

KSM - 71 ** TH5

The KSM - 71**TH5 consist of a PIN Photodiode of high speed and a preamplifier IC in the package as an receiver for Infrared remote control systems

FEATURES

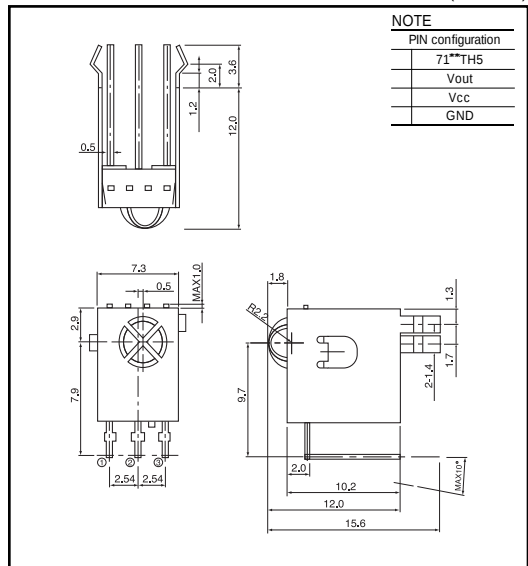
- One mold small package
- 5 Volt supply voltage, low power consumption
- Shielded against electrical field disturbance
- High immunity against ambient light
- Easy interface with the main board
- TTL and CMOS compatibility

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 Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{cc}	5.5	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 - 1 TH5	40.0
KSM - 2 TH5	36.7
KSM - 3 TH5	37.9
KSM - 4 TH5	32.7
KSM - 5 TH5	56.9

ELECTRO-OPTICAL CHARACTERISTICS

($T_a=25^\circ\text{C}$), $V_{CC}=5.0\text{V}$

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Supply Voltage	V _{CC}		4.5	5.0	5.5	V
Current Consumption	I _{CC}	Input Signal=0	-	1.2	2.5	mA
Peak Wavelength *1	λ _p		-	940	-	nm
B.P.F Center Frequency	f ₀		-	37.9	-	kHz
Transmission Distance *1	L	200 ± 50lx	0 _o	10	-	m
			± 30 _o	7	-	m
H Level Output Voltage *1	V _{OH}	30cm over the ray axis	4.5	5.0	-	V
L Level Output Voltage *1	V _{OL}		-	0.1	0.5	V
H Level Output Pulse Width *1	T _{WH}	Burst Wave=600 μs Period=1.2ms	500	600	700	μs
L Level Output Pulse Width *1	T _{WL}		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 ± 50 lx 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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Ø : Indicates horizontal and vertical directions

Figure 1 is a line graph showing the relationship between relative reception distance and frequency. The y-axis is labeled 'Relative reception distance (%)' and ranges from 0 to 100 in increments of 20. The x-axis is labeled 'Frequency (kHz)' and ranges from 0 to 60 in increments of 10. A single curve is plotted, which is bell-shaped and peaks at approximately 37 kHz with a relative reception distance of 100%. The curve starts at about 30% at 10 kHz and ends at about 30% at 55 kHz. A label 'T_a=25 °C' is present in the upper right corner of the graph area.

Frequency (kHz)	Relative reception distance (%)
10	30
20	50
30	70
37	100
45	70
55	30

Power supply voltage V_{cc} (V)	Relative reception distance (%)
4.5	102
5.0	100
5.5	98

Graph showing Relative distance (m) versus Supply current (A) for $T_a = 25^\circ\text{C}$. The curve indicates that relative distance increases with supply current, starting from approximately 3.5 m at 0.1 A and reaching a plateau of about 20 m at 0.8 A.

Figure 10 is a line graph showing the relationship between ambient temperature T_a and relative reception distance. The x-axis represents ambient temperature T_a in degrees Celsius, ranging from -10 to 60. The y-axis represents relative reception distance in percent, ranging from 0 to 100. The curve starts at approximately 65% at -10°C, rises to a peak of 100% at 25°C, and then slightly decreases to about 95% at 60°C. A label $T_a = 25^\circ\text{C}$ is placed near the peak of the curve.

Ambient temperature T_a (°C)	Relative reception distance (%)
-10	65
0	80
10	90
20	98
25	100
30	100
40	99
50	98
60	95