# INFRARED RECEIVER MODULE

## Description

The MIM-03M2AKF is 37.9 KH<sub>z</sub> miniaturized infrared receivers for remote control and other appplications requiring improved ambient light rejection. The separate PIN diode and preamplifier IC are assembled on a single leadframe. The epoxy package contains a special IR filter.

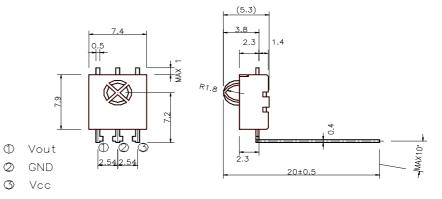
This module has excellent performance even in disturbed ambient light applications and provides protection against uncontrolled output pulses.



**MIM-0KM2AKF** 

### Features

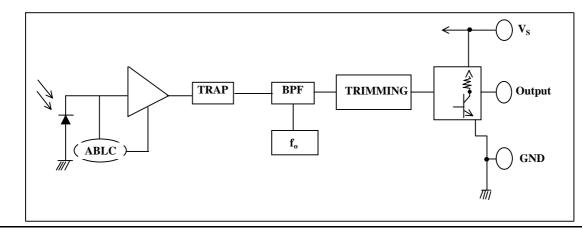
- Photo detector and preamplifier in one package
- Internal filter for PCM frequency
- High immunity against ambient light
- Improved shielding against electric field disturband
- 2.4-Volt supply voltage; low power consumption
- TTL and CMOS compatibility



unit : mm

Ps 1. MATERIAL : 0.40 ±0.05 THICK 2. TOLERANCE : ±0.1 UNLESS OTHERWISE SPECIFIED

## **BLOCK DIAGRAM**





# **MIM-0KM2AKF**

## **Absolute Maximum Ratings**

Absolute Maximum Rat	@ Ta=25℃			
Item	Symbol	Ratings	Unit	Remark
Supply voltage	V <sub>CC</sub>	5.8	V	
Operating temperature	T <sub>opr</sub>	-10 ~ + 60	°C	
Storage temperature	T <sub>stg</sub>	-20 ~ + 75	°C	
Soldering temperature	T <sub>sd</sub>	260	°C	Maximum 5 seconds

# Electro-optical characteristics (Vcc=3V)

 $(T_a=25^{\circ}C, Vcc=3V)$ 

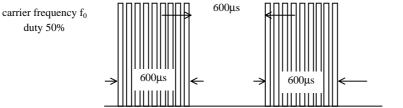
Parameter	Symbol	Min.	Тур.	Max.	Unit	Remarks
Current consumption	Icc			5.0	mA	Under no signal
Response wavelength	λp		940		nm	
Tuning frequency	$\mathbf{f}_0$		37.9		KH <sub>Z</sub>	
Output form	active low output					
H level output voltage	V <sub>0</sub> h	2.2			V	
L level output voltage	V <sub>0</sub> l			0.5	V	
H level output pulse width	Twh	400		800	$\mu$ s	
L level output pulse width	Twl	400		800	$\mu$ s	
Distance between emitter & detector	L	10.0			m	Note 1
Half angle	riangle  heta		±45		deg	Horizonal direction

# **Test Method**

# A. Standard Transmitter

duty 50%

ON/OFF pulse width satisfied from 25 cm to detection limit



### Fig 1. Burst Wave

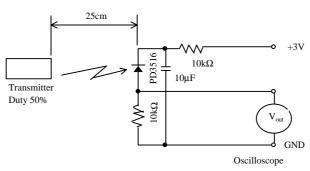
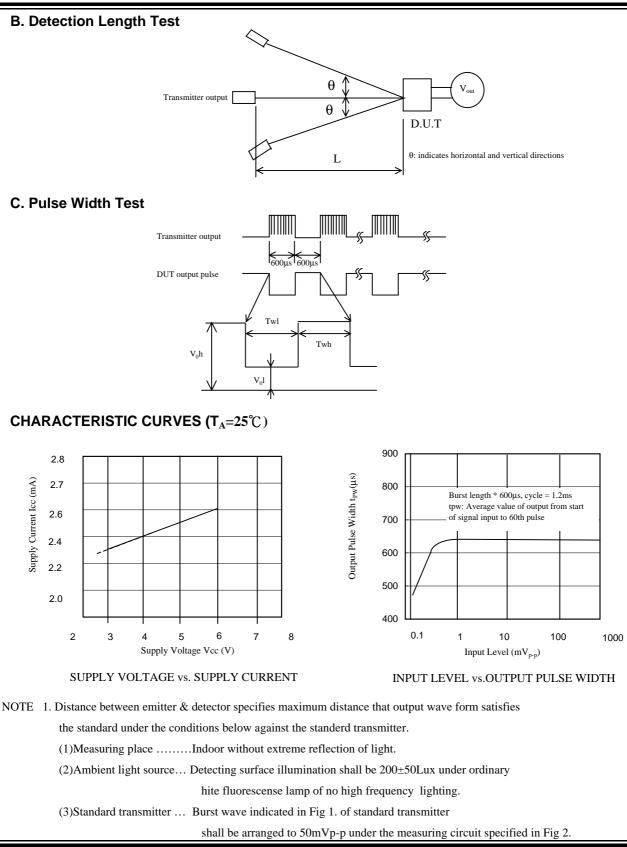


Fig 2. Standard Transmitter Measurement circuit

# MIM-0KM2AKF



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Reliability			
Test item	Test condit	Standard	
High temparature	Ta=+60°C Vcc=5.0 V	t=240H	Note 2.
High temp. & high humi.	Ta=+40°C 90%RH Vcc=5.0V	t=240H	Note 2.
Low temparature	$Ta = -10^{\circ}C$ $Vcc = 5.0V$	t=240H	Note 2.
Heat cycle	$-20^{\circ}C(0.5H) \sim +75^{\circ}C(0.5H)$ 20cycl	Note 2.	
Dropping	Test devices shall be dropped 3 time	Note 3.	
	onto hard wooden board from a 75cm		

NOTE 2. (electro-optical charactistics) shall be satisfied sfter leaving 2 hours in the normal temperature .

NOTE 3. (electro-optical charactistics) shall be satisfied and no conoid deforms and destructions of appearance .(excepting deforms of terminals)

### **Inspection standard**

1. Among electrical characteristics, total number shall be inspected on items blow.

- 1-1 front distance between emitter & detector
- 1-2 Current consumption
- 1-3 H level output voltage
- 1-4 L level output voltage

2. Items except above mentioned are not inspected particularly , but shall fully satisfy

#### CAUTION ( When use and storage of this device )

1.Store and use where there is no force causing transformation or change in quality .

- 2. Store and use where there is no corrosive gas or sea(salt) breeze .
- 3.Store and use where there is no extreme humidity .
- 4. Solder the lead-pin within the condition of ratings. After soldering do not add extra force .
- 5.Do not wash this device . Wipe the stains of diode side with a soft cloth. You can
- use the solvent, ethylalcohol or methylalcohol or isupropylene only.
- 6.To prevent static electricity damage to the Pre-AMP make sure that the human body , the soldering iron is connected to ground before using .
- 7.Put decoupling device between Vcc and GND for reduse the noise from power supply line .
- 8. The performance of remote-control system depends on environments condition and ability of periferal parts. Customer should evaluate the performance as total system in those conditions after system up with components such as commander , micon and this receiver module .

## Guarantee period and scope

1.Guarantee period

One year after delivery to desired place .

2. Guarantee scope

A re-delivery of goods will be carried out if the cause of malfunction lies in our device .However no responsibilities be taken for the inconveniences caused by the malfunction of our devices .

### Others

1. This device is not design to endure radiative rays and heavily charged particles .

2.In case where any trouble or questions arise, both parties agress to make full discussion covering the said problem .