Customer:

SPECIFICATIONS		SHEET No.	1 of 7
		DATE	2009. 10. 22.
PART NAME	IR RECEIVER MODULE	TYPE No.	R24FV1A
CODE NO.		FILE No.	OQSS-R-292

1. Application

This Specification is applied to inspection and approval of the IR Receiver Module for TV, DVD, STB etc.

2. Description

The Series are miniaturized receiver for infrared remote control system.
The PIN Photodiode and preamplifier are assembled on lead frame. The epoxy pacakge is designed as IR Filter.
The module has excellent performance even in disturbed ambient light application and provides protection against uncontrolled output pulses.

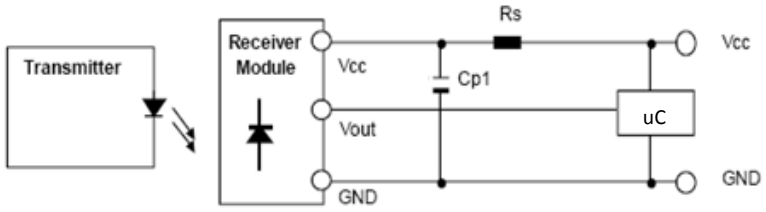
3. Features

1)High ripple rejection
2)Wide operating supply voltage 2.7V ~ 6.0V
3)Supply current : 3.3V(0.9mA), 5.0V(1.0mA)
4)Band pass filter center frequency : 37.9㎑
5)Epoxy IR filter characteristic : 940㎚
6)Maximum interference safety against optical and electrical disturbance
7)Internal filter for a high frequency lighting fluorescent lamp
8)Internal pull-up : 42㏀

4. Absolute Maximum Ratings

1)Supply voltage : 0 ~ 6.0V
2)Supply current : 0 ~ 3.0㎃
3)Output current : 0 ~ 2.5㎃
4)Operating temperature : -20℃ ~ +80℃
5)Storage temperature : -30℃ ~ +85℃
6)Soldering temperature (Pb Free) : 260℃(Max 5 sec)

5. Minimal Operating Circuit



1) Rs : 47ohm ~ 100ohm
2) Cp1 : 4.7uF~100uF
Rs+Cp1 recommended to suppress power supply disturbance.

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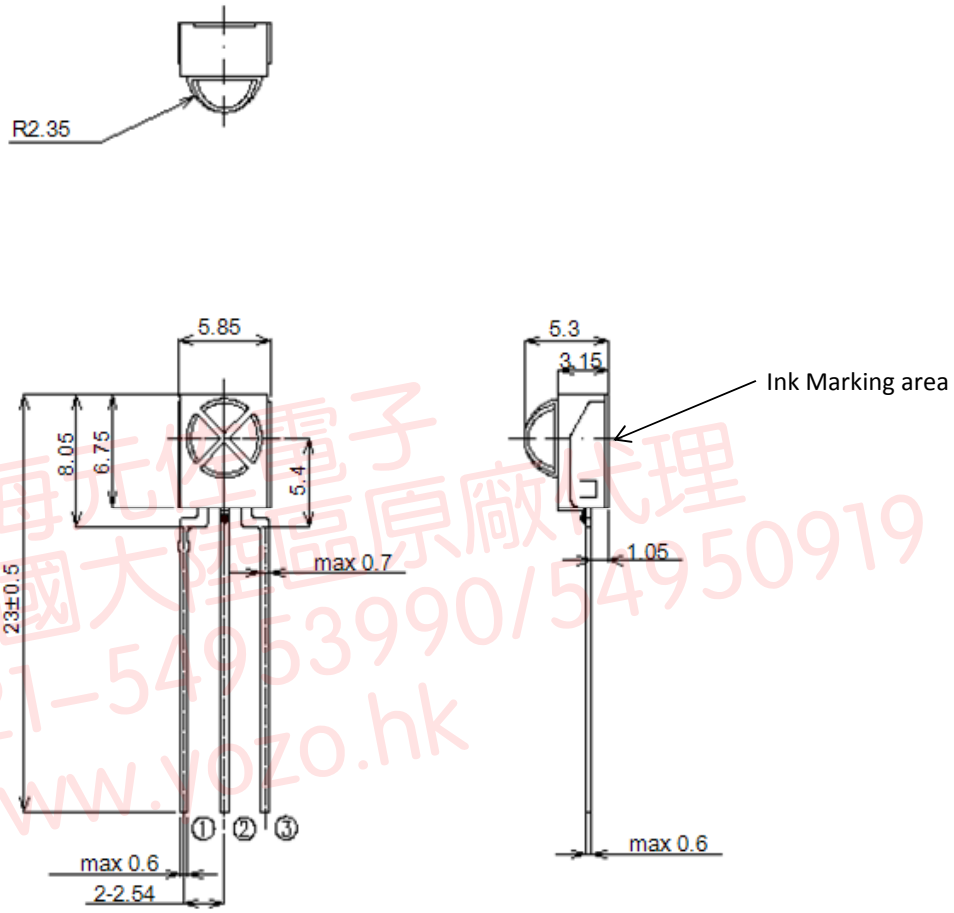
Customer:

SPECIFICATIONS		SHEET No.	2 of 7
		DATE	2009. 10. 22.
PART NAME	IR RECEIVER MODULE	TYPE No.	R24FV1A
CODE NO.		FILE No.	OQSS-R-292

6. Apperaence & Dimensions

1)Package Dimension(Unit: ㎜)



2) Ink-Marking on IR receiver module

3) Marking example.

No	Specification	Remark
①	Year	0 ~ 9
②	Month	A~L(1~12)
③	Date	1 ~ 31
④	Lot	1 ~ 99

Note

1.Pin Config

①Vout

②GND

③Vcc

2.Unspecified tolerance : ±0.3㎜

3.Lead edge finish : Solder dip

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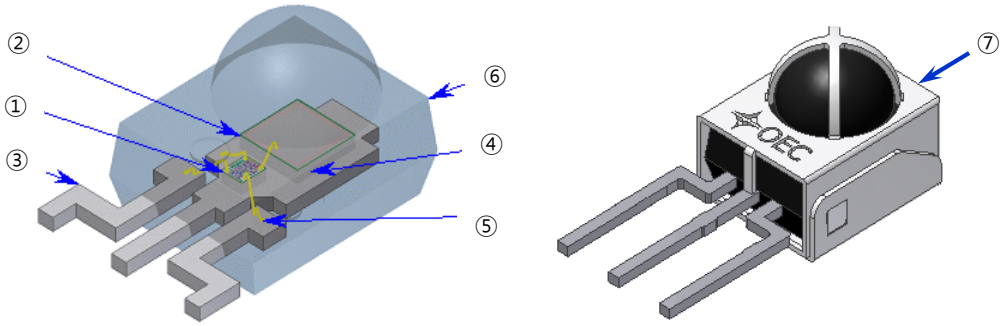
Customer:

SPECIFICATIONS		SHEET No.	3 of 7
		DATE	2009. 10. 22.
PART NAME	IR RECEIVER MODULE	TYPE No.	R24FV1A
CODE NO.		FILE No.	OQSS-R-292

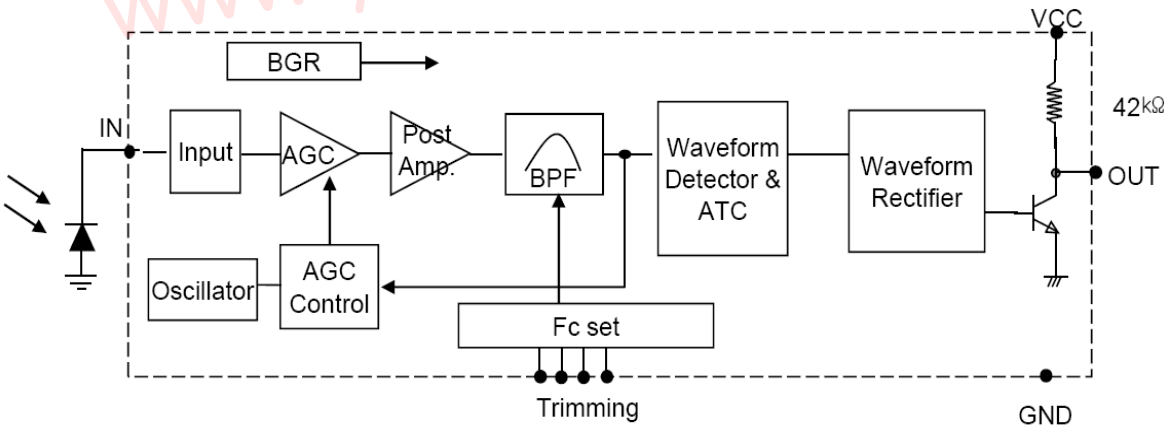
7. Schematic Diagram

1)Internal structure figure



No	Component	Manufacure of Material	Remark
①	Pre-Amp IC	Neo Device	
②	PIN Photo Diode	AUK	
③	Frame	I-CHUN	Fe + Sn Plating
④	Ag Epoxy	Protavic Korea	
⑤	Au Wire	Heraeus	
⑥	Epoxy Resin	Nepes AMC	
⑦	Shield Case	Hyundae Geungyo	Fe + Sn Plating

2)Function Block Diagram



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8. Electro-Optical Characteristics (At 25℃ unless otherwise notes)

1)Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply Voltage	Vcc	0 ~ 6.0	V
Output Current	Iout	0 ~ 2.5	㎃
Operating Temperature	Topr	-20 ~ +80	℃
Storage Temperature	Tstg	-30 ~ +85	℃
Soldering Temperature(*1)	Tsol	260, t<5sec	℃

(*1)Pb Free Solder

2)Recommended operating Conditions

Parameter	Symbol	Rating	Unit
Operating Voltage	Vcc	2.7 ~ 6.0	V
Input Frequency	fin	32 ~ 40	㎑

3)Elector_Optical Characteristics [Vcc=5.0V, Vcc=3.0V]

Parameter	Symbol	Condition		Min	Typ	Max	Unit
Supply Voltage	Vcc			2.7	-	6.0	V
Supply Current	Icc	No Input Signal	Vcc=5V	0.5	1.2	1.5	㎃
			Vcc=3V		1.0		
Peak Wavelength (※1)	λp			-	940	-	㎚
B.P.F Center Frequency (※2)	fo			-	37.9	-	㎑
High Level Output Voltage (※1)	V_{OH}	30㎝ over the ray axis		Vcc-0.2	Vcc	-	V
Low Level Output Voltage (※1)	V_{OL}			-	0.2	0.4	V
High Level Output Pulse Width (※1)	t_{WH}	Burst Wave = 600㎲		400	-	800	㎲
Low Level Output Pulse Width (※1)	t_{WL}	Period = 1.2㎳		400	-	800	㎲
Arrival Distance (※1)	D	±0˚		12	-	-	m
		±30˚		8	-	-	m
Output Form	Active Low Output						

※ 1. 600/600㎲ burst wave is transmitted by standard(Fig.2, Fig.3) transmitter. However, it mesured after the initial transmission pulse is 10(60㎳) pulse.

※ 2. The following band pass frequencies are available.(32.7㎑/36.7㎑/37.9㎑/40.0㎑)
Carrier frequencies adjustied by zener-diode fusing method.

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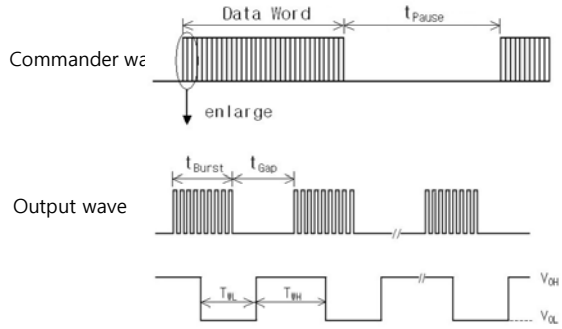
Customer:

SPECIFICATIONS		SHEET No.	5 of 7
		DATE	2009. 10. 22.
PART NAME	IR RECEIVER MODULE	TYPE No.	R24FV1A
CODE NO.		FILE No.	OQSS-R-292

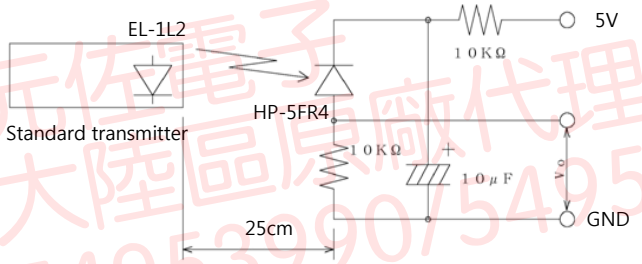
4)Measurement Conditions

① Fig.1 Burst we, Output wave



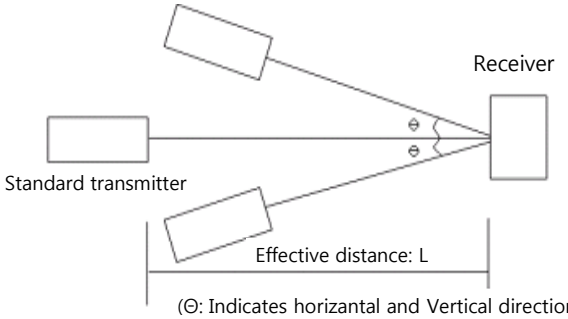
* Data word length = Max. 100msec
* tBurst = Min. 300usec, tGap = Min. 300usec
* tpause = Min. 25msec

② Fig.2 Application Circuit



When standard transmitter output the signal at Fig.1 standard photodiode output become 50mV$_{P-P}$ under the measurement condition Fig.2.
HP-5FR4 : standard photodiode has short current Isc=32uA at E=1000(lx)

③ Fig.3 Test Condition of Arrival Distance



☞ Ambient light source : Detecting surface's illumination shall be 200±50Lux under ordinary white fluorescence lamp without high frequency lighting.

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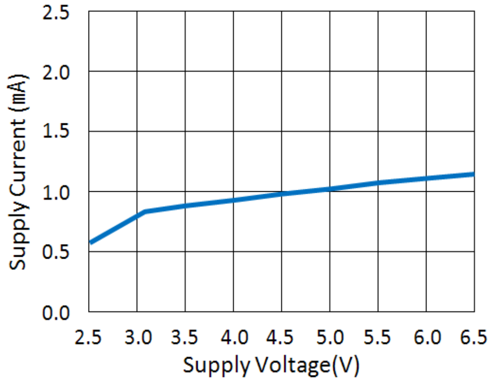
Customer:

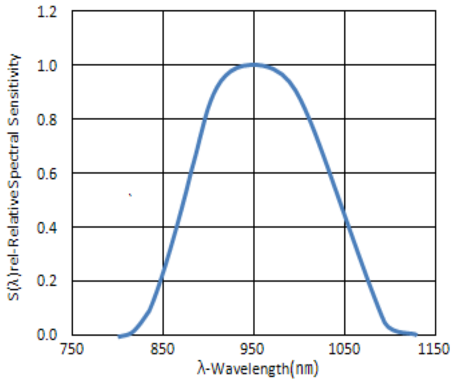
SPECIFICATIONS		SHEET No.	6 of 7
		DATE	2009. 10. 22.
PART NAME	IR RECEIVER MODULE	TYPE No.	R24FV1A
CODE NO.		FILE No.	OQSS-R-292

5) Graph of Electrical/Optical Characteristics

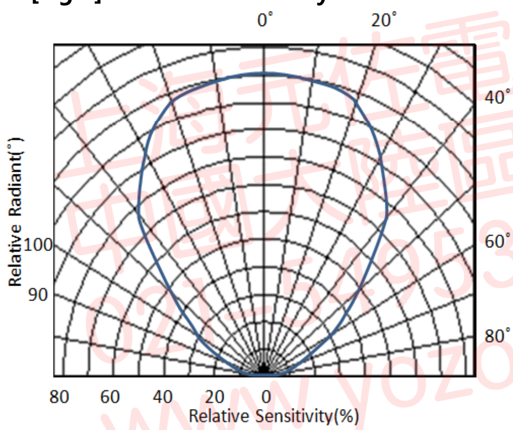
[Fig.1] Supply Current vs. Voltage



[Fig.2] Relative Spectral Sensitivity vs. Wavelength



[Fig.3] Relative Sensitivity vs. Direction



6) Standard Inspection

All output products shall be inspected based on following items.

① Detecting distance.
② Current consumption.
③ High level output voltage.
④ Low level output voltage.
⑤ Output Pulse Width

7) Others

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

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