

KSM-95 TM4Y

The KSM-95 TM4Y consist of a PIN Photodiode of high speed and a preamplifier IC in the package as an receiver for Infrared remote control systems

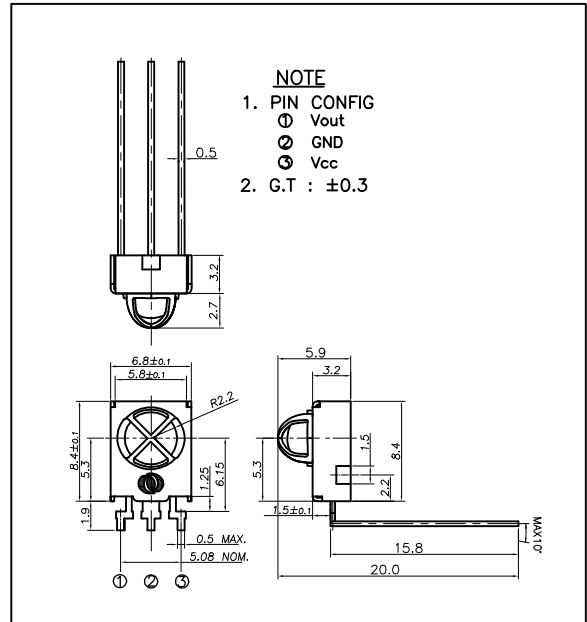
Features

- One mold small size package
- Wide supply-voltage range : 2.7V to 5.5V
- Shielded against electrical field disturbance
- High immunity against ambient light disturbances (Logic Controller Adaptation)
- Available for carrier frequencies between 32.7KHz to 56.9KHz
- TTL and CMOS compatible

Applications

- Audio & Video Applications (TV, VTR, Audio, DVDP, CDP)
- Home Appliances (Air conditioner, Computer, Camcoder)
- Wireless Toys
- Remote Control Equipment

DIMENSIONS



Maximum Ratings

[Ta=25]

| Parameter | Symbol | Ratings | Unit |
|-----------------------|--------|--------------------|------|
| Supply Voltage | Vcc | 6.0 | V |
| Operating Temperature | Topr | -25 ~ +85 | |
| Storage Temperature | Tstg | -25 ~ +85 | |
| Soldering Temperature | Tsol | 260 (Max 5 sec) | |

B.P.F Center Frequency

| Model No. | B.P.F Center Frequency(kHz) |
|-------------|-----------------------------|
| KSM-951TM4Y | 40.0 |
| KSM-952TM4Y | 36.7 |
| KSM-953TM4Y | 37.9 |
| KSM-954TM4Y | 32.7 |
| KSM-955TM4Y | 56.9 |

Electro-Optical Characteristics

[Ta=25 , Vcc=5.0V(Vcc=3.0V)]

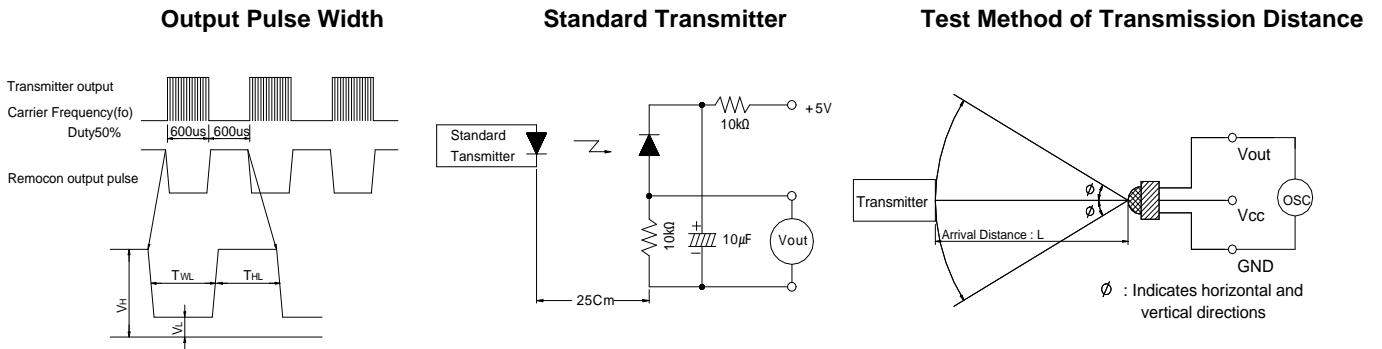
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit | |
|----------------------------------|-------------------|------------------------|----------|----------|------|------|---|
| Recommended Supply Voltage | Vcc | | 2.7 | 3.0 | 5.5 | V | |
| Current Consumption | Icc | No signal input | - | 1.0 | 1.2 | mA | |
| Peak Wavelength *1 | λ | | - | 940 | - | nm | |
| B.P.F Center Frequency | fo | | - | 37.9 | - | kHz | |
| Transmission Distance *1 | L | 250 ± 50lx | 0 ° | 15 | - | - | m |
| | | | ± 30 ° | 12 | - | - | |
| High level Output voltage *1 | V _{OH} | 30cm over the ray axis | 4.5(2.8) | 5.0(3.0) | - | V | |
| Low level Output voltage *1 | V _{OL} | | - | 0.1 | 0.5 | V | |
| High level Output Pulse Width *1 | T _{WH} | Burst wave=600μs | 400 | 600 | 700 | μs | |
| Low level Output Pulse Width *1 | T _{WL} | Period = 1.2ms | 500 | 600 | 800 | μs | |
| Output Form | Active Low Output | | | | | | |

*1. It specifies the maximum distance between emitter and detector that the output wave form satisfies the standard under the conditions below against the standard transmitter.

- 1) Measuring place : Indoor without extreme reflection of light
- 2) Ambient light source : Detecting surface illumination shall be irradiate 200 ± 50lx under ordinary white fluorescence lamp without high frequency lightning
- 3) Standard transmitter : Burst wave of standard transmitter shall be arranged to 50mVP-P under the measuring circuit

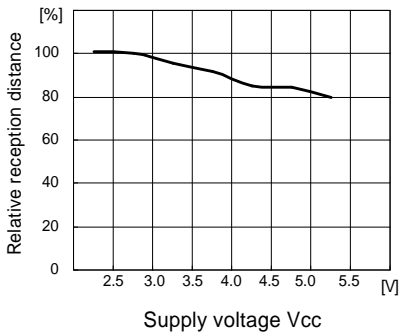
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Measuring Method [Ta=25]

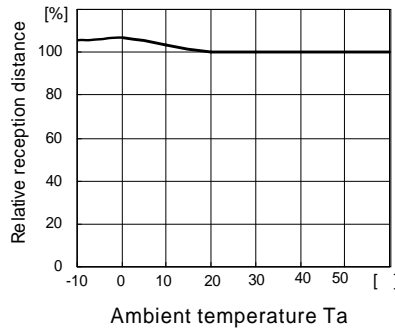


Typical Characteristics Curve [Ta=25]

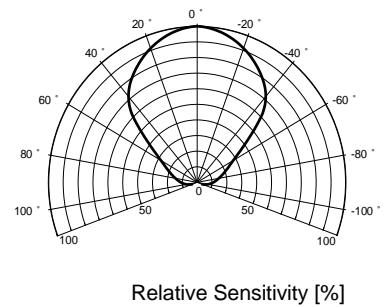
Relative reception distance Vs. Supply voltage



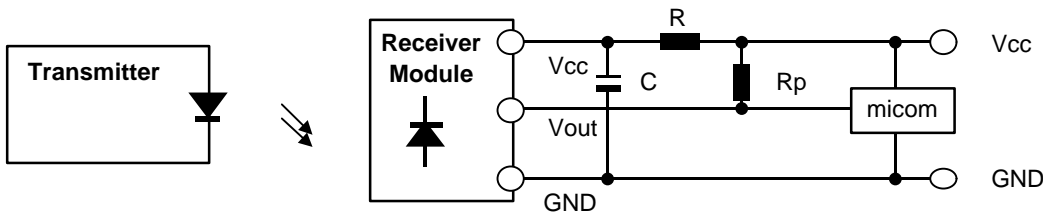
Relative reception distance Vs. Ambient temperature



Radiant pattern



Standard Application Circuit with R-C Decoupling Filter



*1 Recommended Circuit Description

- 1) Transmitter(IRED) drive current
: IFP = 300mA_{p-p} ~ 600mA_{p-p}
- 2) R-C Decoupling Filter with Lower Cut-off Frequency
: $R=100\Omega$, $C=47\mu F$ $\Rightarrow f_c = 1/2 \pi RC = 33.9Hz$
- 3) External pull-up resistor(optional)
: 10k Ω over