

KONDO

Kondo Electric Corporation

Infrared Receiver Module 紅外線遙控接收器

Module No: PIC-428LM

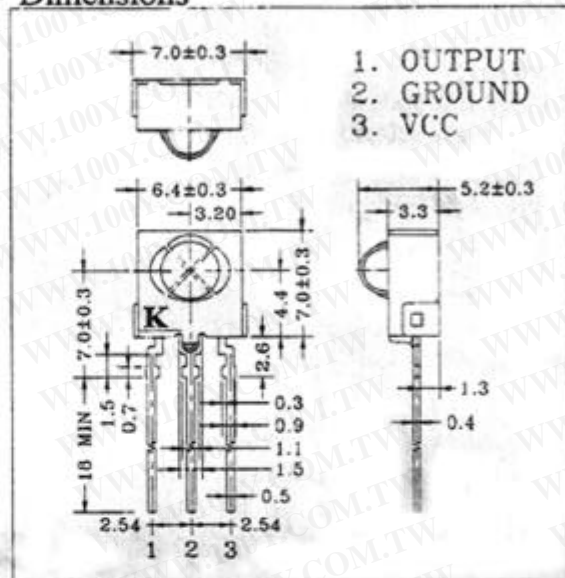
1. Features:

- Miniature size
- Built-in exclusive IC
- Wide half angle & long reception distance
- Good noise-proof capability
- High immunity against ambient light
- High protection ability to EMI
- Back Metal Cover
- Side view
- Mesh

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

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

Parameter	Symbol	Ratings	Unit
Supply Voltage	Vcc	6.0	V
Operating Temperature	Topr	-10 ~ +60	$^\circ\text{C}$
Storage Temperature	Tstg	-20 ~ +75	$^\circ\text{C}$
Soldering Temperature *1	Tsol	240	$^\circ\text{C}$

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

4. Electro-optical Characteristics

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply voltage	Vcc		4.5		5.5	V
Current Consumption	Icc	Input Signal = 0	0.7	1.0	1.5	mA
Reception Distance	d	Standard Signal	7	15		m
Half Angle	$\Delta\theta$			± 45		deg
B.P.F. Center Frequency	Fo			37.9		kHz
Peak Wavelength	λ_p			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 = 600 μs	500	600	700	μs
Low Level Pulse Width	Twl		500	600	700	μs

5. Reliability Test Items

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

Test Items	Test Conditions	Ratings
High Temperature Storage	$T_a=60^\circ\text{C}$, Vcc=5.0V	t=240hr.
Low Temperature Storage	$T_a=-10^\circ\text{C}$, Vcc=5.0V	t=240hr.
High Temperature High Humid Storage	$T_a=60^\circ\text{C}$, 90%RH, Vcc=5.0V	t=240hr.
Temperature Cycling	-20°C (30min) ~ $+75^\circ\text{C}$ (30min)	20 cycles
Soldering Heat	$240\pm 5^\circ\text{C}$	5 sec.

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 勝特力电子(上海) 86-21-54151736
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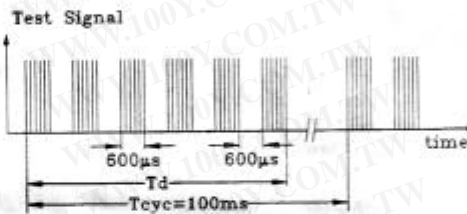
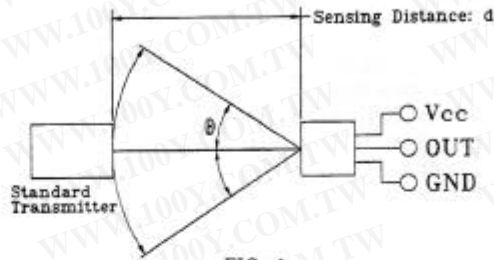
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Testing Method

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

- 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 $V_o \geq 50 \text{ mV}_{p-p}$ under the measuring circuit specified in FIG-3



$T_{cyc} - T_d > 25 \text{ ms}$ is recommended for optimal function

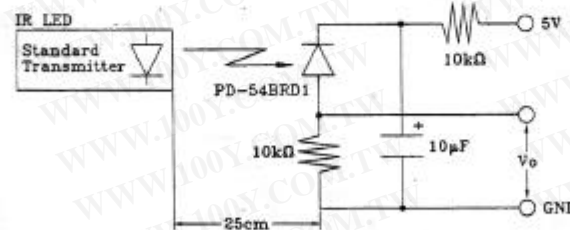
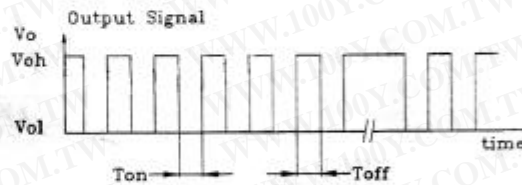


FIG-3 Power Output Measurement Circuit

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.

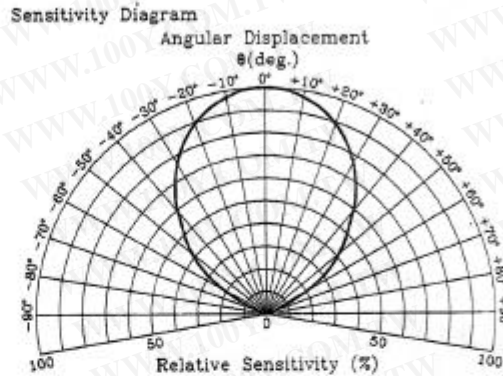
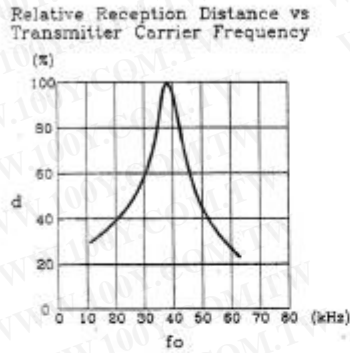
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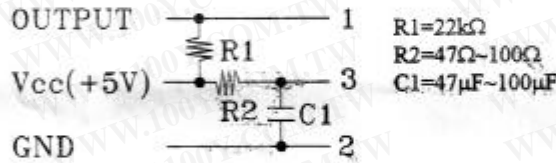
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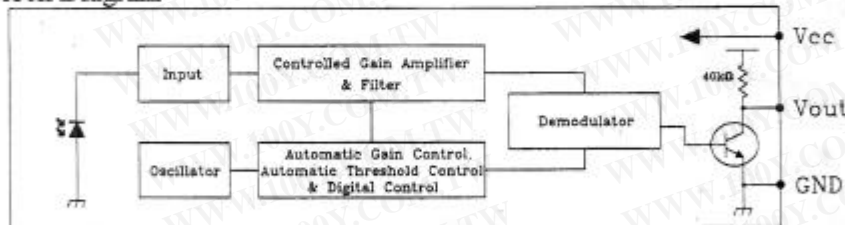
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In case of noisy power supply, please serially insert 100 Ω resistor and about 47 μ F electrolytic capacitor in Vcc line and ground as follows:-



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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Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below
Confidence level:90%
LTPD:10%

Test items		Failure Judgement Criteria	Samples(n) Defective(d)
Temperature cycle	1 cycle -40°C +25°C +85°C (30min) (5min) (30min) 300 cycle test	L0 ≤ LX0.8 L45 ≤ LX0.8 L: Lower specification limit	n=22,d=0
High temperature test	Temp:+85°C Vcc:6v 1000hrs		n=22,d=0
Low temperature storage	Temp:-40°C 1000hrs		n=22,d=0
High temperature High humidity	Ta:60°C ,RH:90% Vcc:6V 1000hrs		n=22,d=0
Solder heat	Temp:260°C ± 5°C 10sec 4mm From the bottom of the package		n=22,d=0

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