

Infrared Remote Control Receiver Module

LTM-97 Series

Features

- Compact package
- High immunity from ambient light
- Good performance against electric field disturbance
- 5 volt supply voltage and low power consumption
- Pin out can be changed according to customer's requirement

Description

The LTM-97 series are miniaturized receivers for infrared remote control systems. It is a single unit type module which incorporates a PIN diode and a receiving preamplifier IC. The demodulated output signal can directly be decoded by a microprocessor. It has excellent sensitivity and reliable function even in disturbed working environment.

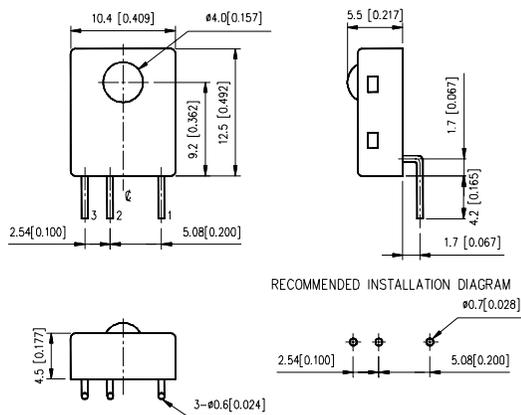
Device No.

| Device No. | Detecting Window | Package Dimension | Pin Out Function | | |
|-------------|------------------|-------------------|------------------|------|------|
| | | | 3 | 2 | 1 |
| LTM-97AS-XX | Side | A | Gnd | Vcc | Vout |
| LTM-97AT-XX | Top | B | Gnd | Vcc | Vout |
| LTM-97BS-XX | Side | C | Gnd | Vcc | Vout |
| LTM-97BT-XX | Top | D | Vcc | Vout | Gnd |
| LTM-97CS-XX | Side | C | Vout | Vcc | Gnd |
| LTM-97CT-XX | Top | D | Vout | Vcc | Gnd |
| LTM-97DS-XX | Side | C | Vout | Gnd | Vcc |
| LTM-97DT-XX | Top | D | Vout | Gnd | Vcc |
| LTM-97ES-XX | Side | C | Vout | Gnd | Vcc |
| LTM-97ET-XX | Top | D | Vout | Gnd | Vcc |

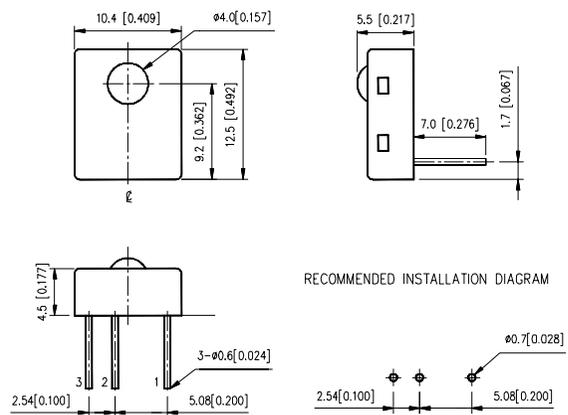
XX: Carrier frequencies for 33, 36, 38, 40, 56.8 kHz

Package Dimensions

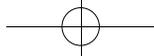
A. LTM-97AS-XX



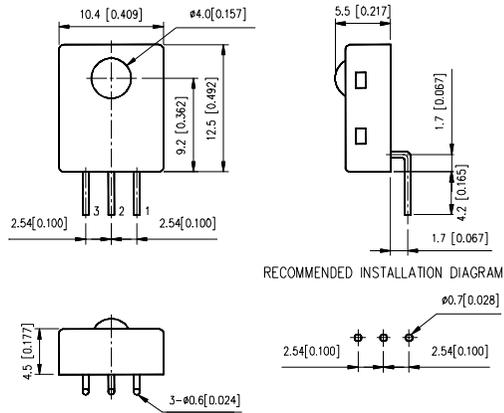
B. LTM-97AT-XX



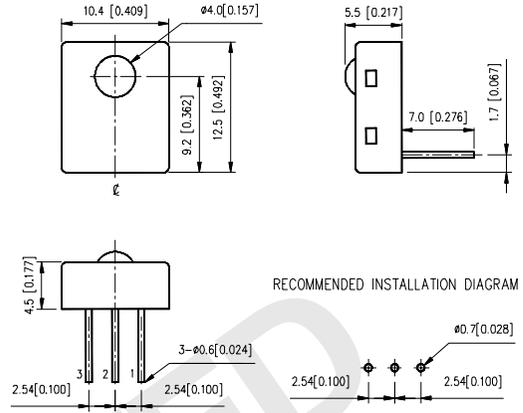
INFRARED PRODUCTS



C. LTM-97BS/CS/DS/ES-XX



D. LTM-97BT/CT/DT/ET-XX

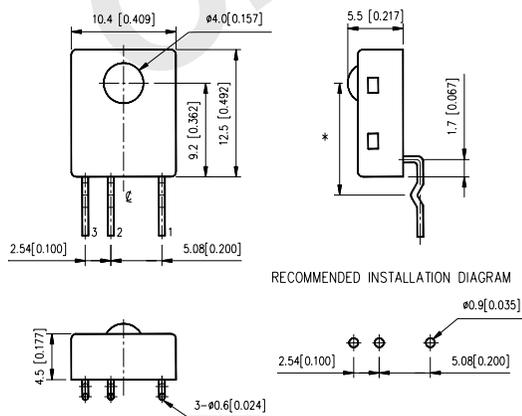


Note: 1. All dimensions are in millimeters (inches).
 2. Tolerance is $\pm 0.25\text{mm}$ (0.01") unless otherwise noted.
 3. XX: Frequency

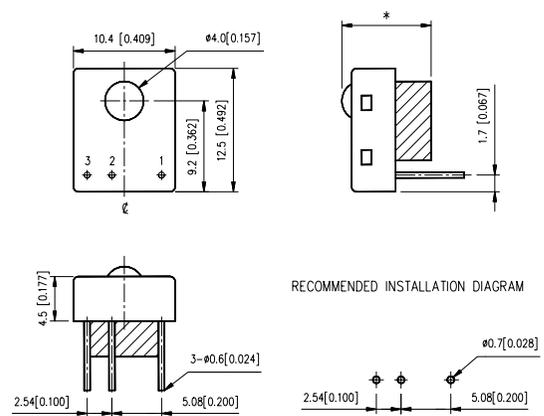
Special Forming (Option)

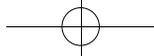
- We provide lead forming service if it's necessary.
- "*" Dimension can be changed according to customer's requirement

A. LTM-97AS-XX#

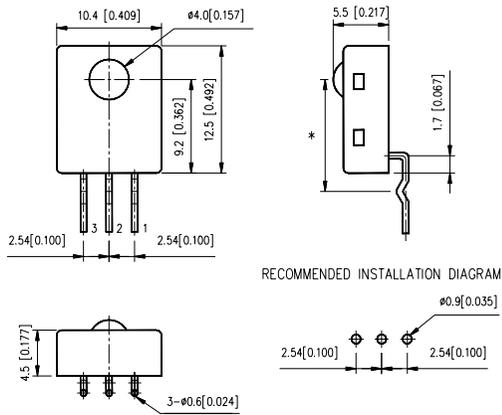


B. LTM-97AT-XX#

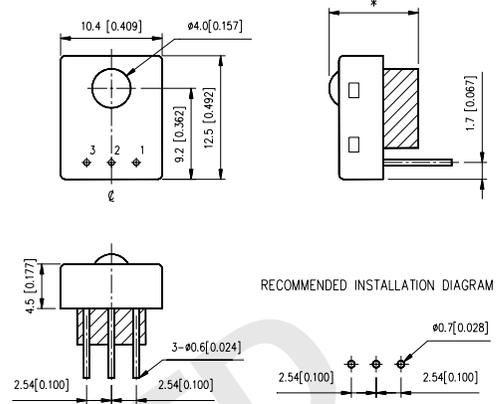




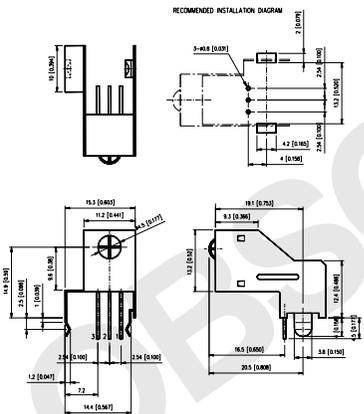
C. LTM-97BS/CS/DS/ES-XX#



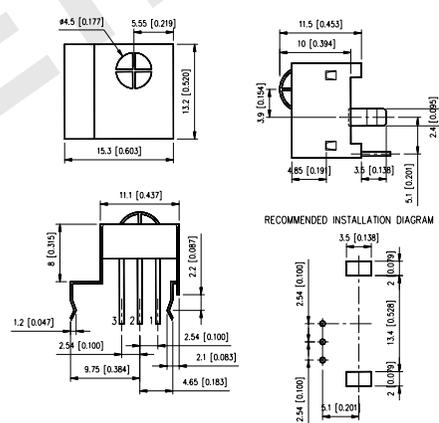
D. LTM-97BT/CT/DT/ET-XX#



E. LTM-97XS-XXF



F. LTM-97XT-XXH



INFRARED PRODUCTS

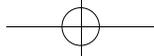
- Note: 1. All dimensions are in millimeters (inches).
 2. Tolerance is $\pm 0.25\text{mm}$ (0.01") unless otherwise noted.
 3. XX: Frequency

Absolute Maximum Ratings (Ta=25°C)

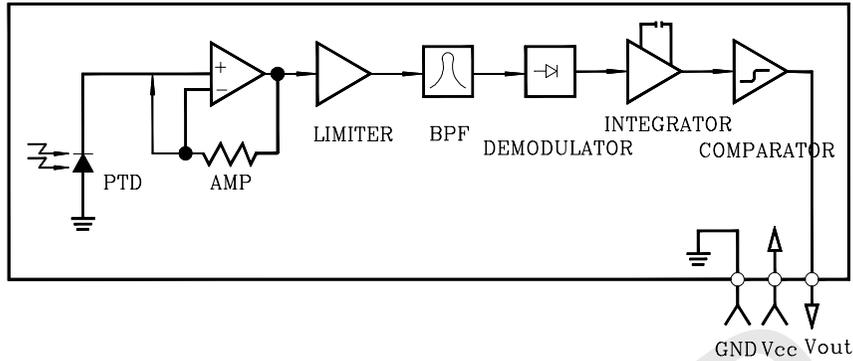
| Parameter | Symbol | Rating | Unit |
|-----------------------|--------|-----------|------|
| Supply Voltage | Vcc | 6.0 | V |
| Operating Temperature | Topr | -20 ~ +70 | °C |
| Storage Temperature | Tstg | -25 ~ +85 | °C |
| Soldering Temperature | Tsd | 260 | °C |

Recommended Operating Condition

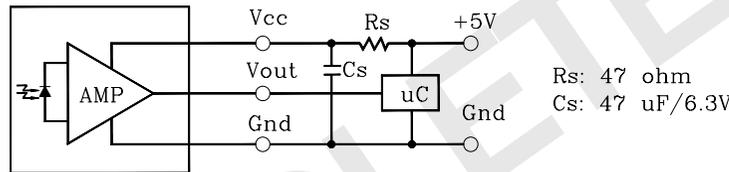
| Parameter | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
| Supply Voltage | Vcc | 4.7 | 5.3 | V |



Block Diagram



Application Circuit

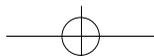


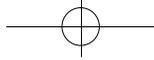
•Rs and Cs is only necessary to suppress power supply disturbance.

Electrical Characteristics

| Item | Symbol | Conditions | Rating | | | Unit |
|-------------------------------------|----------------------------|--|--------|-----|-----|-------|
| | | | Min | Typ | Max | |
| Current Consumption | I _{cc} | No signal input, V _{cc} =5V | 1.1 | | 2.5 | mA |
| Wave Length of the Max. Sensitivity | λ S _{max} | — | | 940 | | nm |
| Reception Distance | L | At the ray axis | 10 | | | m |
| | | The ray receiving surface at a vertex and in relation to the ray axis: a: in the range of 30° cone b: in the range of 45° cone | 8 6 | | | |
| Low Level Output Voltage | V _{OL} | — | | | 0.5 | V |
| High Level Output Voltage | V _{OH} | — | 4.5 | | | V |
| Low Level Pulse Width | t _{WL} | Specified by the output tWL period within a range from 5cm to the reception distance | 400 | 600 | 800 | μ S |
| High Level Pulse Width | t _{WH} | Specified by the output tWH period within a range from 5cm to the reception distance | 400 | 600 | 800 | μ S |
| Noise Suppression | NQ | 25-50°C No outside light | | | 0 | Pulse |

Note: Detailed condition please refer to measuring method.





C. Pulse width measurement

The following wave forms are transmitter output and our receiver module's output.

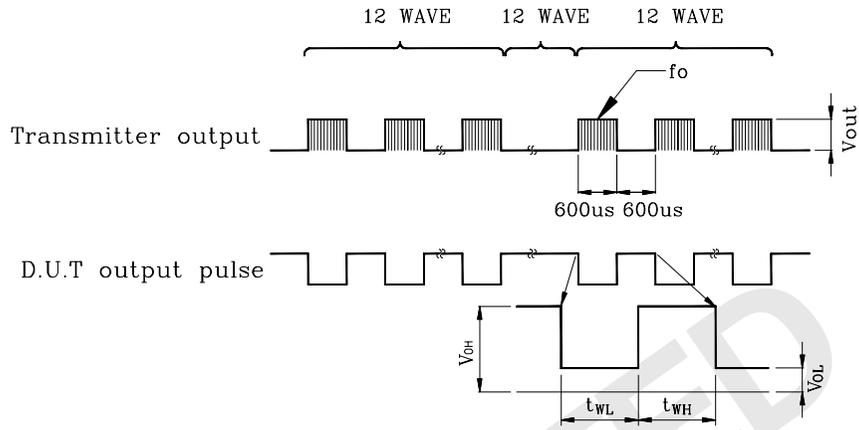


Fig. 4 Output pulse

OBSOLETE