

## Optic receiver modules

# KSM- 60 □ LM · KSM- 70 □ LM

The KSM- 60□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

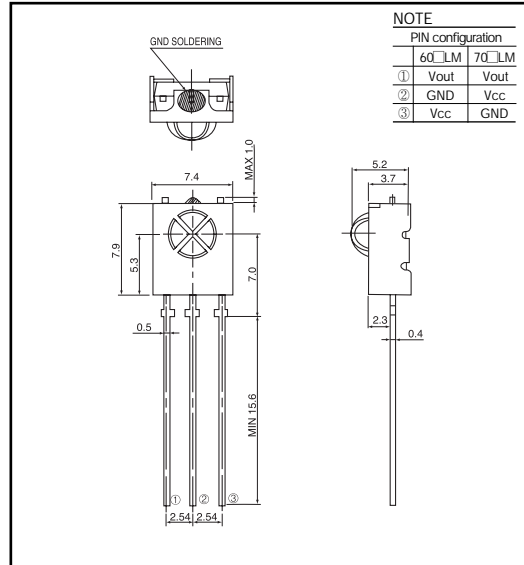
- One mold small package
- 5 Volt supply voltage, low power consumption
- Shielded against electrical field disturbance
- High immunity against ambient light
- Easy interface with the main board
- TTL and CMOS compatibility

### APPLICATIONS

- TV, VTR, Acoustic Devices, Air Conditioners, Car Stereo Units, Computers, Interior controlling appliances, and all appliances that require remote controlling

### DIMENSIONS

(Unit : mm)



### MAXIMUM RATINGS

(Ta=25°C Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	5.5	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-○○1 LM	40.0
KSM-○○2 LM	36.7
KSM-○○3 LM	37.9
KSM-○○4 LM	32.7
KSM-○○5 LM	56.9

### ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C), V<sub>CC</sub>=5.0V

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit.	
Supply Voltage	V <sub>CC</sub>		4.5	5.0	5.5	V	
Current Consumption	I <sub>CC</sub>	Input Signal=0	-	1.2	2.5	mA	
Peak Wavelength *1	λ <sub>p</sub>		-	940	-	nm	
B.P.F Center Frequency	f <sub>0</sub>		-	37.9	-	kHz	
Transmission Distance *1	L	200±50lx	0°	10	-	-	m
			±30°	7	-	-	m
H Level Output Voltage *1	V <sub>OH</sub>	30cm over the ray axis	4.5	5.0	-	V	
L Level Output Voltage *1	V <sub>OL</sub>		-	0.1	0.5	V	
H Level Output Pulse Width *1	T <sub>WH</sub>	Burst Wave=600 μs	500	600	700	μs	
L Level Output Pulse Width *1	T <sub>WL</sub>	Period=1.2ns	500	600	700	μs	
Output Form			Active Low Output				

Note : \*1. It specifies the maximum distance between emitter and detector that the output waveform 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

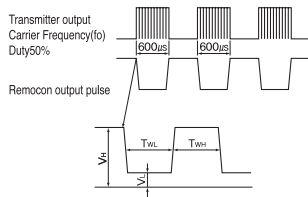
3) Standard transmitter : Burst wave of standard transmitter shall be arranged to 50mVp-p under the measuring circuit

**Optic receiver modules**

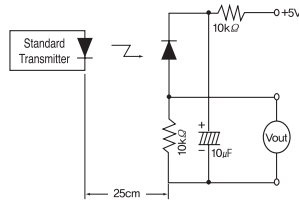
**KSM- 60 □ LM · KSM- 70 □ LM**

**MEASURING METHOD**

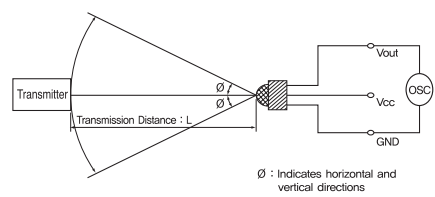
**Output Pulse Width**



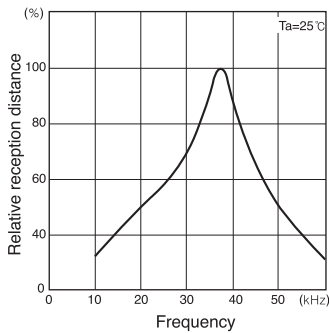
**Standard Transmitter**



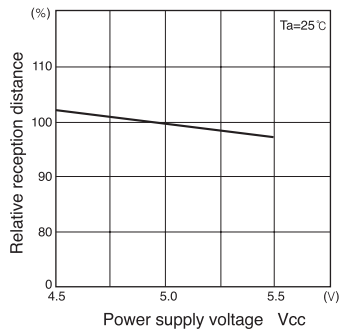
**Test Condition of Transmission Distance**



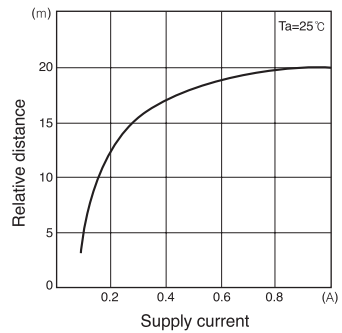
**Relative reception distance Vs. Frequency (37.9kHz)**



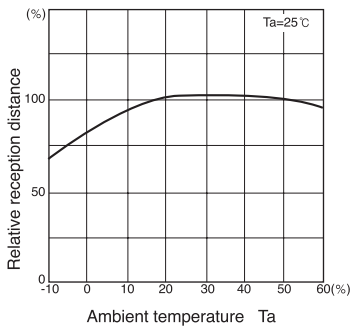
**Relative reception distance Vs. Power supply voltage**



**Relative distance Vs. Supply current**



**Relative reception distance Vs. Ambient temperature**



**Radiant pattern**

