulse Width	Twh	Burst Wave = 600μs	500	600	700	μs
Low Level Pulse Width	Twl		500	600	700	μs

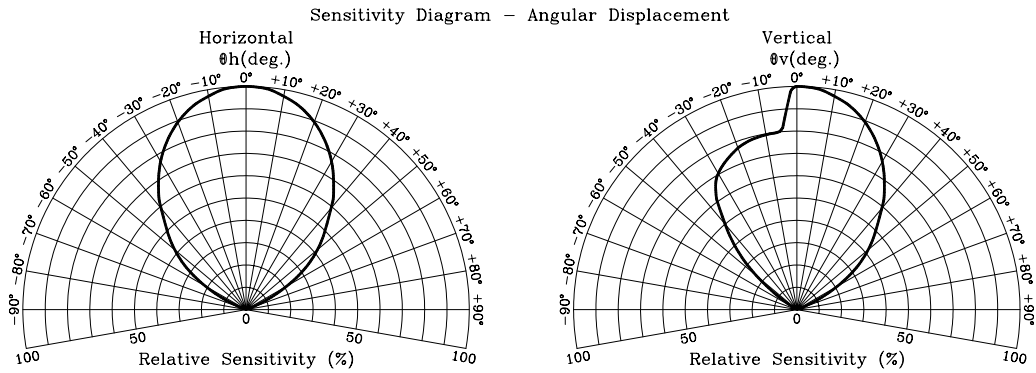
### 5. Reliability Test Items

(Ta=25°C)

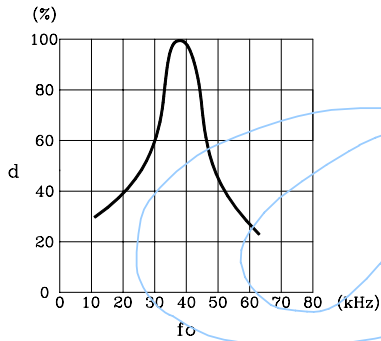
Test Items	Test Conditions	Ratings
High Temperature Storage	Ta=60°C, Vcc=3.0V	t=240hr.
Low Temperature Storage	Ta=-10°C, Vcc=3.0V	t=240hr.
High Temperature High Humid Storage	Ta=40°C, 90%RH, Vcc=3.0V	t=240hr.
Temperature Cycling	-20°C (30min) ~ +70°C (30min)	20 cycles
Soldering Heat	240±5°C	5 sec.

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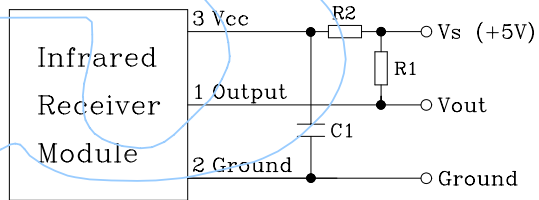


Relative Reception Distance vs Transmitter Carrier Frequency

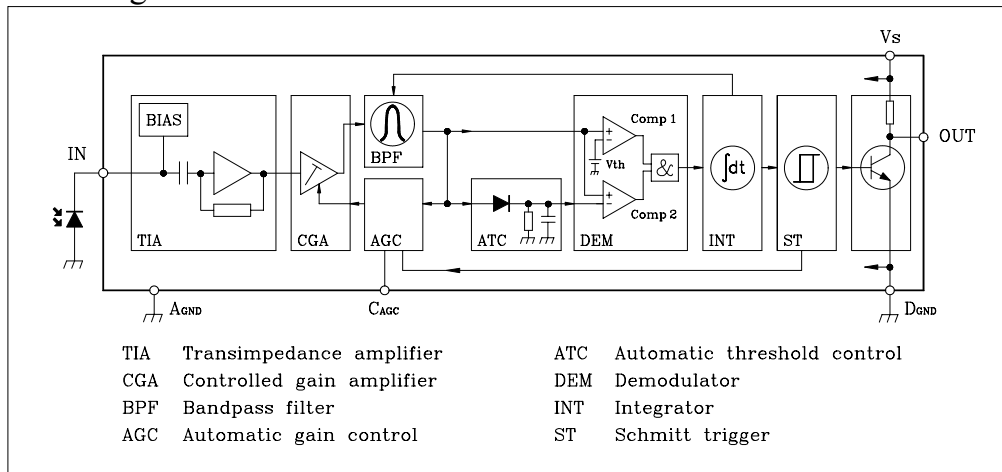


In case of noisy power supply, please serially insert 100Ω resistor and about 47μF electrolytic capacitor in Vcc line and ground as follows:-

- R1=22kΩ
- R2=47Ω~100Ω
- C1=47μF~100μF



### Block Diagram



### Standard Inspection

Among electrical characteristics, total quantity will be inspected as below:-

- ⊙ Distance between emitter and detector
- ⊙ Current consumption
- ⊙ H level output voltage
- ⊙ L level output voltage

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### Testing Method

Distance between emitter and detector specifies maximum distance that output waveform satisfies the standard (FIG-3) under the conditions below against the standard transmitter.

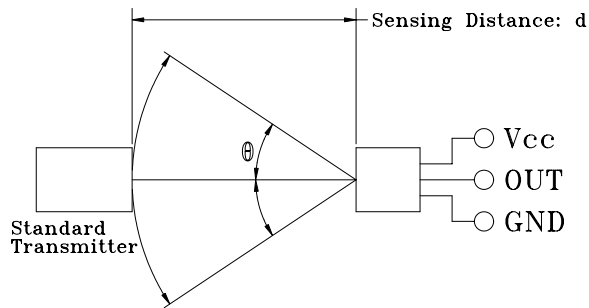


FIG-1

- Measuring place  
Indoor without extreme reflection of light.
- Ambient light source  
Detecting surface illumination is  $200 \pm 5 \text{ Lux}$  under ordinary white fluorescence lamp of no high frequency lightning.
- Standard transmitter  
Transmitter wave indicated in FIG-2 of standard transmitter is arranged to satisfy  $V_o \geq 50 \text{ mVp-p}$  under the measuring circuit specified in FIG-3

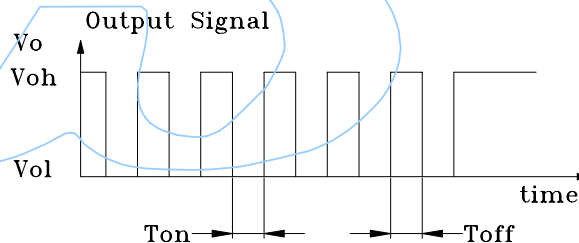
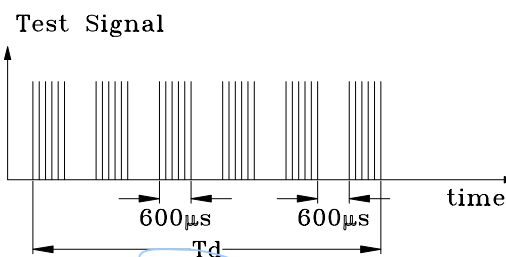


FIG-2

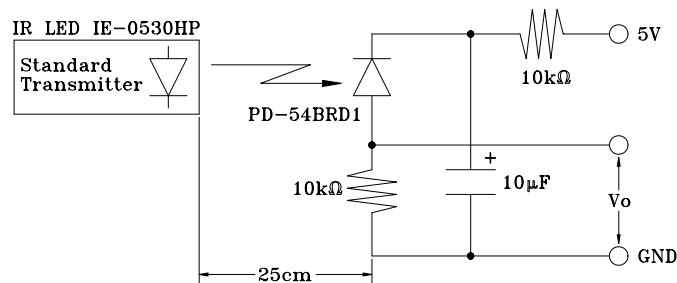


FIG-3 Power Output Measurement Circuit

### Precautions for Use

- Store and use where there is no force causing transformation or change in quality.
- Store and use where there is no corrosive gas or sea (salt) breeze.
- Store and use where there is no extreme humidity.
- Solder the lead pin within the condition of ratings. After soldering, do not add exterior force.
- Do not wash this device. Wipe the stains of diode side with a soft cloth. You can use the solvent, ethyl alcohol, or methyl alcohol only.
- To prevent static electricity damage to the pre-amp, make sure that the human body, the soldering iron are connected to ground before using.