

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

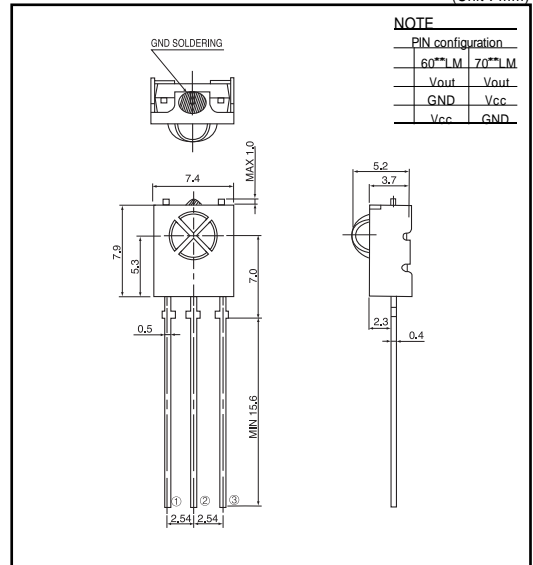
- One mold small size package
- Wide supply-voltage range : 2.7V to 5.5V
- Shielded against electrical field disturbance
- High immunity against ambient light disturbances (Logic Controller Adaptation)
- Available for carrier frequencies between 32.7KHz to 56.9KHz
- TTL and CMOS compatible

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°C]

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

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°C, 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		-	940	-	nm	
B.P.F Center Frequency	f _o		-	37.9	-	KHz	
Transmission Distance *1	L	250±50lx	0°	12	-	-	m
			±30°	9	-	-	
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 maximum distance between emitter and detector that the output wave form satisfies the standard under the conditions below against the standard transmitter.

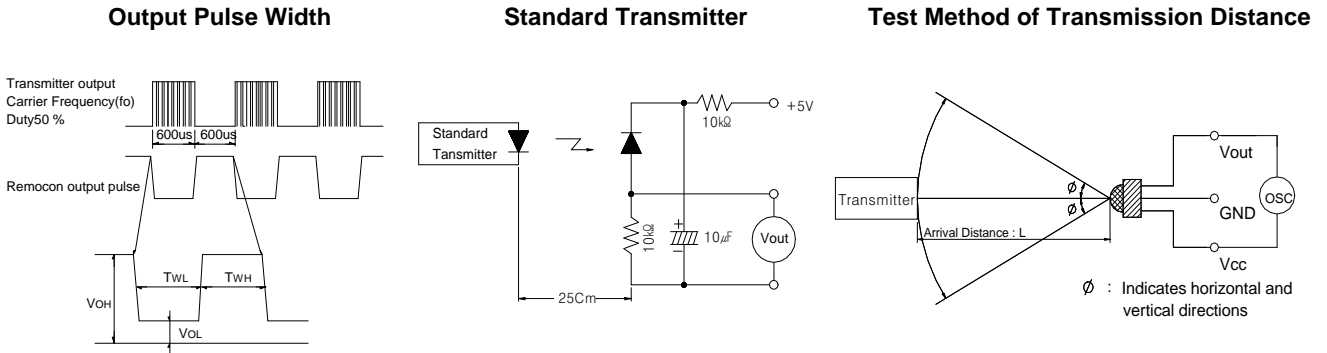
1) Measuring place : Indoor without extreme reflection of light

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

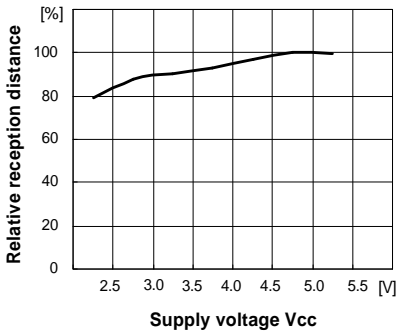
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■ Measuring Method [Ta=25°C]

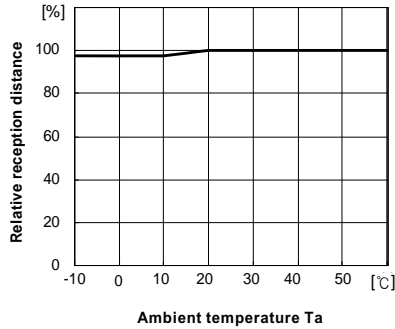


■ Typical Characteristics Curve [Ta=25°C]

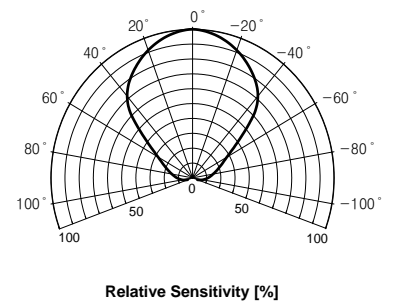
Relative reception distance Vs. Supply voltage



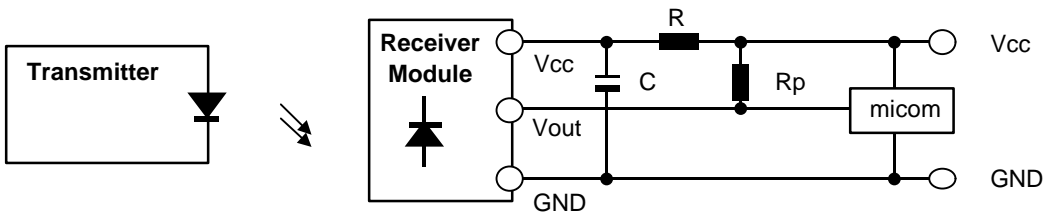
Relative reception distance Vs. Ambient temperature



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=100Ω , C=47μF ⇒ fc = 1/2 π RC = 33.9Hz
- 3) External pull-up resistor(optional)
: 10kΩ over