



YETDA INDUSTRY LTD.

K1838-M

IR Receiver Modules for Remote Control Systems

Within the Shielding ,High protection ability against

Wide voltage operating: 2.7V~6.0V ◦

Wide half angle & long reception distance



Absolute Maximum Ratings

Parameter	Symbol	Maximum Rating	Unit
Supply Voltage	Vcc	6.5	V
Operating Temperature	Topr	-25~ +80	°C
Storage Temperature	Tstg	-40 ~ +85	°C
Soldering Temperature *1	Tsol	260	°C

Electro-Optical Characteristics (Ta = 25°C)

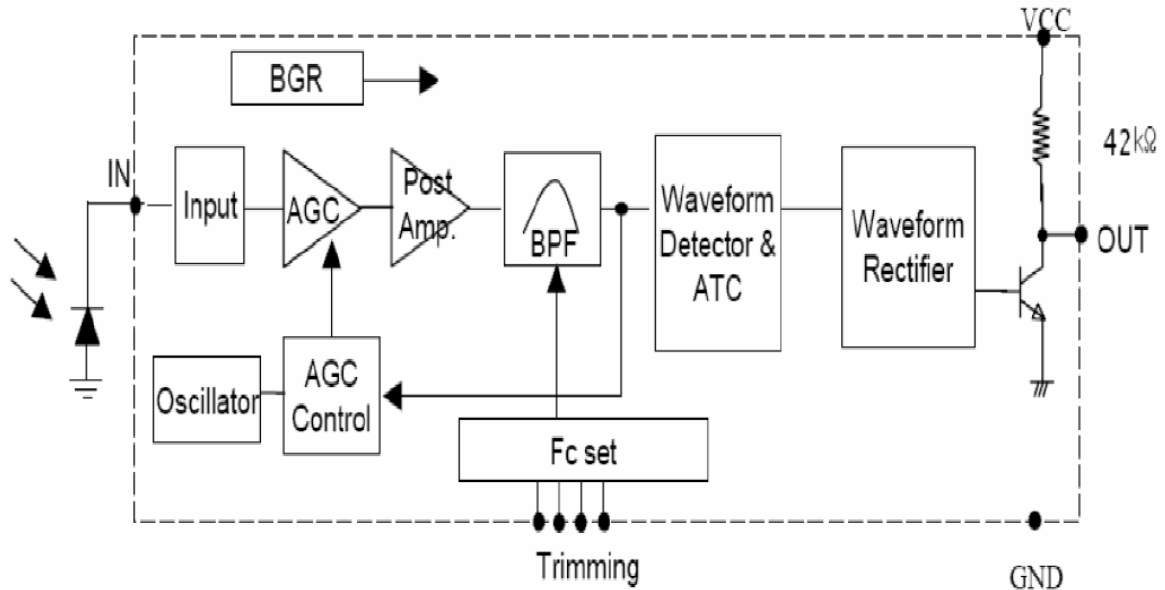
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc		2.7		6.0	V
Supply Current	Icc	No Input Signal	0.5	1.0	1.5	mA
Reception Distance	d	200±50Lux Vcc=3.0V	10	22		m
Half Angle (Horizontal)	$\Delta \theta h$			±45		deg
Half Angle (Vertical)	$\Delta \theta v$			±45		deg
B.P.F. Center Frequency	Fo			36		KHz
Peak Wavelength	λp			940		nm
High Level Output Voltage	Voh		VDD-0.3		VDD	V
Low Level Output Voltage	Vol				0.4	V
High Level Pulse Width	Twh	Burst Wave=600 μs	400		800	μs
Low Level Pulse Width	Twl	Burst Wave=600 μs	400		800	μs

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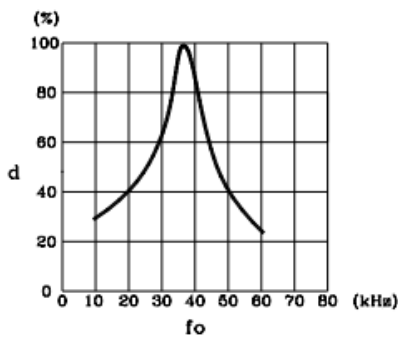
Block Diagram



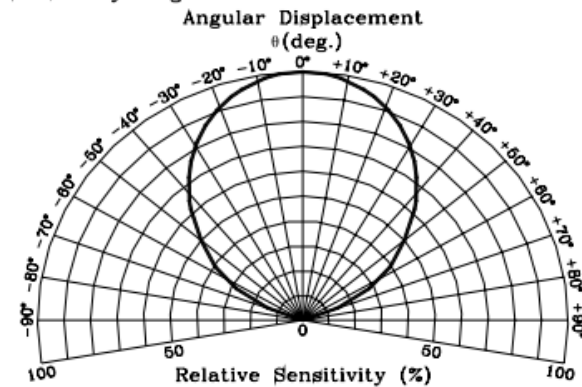
◆ Reliability Test Items

Test Items	Test Conditions	Ratings
High Temperature Storage	Ta=+85°C, Vcc=3.0V	t=240hr.
Low Temperature Storage	Ta=-40°C, Vcc=3.0V	t=240hr.
High Temperature High Humid Storage	Ta=40°C, 90%RH, Vcc=3.0V	t=240hr.
Temperature Cycling	-40°C (30min) ~ +85°C (30min)	20cycles test

Relative Reception Distance vs Transmitter Carrier Frequency



Sensitivity 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



Testing Method

Distance between emitter and detector specifies maximum distance that output waveform satisfies the standard (FIG-1) under the conditions below against the standard transmitter.

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

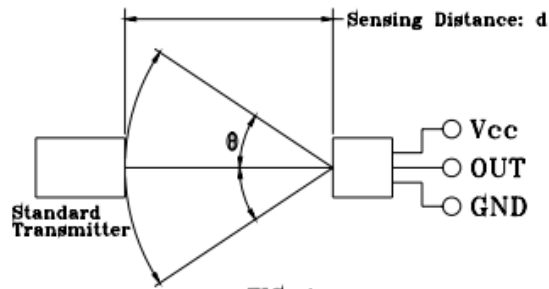
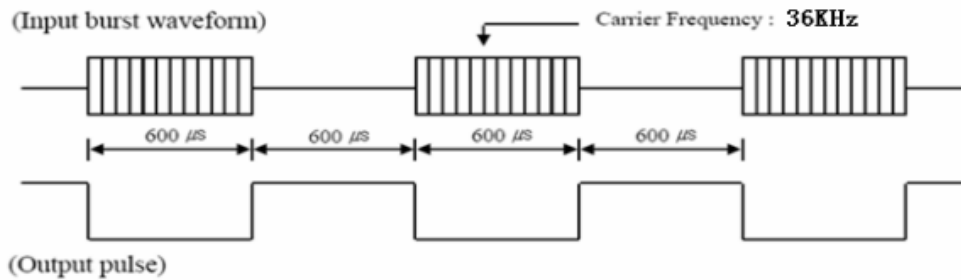
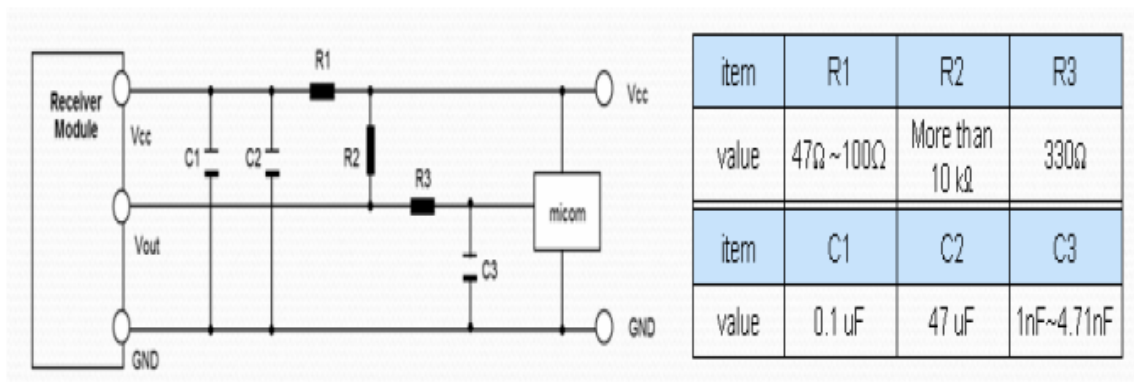


FIG-1

Fig-2



Application circuit





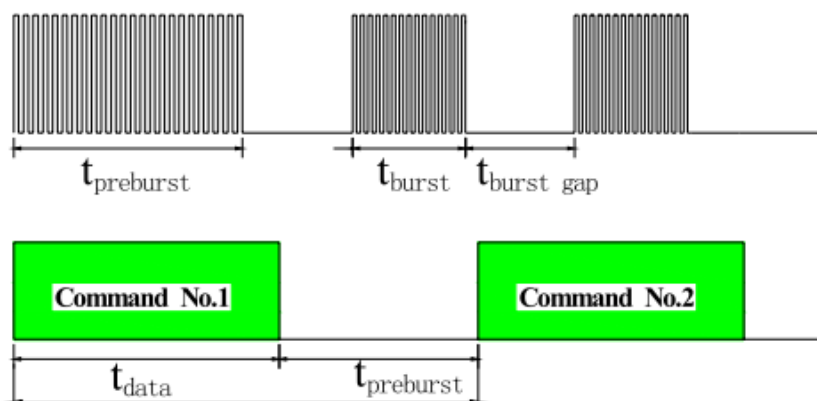
Application Guide

1. Acceptable code list

Data format	Code acceptable
NEC code	O
Philips RC5 code	O
Philips RC6 code	O
Philips PhRCMM code	X
Phillips RECS-80 Code	X
Tosmba Micom Code	O
RCA code	X
Sony code	O
Sony 12-bit code	O
Sony 15-bit code	X
Sony 20-bit code	X
Matsushita Code	O
Zenith Code	O
JVC Code	O
Continuous code	X

2. Suitable data format

Minimum Burst Length t_{burst}	300us
Minimum Burst Gap time $t_{burst-gap}$	300us
Minimum data pause time (bentween the data command stpause)	23ms





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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, don't 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.

Package Dimensions

