

SPECIFICATION

FOR APPROVAL

ISSUED DATE : **2005. 01. 24**

DOCUMENT NO. : PDCM-60□LM2N-01

CUSTOMER : _____

DESCRIPTION : RECEIVER MODULE

MODEL NO. : KSM-603LM2N

[KODENSHI KOREA CORP.]

ISSUE DEPT.			BRD		SBU		QRA	
ISSUE	REVIEW	APPR'L	REVIEW	APPR'L	REVIEW	APPR'L	REVIEW	APPR'L
								

[CUSTOMER APPROVAL]

[REVISION]

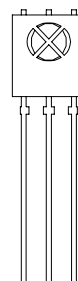
NO	DATE	REVISION ITEMS	ISSUED BY	APPR'D BY

1. Scope

The KSM-60□LM2N consist of a PIN Photodiode of high speed and a preamplifier IC in the package as an receiver for Infrared remote control systems

2. Features

- 4.7 ~ 5.5 Volt supply voltage, low power
- Shielded against electrical field disturbance
- High immunity against ambient light
- Easy interface with the main board
- TTL and CMOS compatibility
- RoHS Compliance



3. Applications

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

4. Package Outline

See the attached Drawing No. (RM-60□LM□□-ASY-01)

5. Absolute Maximum Ratings (at 25 °C Unless otherwise notes)

Parameter	Symbol	Ratings	Unit
Supply Voltage	Vcc	6	V
Operating Temperature	Topr	-10 ~ 60	
Storage Temperature	Tstg	-20 ~ 75	
Soldering Temperature	Tsol	260(Max 5 sec)	

6. Reliability Test

Parameter	Condition
High Temperature *1	Ta= + 60 °C , Vcc=5V t=240H
High Temperature/High Humidity *1	Ta= + 60 °C , 90%RH, Vcc=5V t=240H
Low Temperature *1	Ta= - 10 °C , Vcc=5V t=240H
Heat Cycle *1	-20 (0.5H) ~ + 75 (0.5H) 20cycle
Dropping *2	Test devices shall be dropped 3 time naturally onto hard wooden board from a 75cm height position

Note : *1. electro-optical characteristics shall be satisfied after leaving 2hours in the normal temperature

*2. electro-optical characteristics shall be satisfied and no deforms and destructions of appearance.(excepting deforms of terminals)

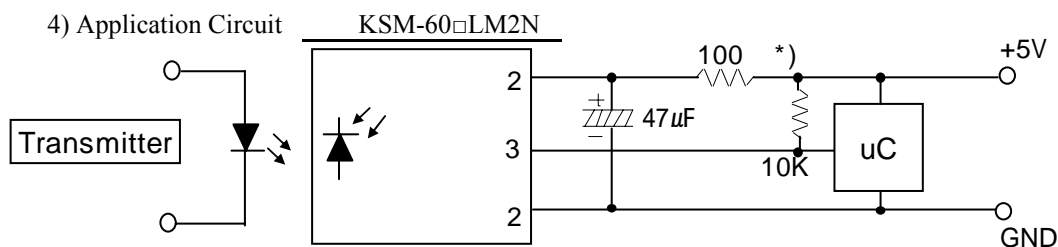
7. Electrical Characteristics

[Ta= 25 Vcc= 5.0V]

Parameter	Simbol	Condition		Min.	Typ.	Max.	Unit
Supply Voltage	Vcc			4.5	5.0	5.5	V
Current Consumption	Icc	Input Signal = 0		-	1.5	2.5	mA
Peak Wavelength *3	λp			-	940	-	nm
B.P.F Center Frequency *4	fo			-	37.9	-	kHz
Arrival Distance *3	L	250Lux	0 °	15	-	-	m
			±30 °	12	-	-	m
H Level Output Voltage *3	V _{OH}	30cm over the ray axis		4.5	5.0	-	V
L Level Output Voltage *3	V _{OL}			-	0.1	0.5	V
H Level Output Pulse Width *3	T _{WH}	Bust Wave = 600μs Period = 1.2ms		500	-	700	μs
L Level Output Pulse Width *3	T _{WL}			500	-	700	μs
Output Form	Active Low Output						

Note : *3. It specifies the maximum distance between emitter and detector that the output waveform satisfies the standard(8-2,3) 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±50Lux under ordinary white fluorescence lamp without high frequency lightning
- 3) Standard transmitter : Burst wave indicated in drawing(8-1) of standard transmitter shall be arranged to 50 mVp-p under the measuring circuit specified in drawing(8-2,3)



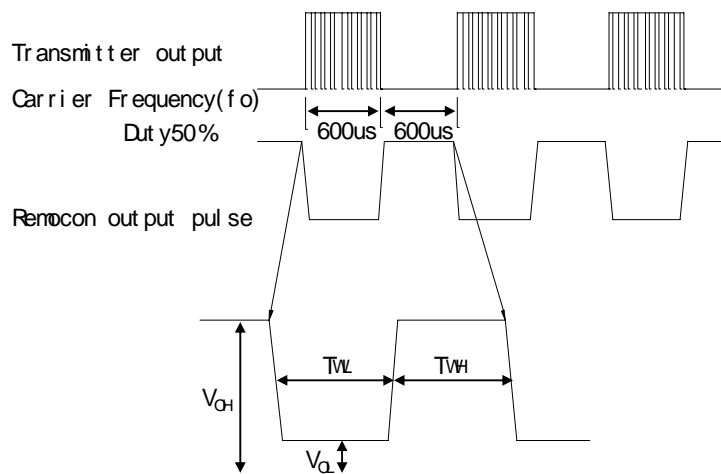
*)Recommended to suppress power supply disturbances

*4. B.P.F Center Frequency(f_o) of each model is shown below

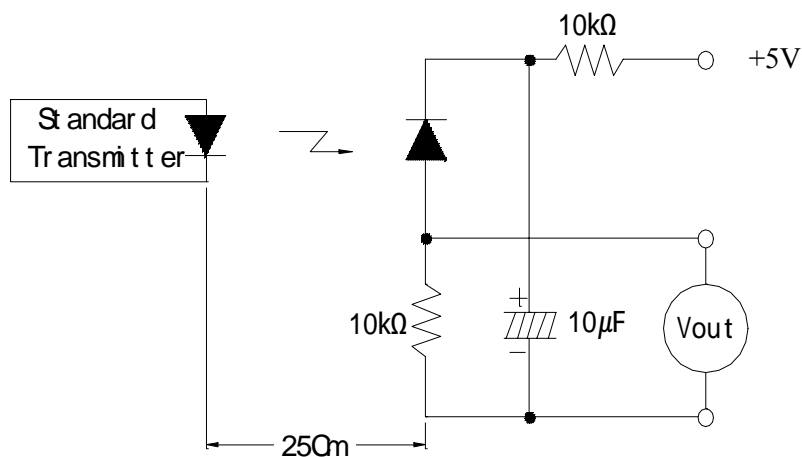
Molde NO.	B.P.F Center Frequency(kHz)
KSM-601	40.0
KSM-602	36.7
KSM-603	37.9
KSM-604	32.7
KSM-605	56.9

8. Measure Method

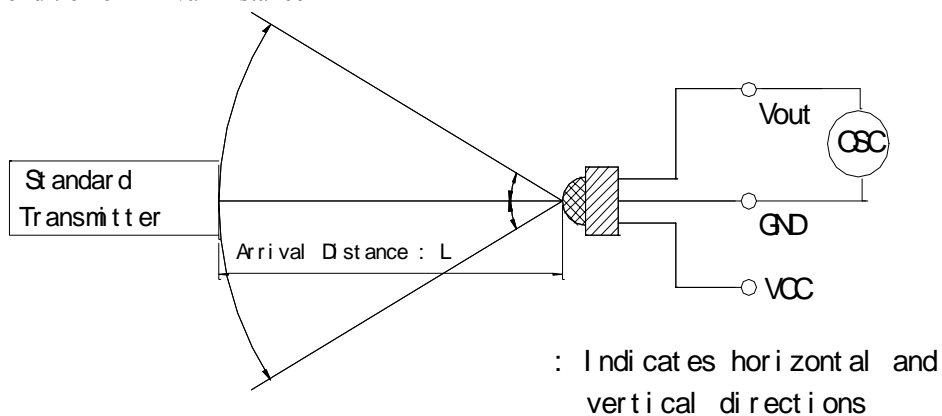
8-1. Output Pulse Width



8-2. Standard Transmitter



8-3. Test Condition of Arrival Distance



9. Standard Inspection

Among electrical characteristics, total quantity shall be inspected as below

- 9-1. Front distance between emitter and detector
- 9-2. Current consumption
- 9-3. H level output voltage
- 9-4. L level output voltage

10. Caution(When use and storage of this device)

- 10-1. Store and use where there is no force causing transformation or change in quality
- 10-2. Store and use when there is no extreme humidity
- 10-3. Solder the lead-pin within the condition of ratings. after soldering do not add extrorse force
- 10-4. To prevent static electricity damage to the Pre-AMP make sure that the human body, the soldering iron is connected to ground before using
- 10-5. The performance of remote control system depends on environments condition and ability of peripheral parts, Customer should evaluate the performance as total system in those conditions after system up with components such as commander, Micom and this receiver module
- 10-6. Connect the shield case on the base pattern GND
.This device has to control of static electricity
KODENSHI Korea Corp. guarantees KSM-60□LM2N up to 500V

11.Period of Guarantee and Extent of Guarantee

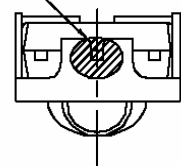
- 11-1.Period of Guarantee
1 year after designated place.
- 11-2.Extent of Guarantee
KODENSHI Korea Corp. Shall supply the replacements against defects that will caused from KODENSHI fault.

12. Others

In case where any trouble or questions arise, both parties agree to make full discussion covering the said problem

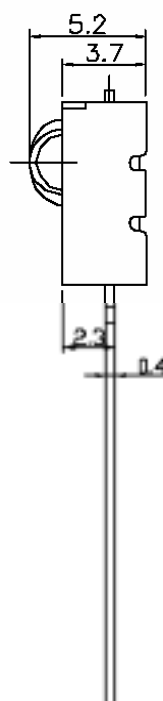
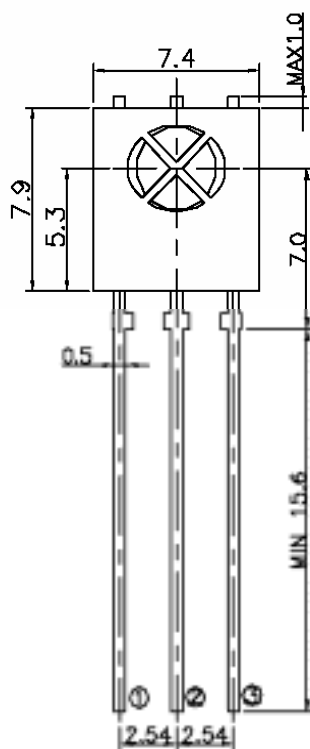
MARK	REVISION	DATE	NAME	SIGN	GENERAL TOLERANCE(±)							
					<div>Grade</div> <div>Dimension</div>	0	1	2	3	4	5	
					~4 and below	0.005	0.05	0.08	0.1	0.2	0.5	
					4~16 and below	0.05	0.08	0.1	0.2	0.3	0.8	
					16~64 and below	0.08	0.1	0.2	0.3	0.5	1.2	
					63~250 and below	0.1	0.2	0.3	0.5	0.8	1.8	

HATCH'G(GND WELD)




NOTE

- PIN CONFIG
 - ① Vout
 - ② GND
 - ③ Vcc
- G.T : ±0.3
- LEAD Pb Free



★RoHS Compliance

NO	DESCRIPTION				MAT'L	DIMENSION		REMARK
ISSUED DERT.					Q'TY	TITLE KSM-60□□□□ Series		
ISSUE	REVIEW	REVIEW	APPR'L	UNIT	MM			
L.S.H			L.K.Y	SCALE	4/1			
DRAWING NO RM-60□□□□-01		REF DWG NO						

KKC-QM-067-1

MARK	REVISION	DATE	NAME	SIGN	GENERAL TOLERANCE(±)							
					Grade	0	1	2	3	4	5	
					Dimension							
					≤4 and below	0.005	0.05	0.08	0.1	0.2	0.5	
					4~16 and below	0.05	0.08	0.1	0.2	0.3	0.8	
					16~64 and below	0.08	0.1	0.2	0.3	0.5	1.2	
					63~250 and below	0.1	0.2	0.3	0.5	0.8	1.8	

*** Packing Specification**

Antistatic Vinyl (200Pcs)
Packing Slip
VINYL BAG
Antistat Bulk Packing X 5(200Pcs)

Label 1
BOX1
* Lot NO. = K 4 3 4 - 001-01
Product Week
Product Year
KODENSHI
BOX Number

Label 2
BOX2
BOX1 X 10(Max)
BOX2 X 4
BOX4
Tape
Label 4
BOX4

Label 1
KODENSHI
TYPE KSM-60□LM□□
QTY 1000 EA
LOT No. K434-001-01
DATE 2004-05-17
USER CODE
S

Label 2
KODENSHI
TYPE KSM-60□LM□□
QTY 10000 EA
LOT No. K434-M0001
DATE 2004-05-17
USER CODE
M

	Size (W X L X H cm)	Contain
Box1	11 X 21 X 7	1/1000
Box2	25 X 36 X 24	1/10000
Box4	38 X 53 X 53	1/40000

PACKING STATUS				MAT'L		DIMENSION		REMARK	
NO	DESCRIPTION			Q'TY	EA	TITLE		PACKING	
ISSUED DERT.				UNIT	MM	KSM-60□LM□□			
DRAWN	DESIGN	CHECK'D	APPR'D	SCALE	N/S				
L.S.H			L.K.Y						
DRAWING NO		REF DWG NO		KODENSHI					
RM-60□LM□□-PK-01									

KKC-QM-067-4