

LL-MB38

DATA SHEET

QC:

ENG:

Prepared By:

Description

The LL-MB38 series are miniaturized receivers for infrared remote control systems. PIN diode and preamplifier are assembled on lead frame, the epoxy package is designed as IR filter.

The demodulated output signal can directly be decoded by microprocessor. The main benefit is the reliable function even in disturbed ambient and the protection against uncontrolled output pulses.

Features

- Photo detector and preamplifier in package
- Internal filter for PCM frequency
- TTL and CMOS compatibility
- Output active low
- Improved shielding against electrical field disturbance
- Suitable burst length 6 cycles/burst

Special Features

- Small size package
- Enhanced immunity against all kinds of disturbance light
- No occurrence of disturbance pulsed at the output
- Short settling time after power on(<200μs)

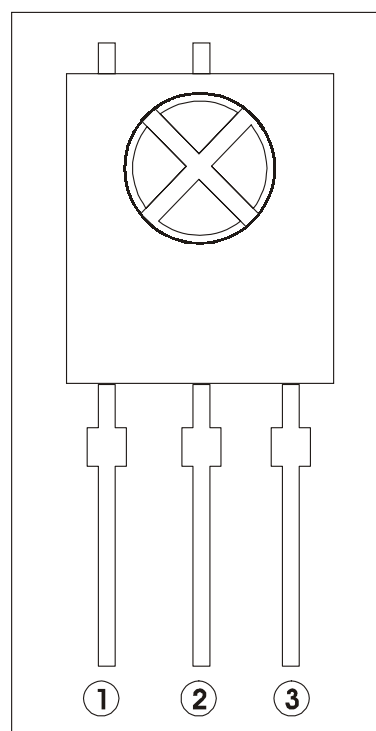


Fig.1

| Pin No. | Pin Name | Description |
|---------|----------|-----------------------|
| 1 | Vout | Signal output |
| 2 | Gnd | Ground |
| 3 | Vin | Positive power supply |

Block Diagram

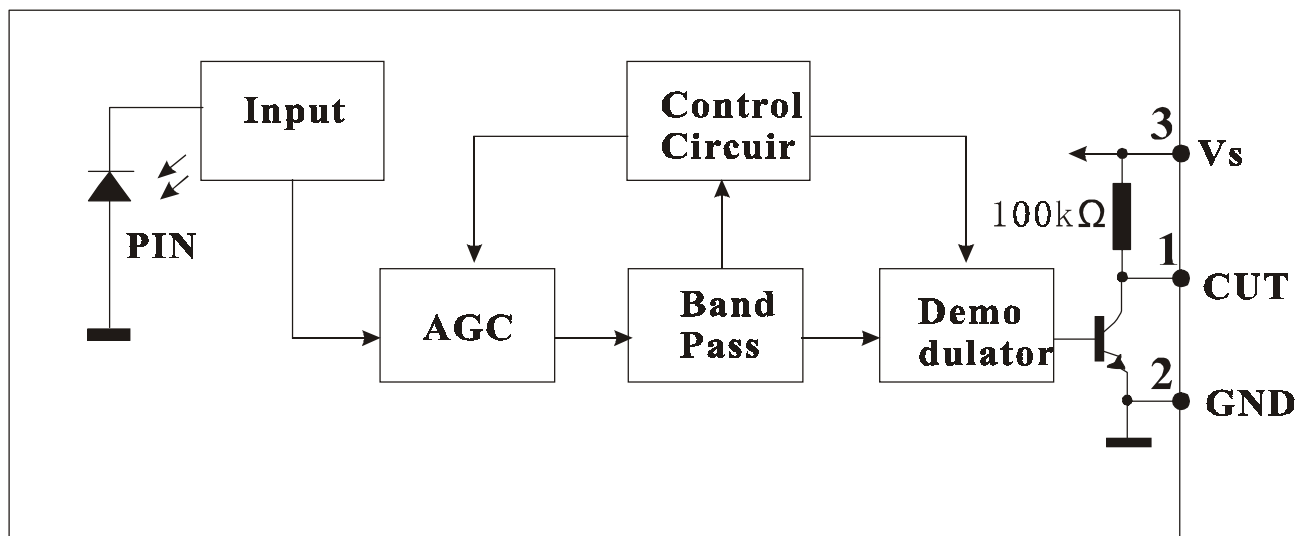


Fig.2

Absolute Maximum Ratings

T_a=25

| parameter | Test Conditions | Symbol | Value | Unit |
|-----------------------------|-----------------------|------------------|------------|------|
| Supply Voltage | (pin 3) | V _s | -0.3...6.0 | V |
| Supply Current | (pin 3) | I _s | 5 | mA |
| Output Voltage | (pin 1) | V _o | -0.3...6.0 | V |
| Output Current | (pin 1) | I _o | 5 | mA |
| Junction Temperature | | T _j | 100 | |
| Storage Temperature Range | | T _{stg} | -25...+85 | |
| Operating Temperature Range | | T _a | -25...+85 | |
| Soldering Temperature | T 5sec,1 mm from case | T _{sd} | 260 | |

Basic Characteristics

Ta=25

| parameter | Test Conditions | Symbol | Min. | Typ. | Max. | Unit |
|-------------------------|---|--------|------|------|------|-------------------|
| Supply Voltage(pin 3) | | Vcc | | 5 | | V |
| Supply Current(pin 3) | Vs=5V,Ev=0 | ISD | | 1 | | mA |
| Transmission Distance | Ev=0,test signal see fig.4, IR diode RY502IRA743, IF=30mA | L | 15 | | | m |
| Output Voltage Low(Pin) | IOSL=0.5mA,Ee =0.7 mW/m ² ,f=fo | VOSL | | | 250 | mV |
| Irradiance(30-40KHz) | Pulse width tolerance:Tpi-5/fo < tpo < tpi-5/fo,Test signal | Ee min | | 0.3 | 0.5 | MW/m ² |
| Directivity | Angle of half transmission distance | 1/2 | | ± 45 | | deg |
| Response wavelength | | p | | 940 | | nm |
| Tuning frequency | | fo | | 38 | | KHz |

1.The burst waveform mentioned below is to be transmitted from standard transmitter measure the pulse width after 10th pulse from transmission.

2.The angle which arrival distance become 80% of L (arrival distance at =0 °)

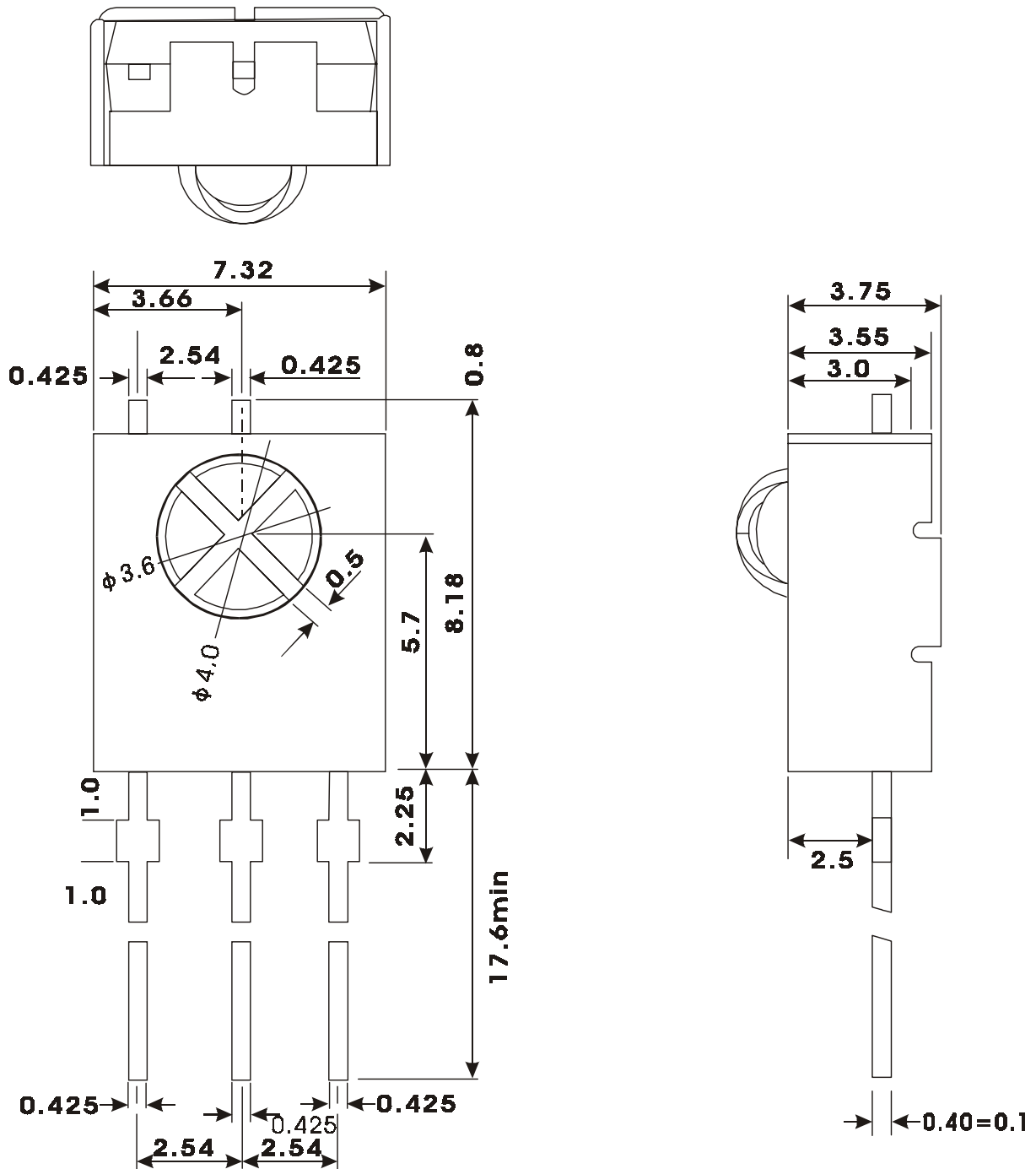
ON/OFF pulse width is to satisfied within 0.5 cm ~ arrival distance.



LUCKY LIGHT

COMMODITY: INFRARED RECEIVER MODULE

DEVICE NUMBER: LL-MB38



| | | | | | |
|--------|------------------------|-------------------------|----------------|----------|-----------|
| ISSUE: | ORAWINO NO: LL-MB38 | | VERSION: 01 | CATE: | DRAWER: |
| | UNIT: mm | TOLERANCE: ± 0.4 | SCALE: 4:1 | CHECKER: | APPROVAL: |

Detection Length Test

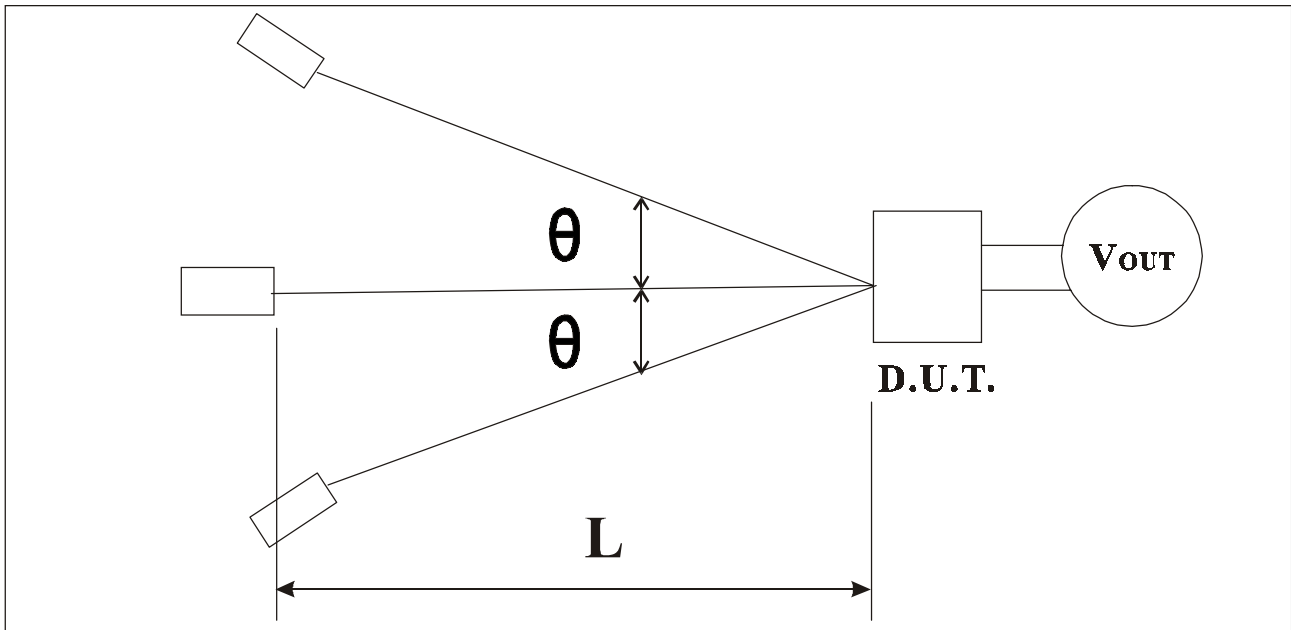


Fig.3

Pulse Width Test

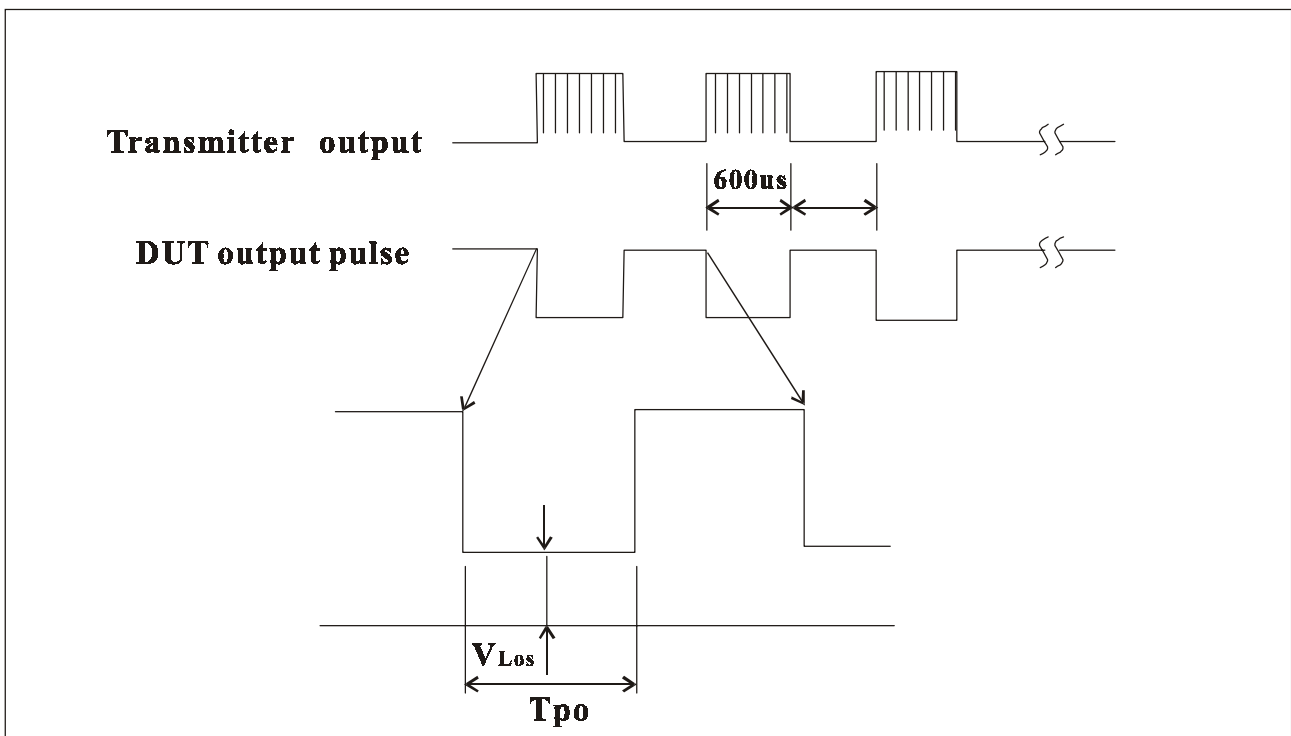
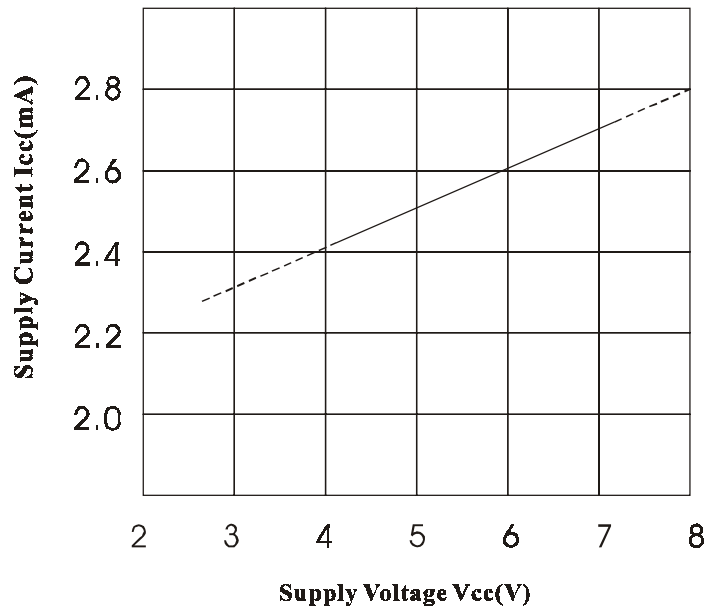
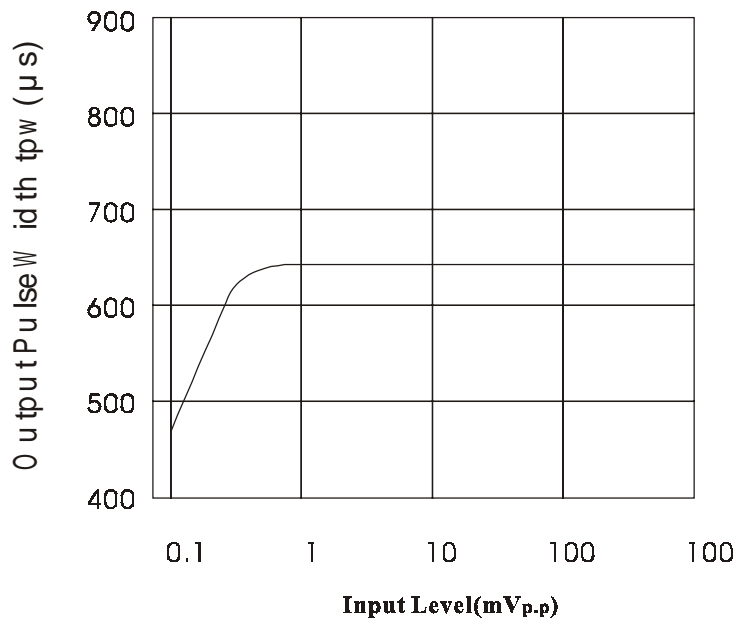


Fig.4



SUPPLY VOLTAGE VS. SUPPLY CURRENT

Fig.5



INPUT LEVEL vs. OUTPUT PULSE WIDTH

Fig.6

Note

1. **Distance between emitter & detector specifies maximum distance that output waveform satisfies the standard under the conditions below against the standard transmitter.**
 - A. **Measuring place..... Indoor without extreme reflection of light.**
 - B. **Ambient light source... Detecting surface illumination shall be 200 ± 500 Lux under Ordinary hit fluorescence lamp of no high frequency lightning.**
 - C. **Standard transmitter... Burst wave indicated in drawing pulse width test of standard Transmitter shall be arranged to 50m Vp-p under the measuring circuit.**
2. **(Electro-optical characteristics) shall be satisfied after 2 hours in the normal temperature.**
3. **(Electro-optical characteristics) shall be satisfied and no conoid deforms and destructions of appearance(excepting deforms of terminals).**