



### ZIRM1A01-F

## Infrared miniaturized receivers



## Descriptions

- The Z IRM1A01-F is miniaturized receivers for infrared remote control systems.
- PIN diode and preamplifier on lead frame, the epoxy is designed as IR filter, package contains a special IR filter.
- The demodulated output signal can directly be decoded by a microprocessor.
- YT-IRM1A01-F is the standard IR remote receiver series, supporting all major transmission codes.

## Features

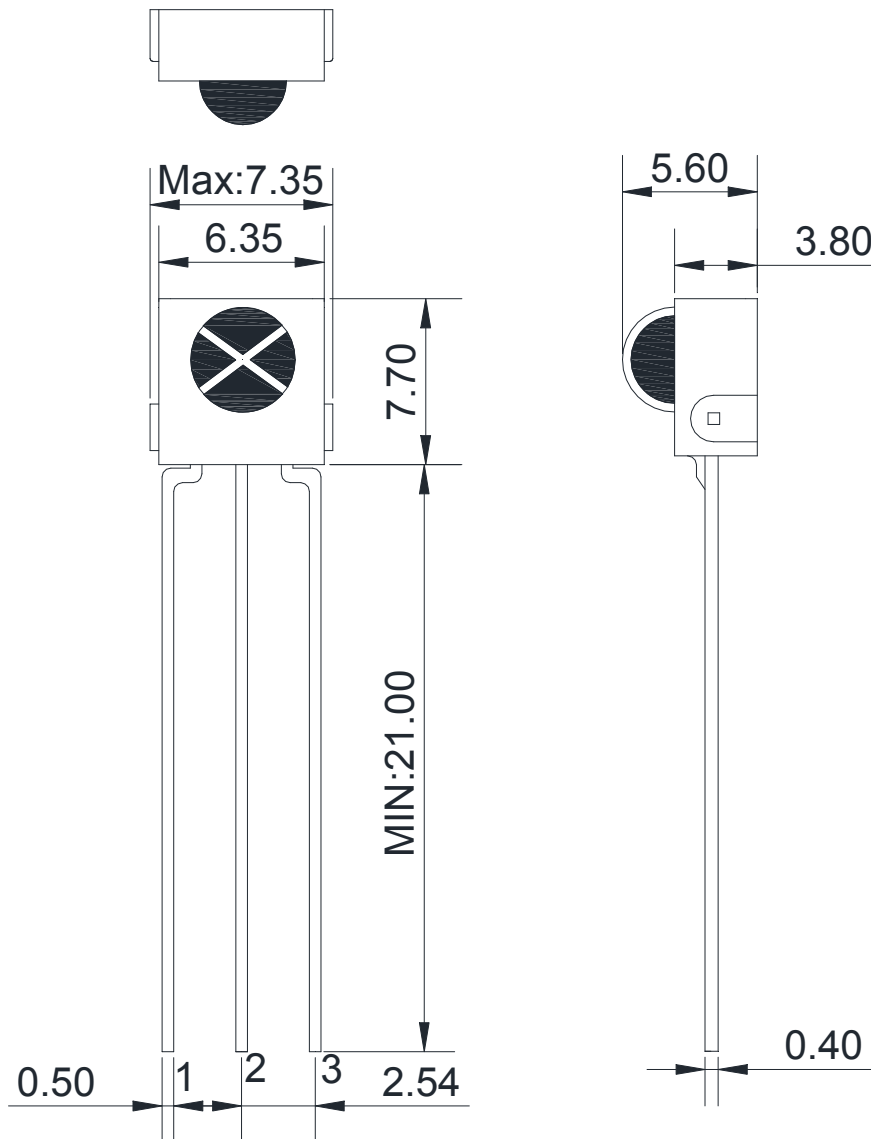
- Photo detector and preamplifier in one package.
- Internal filter for PCM frequency.
- High immunity against ambient light.
- Improved shielding against electric field disturbance.
- 3.0V or 5.0V supply voltage.
- low power consumption.
- TTL and CMOS compatibility.
- Suitable transmission code: NEC code, RC5 code.

## Applications

- 1. Light detecting position of remote control
- 2. AV instrument such as TV, VCR, CD Audio, etc.
- 3. Home application such as air conditioner, Fan etc.
- 4. Multi-media equipment.



### Package Dimension



- ① OUT
- ② GND
- ③ VCC

#### NOTES:

- 1.All dimensions are in millimeters.
- 2.Tolerance is  $\pm 0.20\text{mm}$  unless otherwise specified.
- 3.Specifications are subject to change without notice.



### Absolute Maximum Ratings

Parameter (Ta=25°C)	Symbol	Ratings	Unit	Notice
Supply Voltage	Vcc	2.7-6.0	V	—
Operating Temperature	Topr	-30~+65	°C	—
Storage Temperature	Tstg	-40~+85	°C	—
Soldering Temperature	Tsol	260	°C	4mm from mold body less than 5 sec

### Electro-Optical Characteristics

Parameter (Ta=25°C)	Symbol	Condition	Ratings			Unit
			Min.	Typ.	Max.	
Supply Voltage	Vcc	DC voltage	2.7	-	6.0	V
Supply Current	Icc	No signal input	—	—	1.5	mA
Reception Distance	L	At the ray axis	12	—	—	m
		In the range of 45° cone	6	—	—	
B.P.F Center Frequency	fo	—	—	38	—	KHz
Peak Wavelength	λp	—	—	940	—	nm
Half Angle	Δθ	—	—	45	—	deg
High Level Pulse Width	TH	Specified by the output TH period within a range from 10cm to the arrival distance (average value of 50 pulses)	400	—	800	μs
Low Level Pulse Width	TL	Specified by the output TL period within a range from 10cm to the arrival distance (average value of 50 pulses)	400	—	800	μs
High Level Output Voltage	VH	10cm over the ray axis	4.5	—	—	V
Low Level Output Voltage	VL	10cm over the ray axis	—	—	0.5	V



### Typical Electrical/Optical/Characteristics Curves

Fig.4 Relative Spectral Sensitivity vs. Wavelength

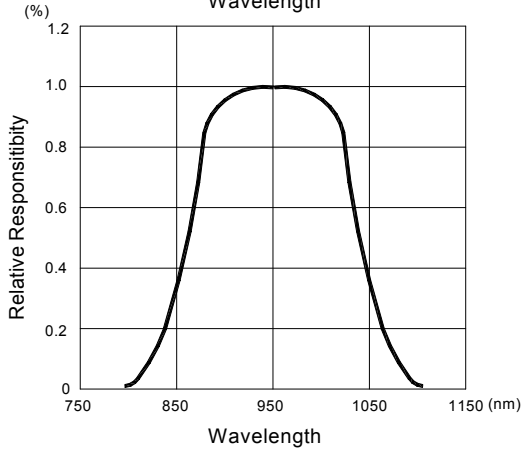


Fig.5 Relative Transmission Distance vs. Direction

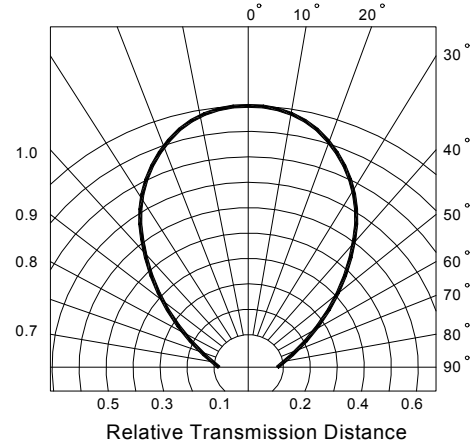


Fig.6 Output Pulse Diagram

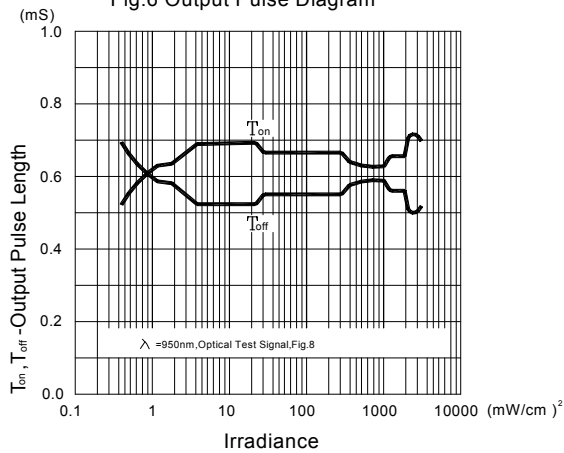


Fig.7 Supply Current vs. Ambient Temperature

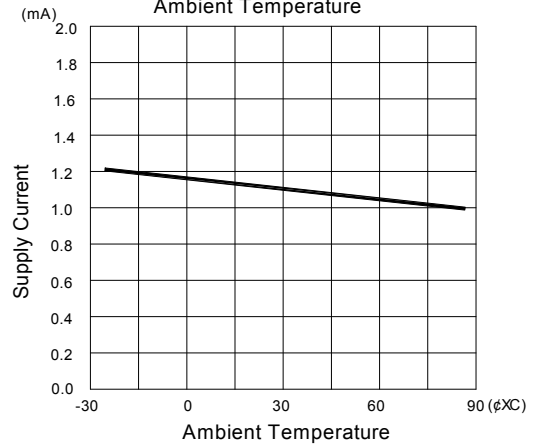


Fig.8 Frequency Dependence of Responsivity

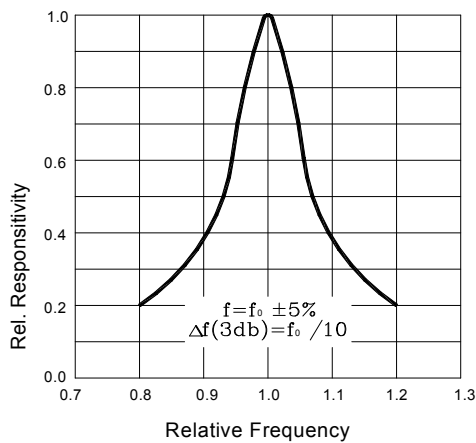
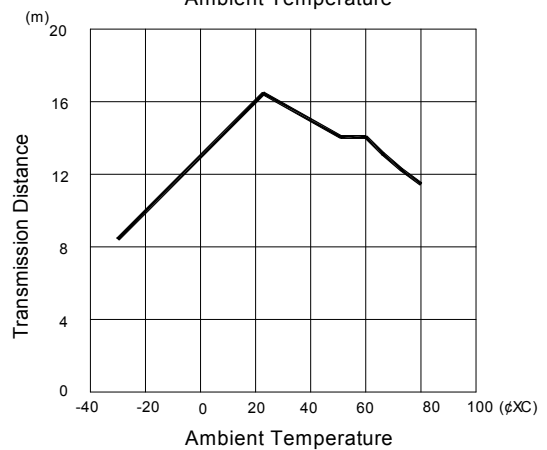
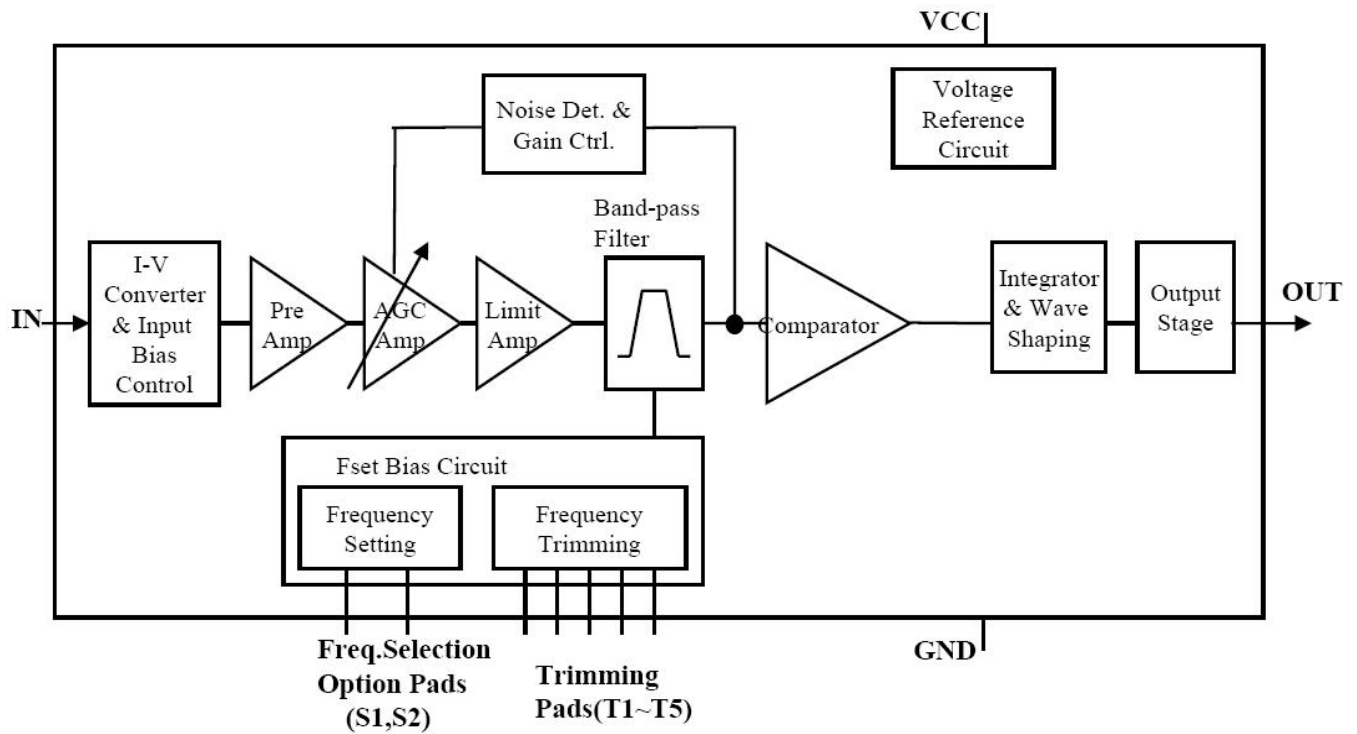


Fig.9 Arrival Distance Vs. Ambient Temperature





### BLOCK DIAGRAM





### Application Circuit

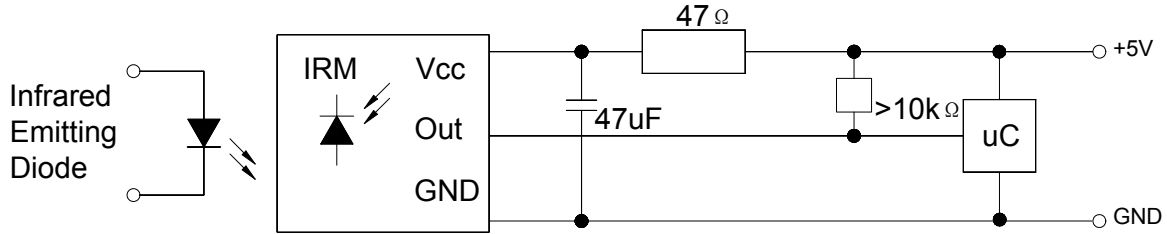


Fig.1 Transmitter Wave Form

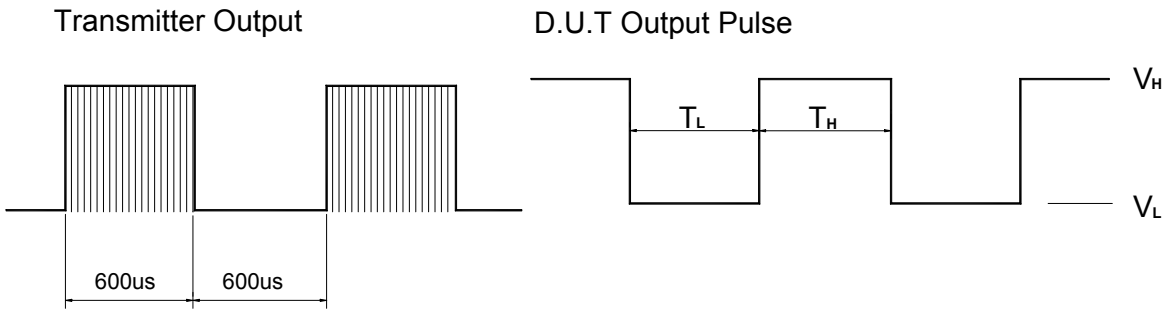


Fig.2 Measuring Method

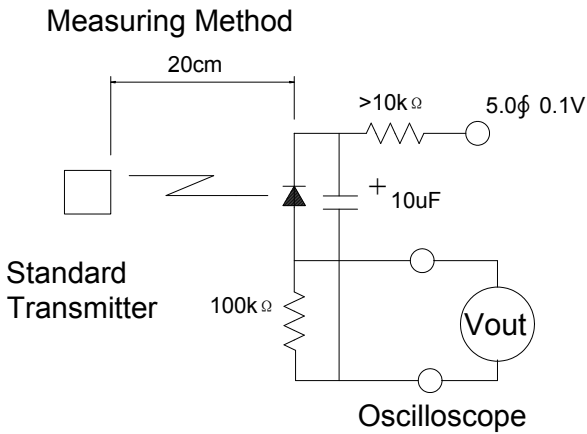


Fig.3 Measuring System

