

KSM-90 ☐ LM

The KSM-90□LM consist of a PIN Photodiode of high speed and a preamplifier IC in the package as an receiver for Infrared remote control systems

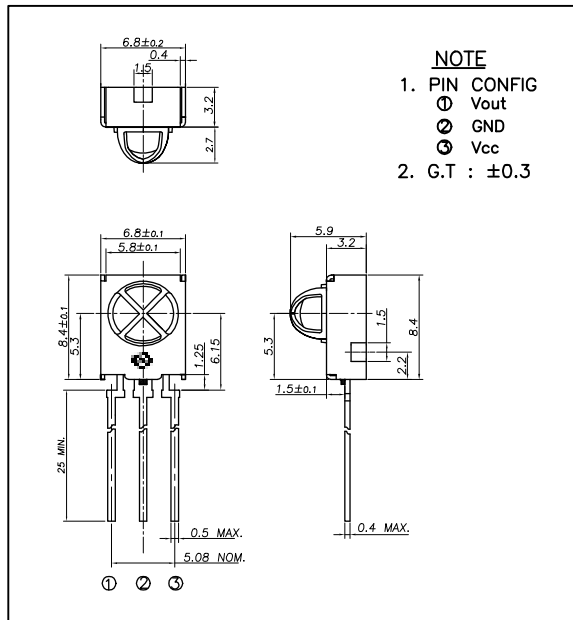
Features

- Wide angle design
- Supply-voltage range : 4.5V to 5.5V
- Shielded against electrical field disturbance
- Enhanced immunity against ambient light disturbances
- Available for carrier frequencies between 32.7KHz to 56.9KHz
- TTL and CMOS compatible

Applications

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

DIMENSIONS



Maximum Ratings

Parameter	Symbol	Ratings	Unit
Supply Voltage	Vcc	6.0	V
Operating Temperature	Topr	-10 ~ +60	°C
Storage Temperature	Tstg	-20 ~ +75	°C
Soldering Temperature	Tsol	260 (Max 5 sec)	°C

B.P.F Center Frequency

Model No.	B.P.F Center Frequency(kHz)
KSM-901LM	40.0
KSM-902LM	36.7
KSM-903LM	37.9
KSM-904LM	32.7
KSM-905LM	56.9

Electro-Optical Characteristics

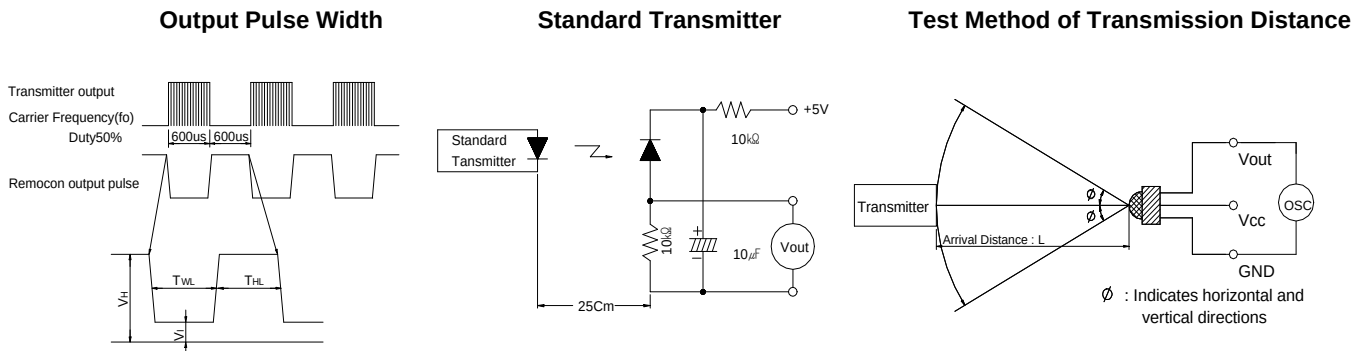
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Recommended Supply Voltage	V _{CC}		4.5	5	5.5	V
Current Consumption	I _{CC}	No signal input	-	1.2	2.5	mA
Peak Wavelength *1	λ_p		-	940	-	nm
B.P.F Center Frequency	f _o		-	37.9	-	kHz
Transmission Distance *1	L	250±50lx	0 °	15	-	m
			±30 °	12	-	
High level Output voltage *1	V _{OH}	30cm over the ray axis	4.5	5.0	-	V
Low level Output voltage *1	V _{OL}		-	0.1	0.5	V
High level Output Pulse Width *1	T _{WH}	Burst wave=600μs	500	600	700	μs
Low level Output Pulse Width *1	T _{WL}	Period = 1.2ms	500	600	700	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.

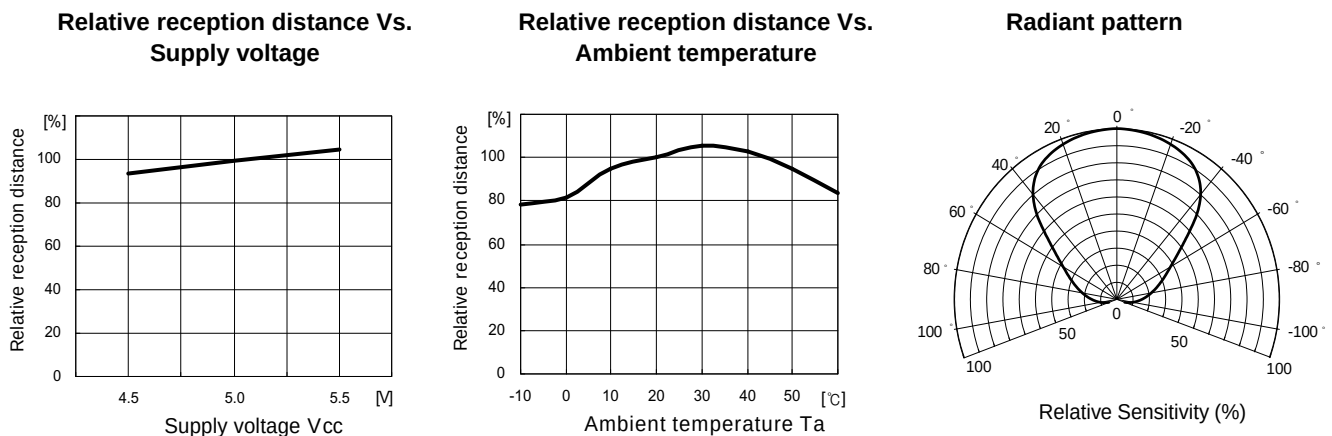
- 1) Measuring place : Indoor without extreme reflection of light
- 2) Ambient light source : Detecting surface illumination shall be irradiate $200 \pm 50lx$ under ordinary white fluorescence lamp without high frequency lightning
- 3) Standard transmitter : Burst wave of standard transmitter shall be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

KSM-90 LM

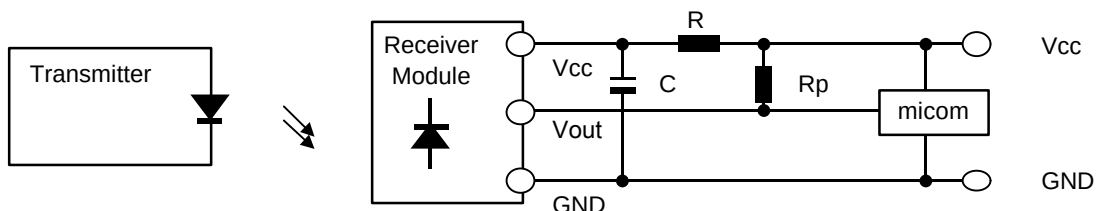
Measuring Method [Ta=25°C]



Typical Characteristics Curve [Ta=25°C]



Standard Application Circuit with R-C Decoupling Filter



*1 Recommended Circuit Description

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