

Infrared receiver modules



KSM-60□ LM2E

The KSM-60□ LM2E consist of a PIN Photodiode of high speed and a preamplifier IC in the package as an receiver for Infrared remote control systems

Features

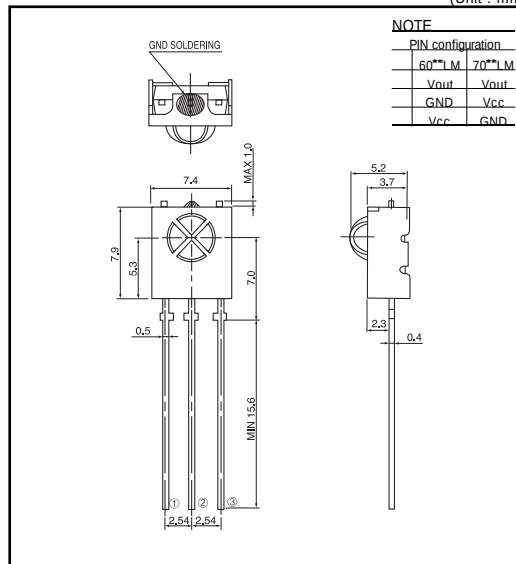
- One mold small size package
- Wide supply-voltage range : 2.7V to 5.5V
- Shielded against electrical field disturbance
- High immunity against ambient light disturbances (Logic Controller Adaptation)
- Available for carrier frequencies between 32.7KHz to 56.9KHz
- TTL and CMOS compatible

Applications

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

DIMENSIONS

(Unit : mm)



Maximum Ratings

[Ta=25℃]

Parameter	Symbol	Ratings	Unit
Supply Voltage	V _{cc}	6.0	V
Operating Temperature	T _{opr}	-10 ~ +60	℃
Storage Temperature	T _{stg}	-20 ~ +75	℃
Soldering Temperature	T _{sol}	260 (Max 5 sec)	℃

B.P.F Center Frequency

Model No.	B.P.F Center Frequency(KHz)
KSM-601LM2E	40.0
KSM-602LM2E	36.7
KSM-603LM2E	37.9
KSM-604LM2E	32.7
KSM-605LM2E	56.9

Electro-Optical Characteristics

[Ta=25℃, V_{cc}=5.0V(V_{cc}=3.0V)]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Recommended Supply Voltage	V _{cc}		2.7	-	5.5	V
Current Consumption	I _{cc}	No signal input	0.5	1.2(1.0)	1.7	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 ° ±30 °	12 9	- -	m
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=600us	500	600	700	us
Low level Output Pulse Width *1	T _{WL}	Period = 1.2ms	500	600	700	us
Output Form	Active Low Output					

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

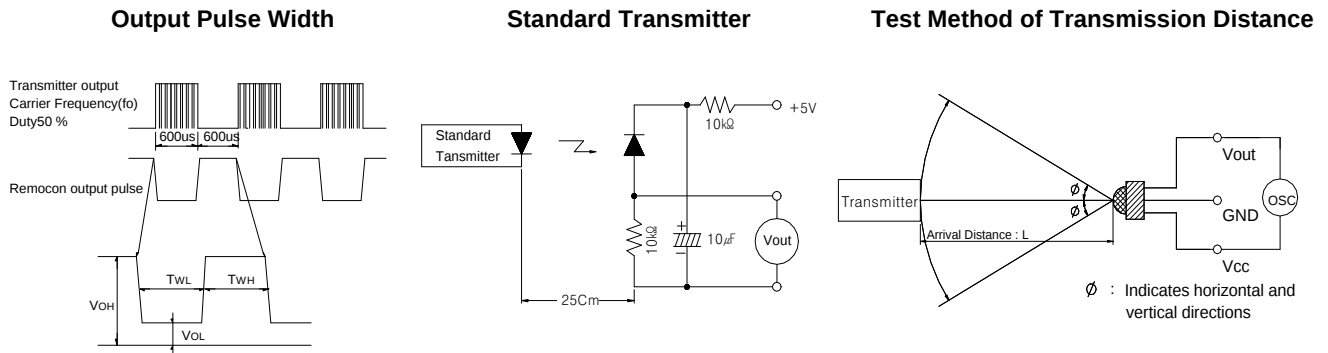
1) Measuring place : Indoor without extreme reflection of light

2) Ambient light source: Detecting surface illumination shall be irradiate 200±50lx under ordinary white fluorescence lamp without high frequency lightning

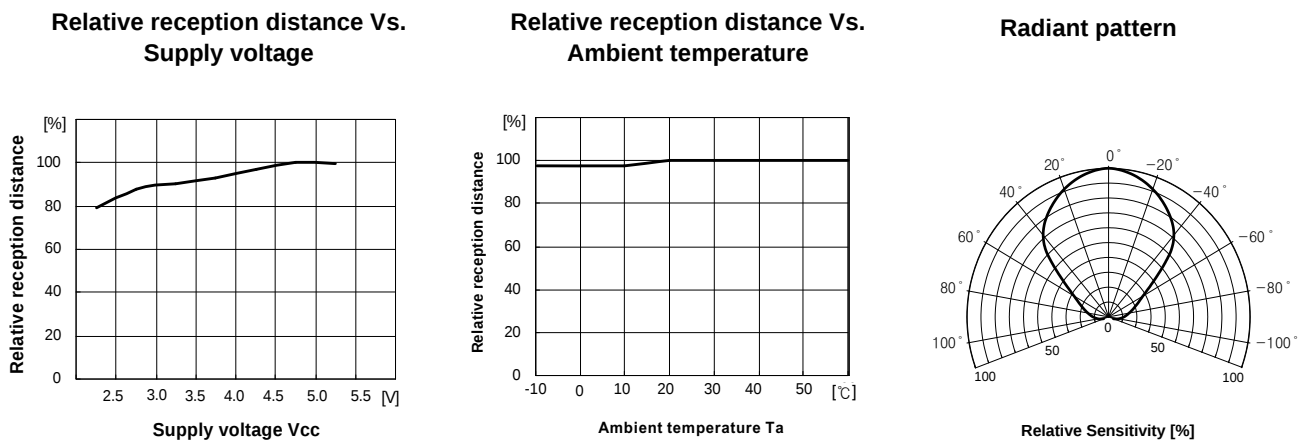
3) Standard transmitter: Burst wave of standard transmitter shall be arranged to 50mVP-P under the measuring circuit

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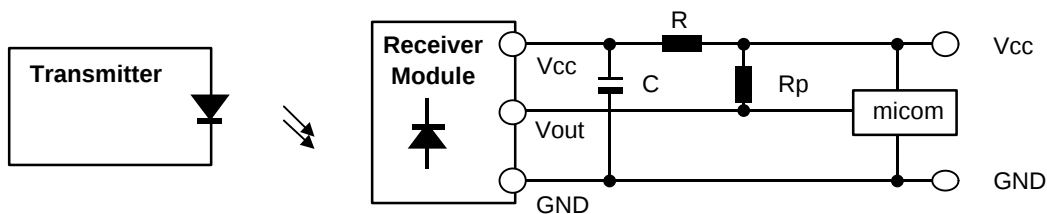
■ Measuring Method [Ta=25°C]



■ 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