深圳成光兴光电技术股份有限公司

SHENZHEN CGX OPTOELECTRONIC TECHNOLOGY , INC..

样 品 规 格 承 认 书

SAMPLE APPROVAL SHEET

客 户 名 称

Company Name ： _____

产 品 型 號

Part Number： CRM-3837F1-R-20-C51

送 樣 日 期

Sample Date： _____

APPROVED SIGNATURES（供应商确认）		
核准	品保	工程

客户确认：□样品承认 □不予承认需重新送样 □不予承认不需送样

客户建议：_____

_____

APPROVED SIGNATURES（客户确认）		
核准	工程	品保

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INFRARED RECEIVER MODULE CRM-3837F1-R-20-C51

Description

The CRM-3837F1** is miniaturized infrared receivers for remote control and other applications requiring improved ambient light rejection.
The separate PIN diode and preamplifier IC are assembled on a single leadframe.
The epoxy package contains a special IR filter.
This module has excellent performance even in disturbed ambient light applications and provides protection against uncontrolled output pulses.

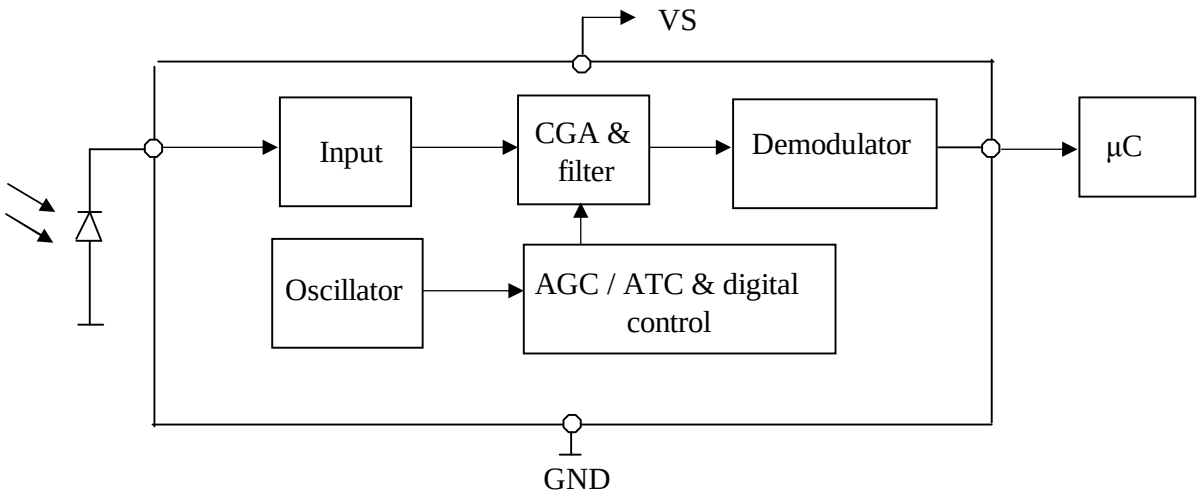
Features

- Photo detector and preamplifier in one package
- Internal filter for PCM frequency
- High immunity against ambient light
- Improved shielding against electric field disturbance
- 3.0-Volt supply voltage; low power consumption
- TTL and CMOS compatibility

Applications

It can be used for TVs、VTRs、audio equipment air conditioners、 car stereo radio、toys、 home computers and all other equipment requiring remote control.

BLOCK DIAGRAM



INFRARED RECEIVER MODULE CRM-3837F1-R-20-C51

Absolute Maximum Ratings

@ Ta=25°C

Item	Symbol	Ratings	Unit	Remark
Supply voltage	V_{CC}	0~6.0	V	
Operating temperature	T_{opr}	-20 ~ + 80	°C	
Storage temperature	T_{stg}	-25 ~ + 85	°C	
Soldering temperature	T_{sd}	260	°C	Maximum 5 seconds

Electro-optical characteristics (Vcc=5.0V)

@ Ta=25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Supply Voltage	Vs	2.7		5.5	V	
Current consumption	Icc		0.45	1.5	mA	Under no signal
Response wavelength	λ_p		940		nm	
B.P.F Center Frequency	fo		38		KHz	
Output form	- - - - - active low output - - - - -					
H level output voltage	V_0h	4.8	5.0		V	
L level output voltage	V_0l		0.2	0.4	V	
H level output pulse width	Twh	400		800	μs	
L level output pulse width	Twl	400		800	μs	
Distance between emitter & detector	L_1	12			m	Note 1
Half angle	φ_h		±45		deg	Horizonal direction

Test Method

A. Standard Transmitter

ON/OFF pulse width satisfied from 25 cm to detection limit

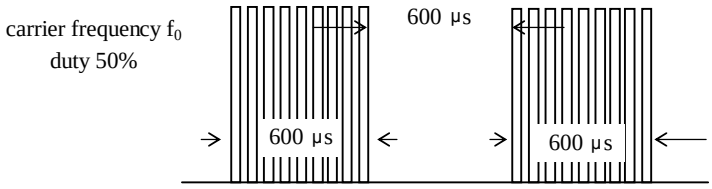


Fig 1. Burst Wave

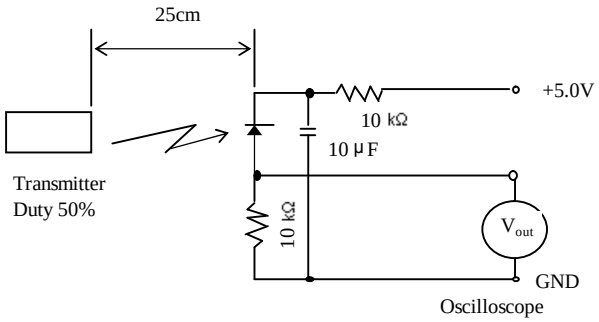
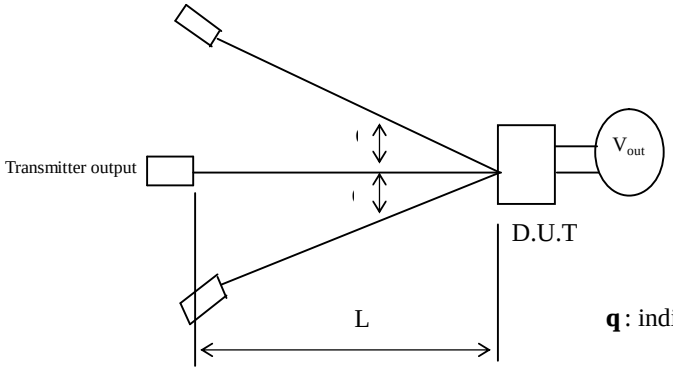


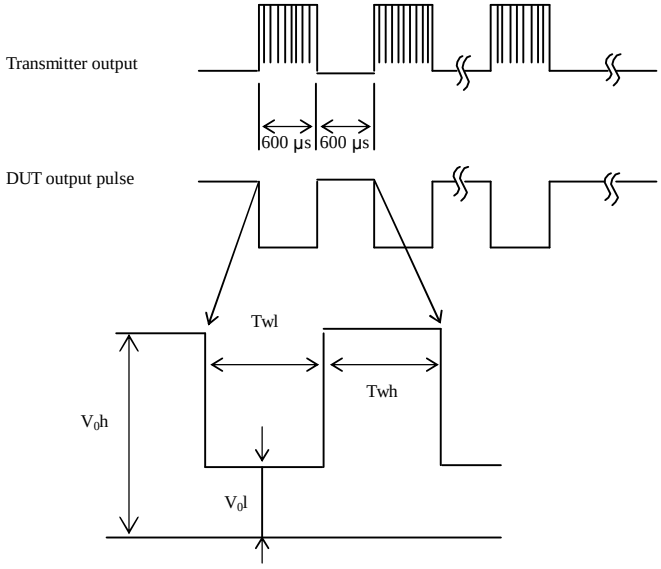
Fig 2. Standard Transmitter Measurement circuit

B. Detection Length Test

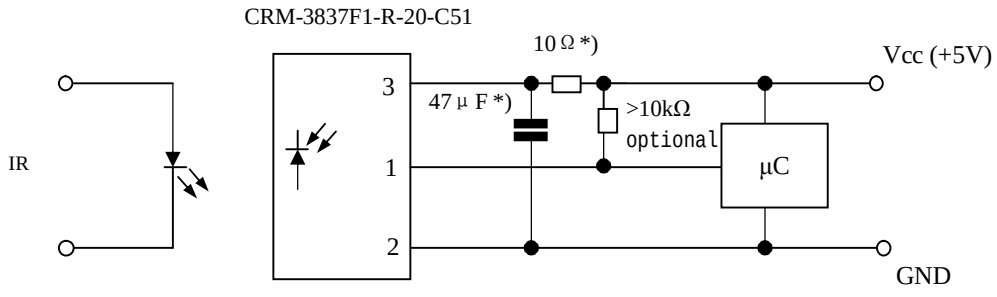


q: indicates horizontal and vertical directions

C . Pulse Width Test

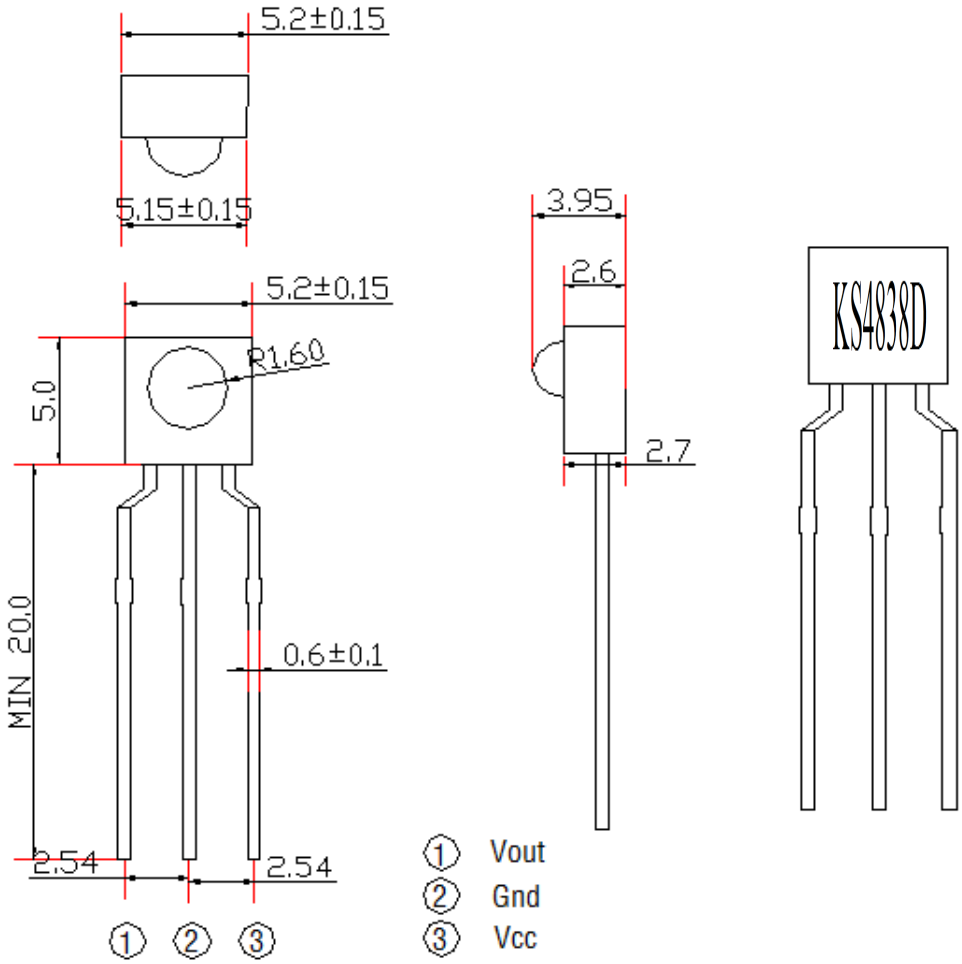


Application Circuit



*) recommended to suppress power supply disturbances

Dimensions in mm



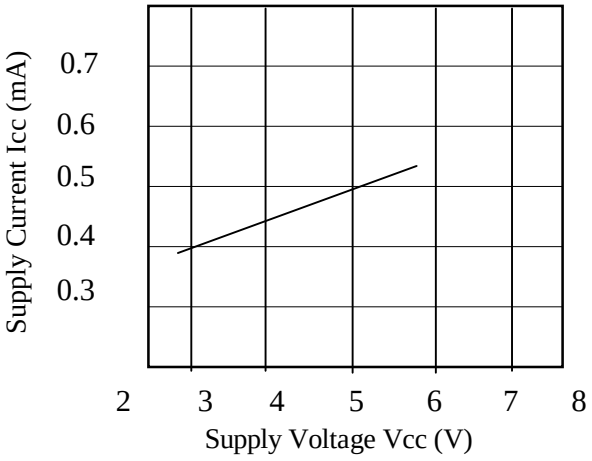
NOTES:

1.All dimensions are in millimeters .

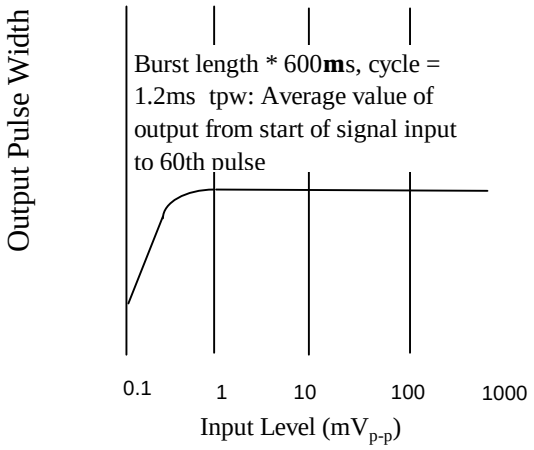
2.Tolerance is ±0.40mm unless otherwise specified.

3.Specifications are subject to change without notice.

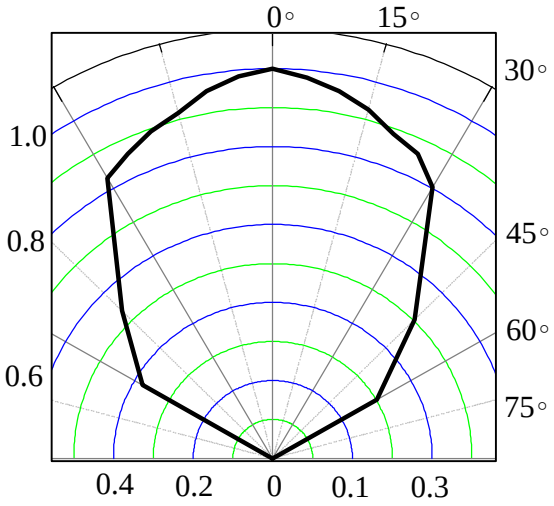
CHARACTERISTIC CURVES (T_A=25°C)



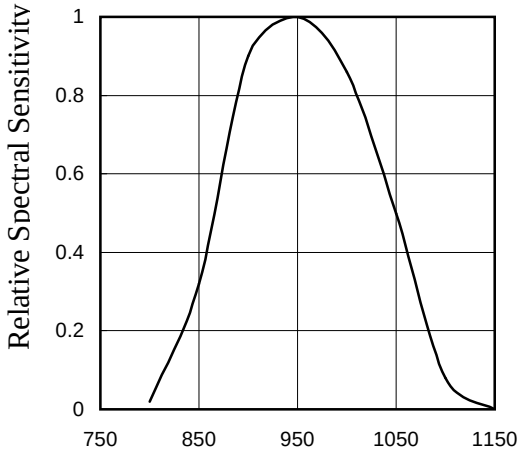
SUPPLY VOLTAGE vs. SUPPLY CURRENT



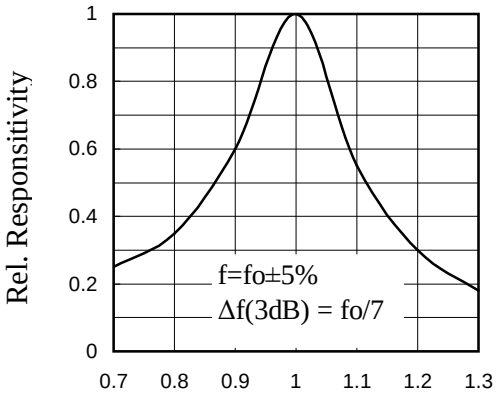
INPUT LEVEL vs.OUTPUT PULSE WIDTH



RELATIVE TRANIMISSION



RELATIVE SPECTRAL SENSITIVITY vs WAVELENGTH



FREQUENCY DEPENDENCE OF RESPONSIVITY

Reliability

Test item	Test condition	Standard
High temparature	Ta=+80℃ t=48H	Note 2.
Life Test	Vcc=5V t=500H	Note 2.
Low temparature	Ta= -30℃ t=48H	Note 2.
Temperature cycle	-35℃(0.5H) ~ +85℃(0.5H) 20cycle	Note 2.
Dropping	Test devices shall be dropped 3 times naturally onto hard wooden board from a 75cm height position.	Note 2.
Soldering ability test	Ta=260℃ t=5s	Note 3.

NOTE 1. Distance between emitter & detector specifies maximum distance that 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 200±50Lux under ordinary hite fluorescense lamp of no high frequency lighting.

3)Standard transmitter: burst wave indicated in Fig1.of standard transmitter shall be arranged to 50mVp-p under the measuring circuit specified in Fig2.

NOTE 2. (electro-optical charactistics) shall be satisfied after leaving 1 hours in the normal temperature .

NOTE 3. (electro-optical charactistics) shall be satisfied and 90% or more of the solder area is covered with solder.

Inspection standard

1.Among electrical characteristics , total number shall be inspected on items blow.

1-1 front distance between emitter & detector

1-2 Current consumption

1-3 H level output voltage

1-4 L level output voltage

2.Items except above mentioned are not inspected particularly , but shall fully satisfy

CAUTION (When use and storage of this device)

1.Store and use where there is no force causing transformation or change in quality .

2.Store and use where there is no corrosive gas or sea(salt) breeze .

3.Store and use where there is no extreme humidity .

4.Solder the lead-pin within the condition of ratings. After soldering do not add extra force .

5.Do not wash this device . Wipe the stains of diode side with a soft cloth. You can use the solvent , ethylalcohol or methylalcohol or isupropylene only .

6.To prevent static electricity damage to the Pre-AMP make sure that the human body , the soldering iron is connected to ground before using .

7.Put decoupling device between Vcc and GND for reduse the noise from power supply line .

8.The performance of remote-control system depends on environments condition and ability of periferal parts. Customer should evaluate the performance as total system in those conditions after system up with components such as commander , micon and this receiver module .

Others

1.This device is not design to endure radiative rays and heavily charged particles .

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