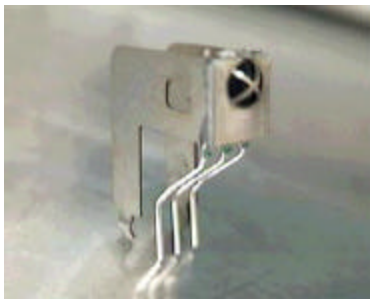
INFRARED RECEIVER MODULE MIM-0KM9XKF SERIES

Description

The MIM-0KM9XKF SERIES is miniaturized infrared receivers for remote control and other applications 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.

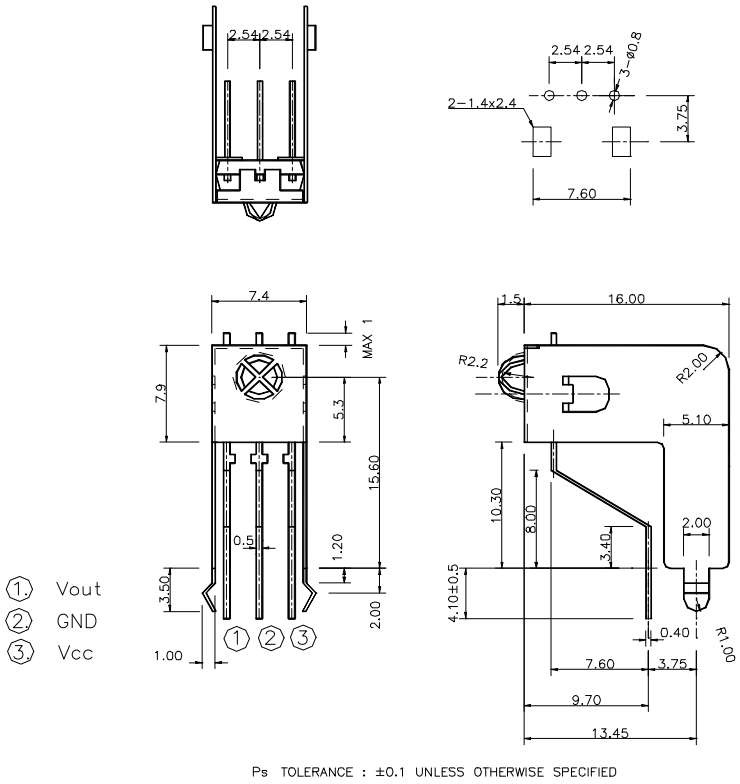


Features

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

MIM-0KM9XKF Series Models

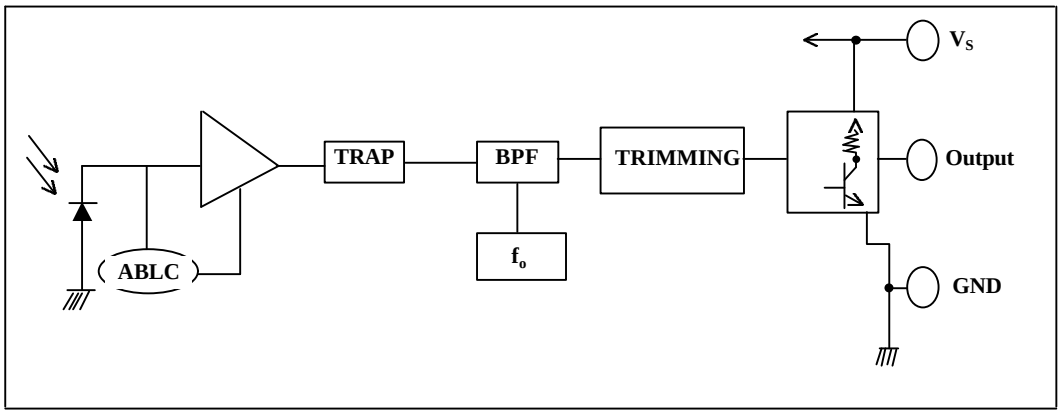
- MIM-0KM9AKF 37.9KHz
- MIM-0KM9BKF 32.7KHz
- MIM-0KM9CKF 40.0KHz
- MIM-0KM9DKF 36.7KHz
- MIM-0KM9FKF 56.7KHz



Ps TOLERANCE : ±0.1 UNLESS OTHERWISE SPECIFIED

Unit : mm

BLOCK DIAGRAM



Absolute Maximum Ratings

@ Ta=25℃

Item	Symbol	Ratings	Unit	Remark
Supply voltage	V_{CC}	5.8	V	
Operating temperature	T_{opr}	-10 ~ + 60	℃	
Storage temperature	T_{stg}	-20 ~ + 75	℃	
Soldering temperature	T_{sd}	260	℃	Maximum 5 seconds

Electro-optical characteristics (Vcc=2.4V)

(T_a=25°C , Vcc=2.4V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Current consumption	Icc			5.0	mA	Under no signal
Response wavelength	λp		940		nm	
Tuning frequency	f_0	37.9 , 32.7 , 40.0 , 36.7 , 56.7			KH_Z	
Output form	- - - - - active low output - - - - -					
H level output voltage	V_0h	2.2			V	
L level output voltage	V_0l			0.5	V	
H level output pulse width	Twh	400		800	μs	
L level output pulse width	Twl	400		800	μs	
Distance between emitter & detector	$L_{1(Vcc=3V)}$	10.0			m	Note 1
	$L_{2(Vcc=2.4V)}$	7.0			m	
Half angle	△Θ		±45		deg	Horizonal direction

Test Method

A. Standard Transmitter

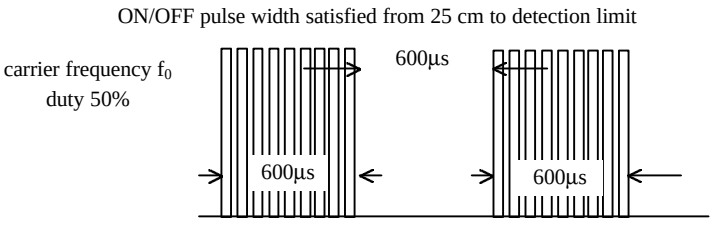


Fig 1. Burst Wave

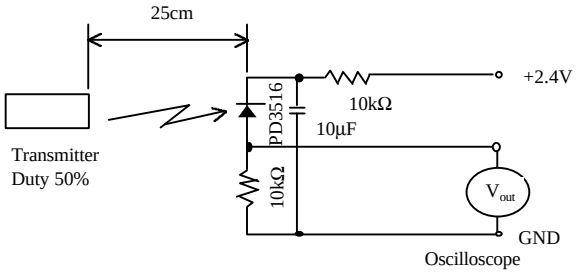
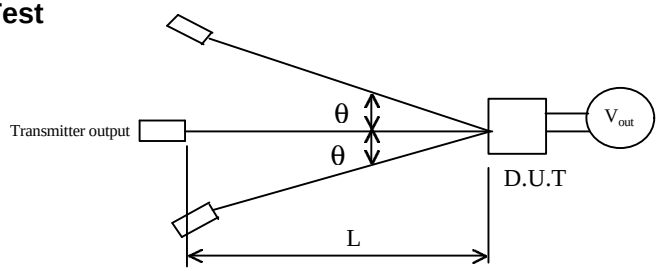


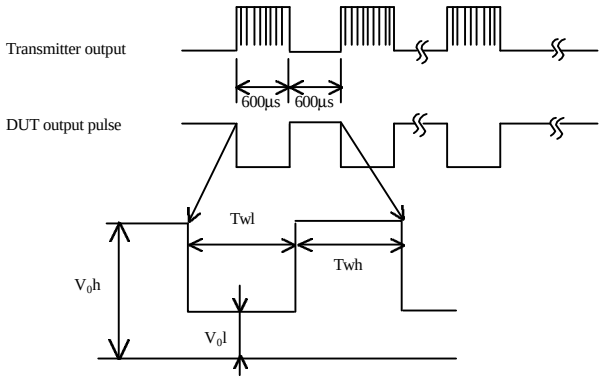
Fig 2. Standard Transmitter Measurement circuit

B. Detection Length Test

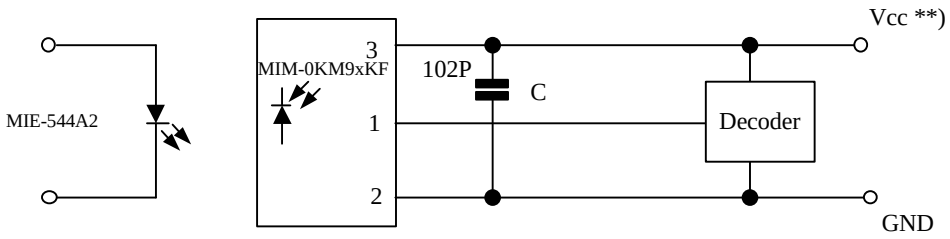


θ: indicates horizontal and vertical directions

C . Pulse Width Test

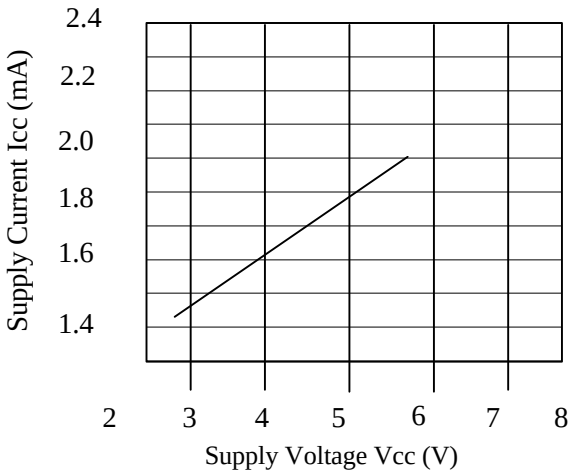


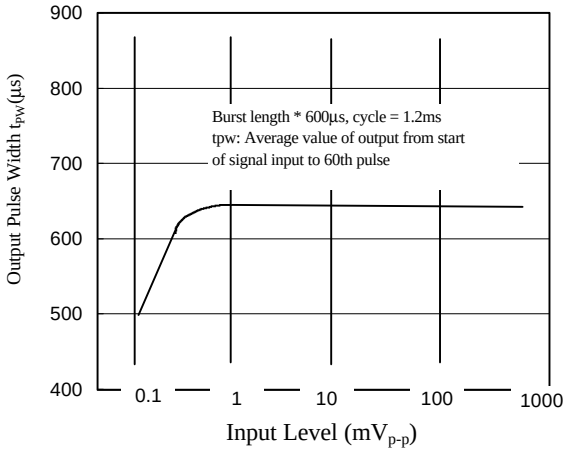
Application Circuit



*) only necessary to supress power supply disturbances.
**) tolerated supply voltage range : 2.4V < Vcc < 5.8V

CHARACTERISTIC CURVES (T_A=25℃)





INPUT LEVEL vs.OUTPUT PULSE WIDTH

NOTE 1. Distance between emitter & detector specifies maximum distance that output wave form satisfies the standard under the conditions below against the standerd transmitter.

(1)Measuring place ……Indoor without extreme reflection of light.

(2)Ambient light source…Detecting surface illumination shall be 200±50Lux under ordinary hite fluorescense lamp of no high frequency lighting.

(3)Standard transmitter …Burst wave indicated in Fig 1. of standard transmitter shall be arranged to 50mVp-p under the measuring circuit specified in Fig 2.