



# 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 : \_\_\_\_\_

产品型号

Part Number: **CRM-383BG1-24**

送样日期

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-383BG1-24

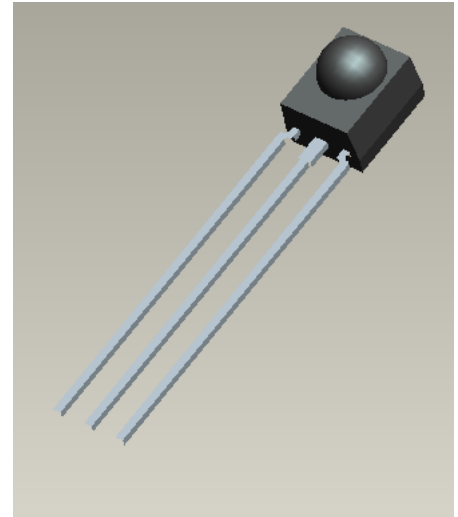
### Description

The CRM-383BG1\*\*\*\* 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.



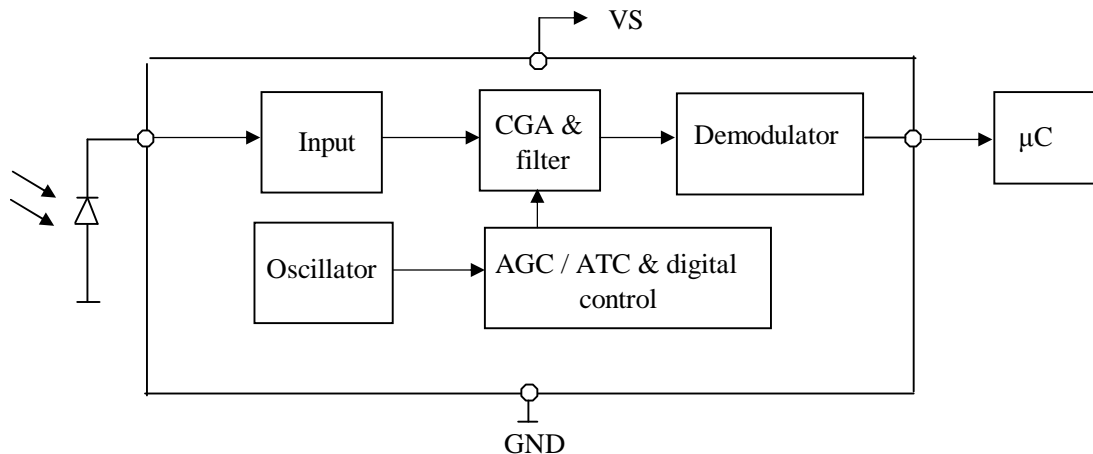
### Features

- | 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





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### Absolute Maximum Ratings

@ Ta=25°C

Item	Symbol	Ratings	Unit	Remark
Supply voltage	V <sub>CC</sub>	2.7 ~ 5.5	V	
Operating temperature	T <sub>opr</sub>	-25 ~ +85	°C	
Storage temperature	T <sub>stg</sub>	-25 ~ +85	°C	
Soldering temperature	T <sub>sd</sub>	260	°C	Maximum 5 seconds

### Electro-optical characteristics (V<sub>CC</sub>=3.0V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Supply Voltage	V <sub>s</sub>	2.7		5.5	V	
Current consumption	I <sub>CC</sub>		0.3	0.8	mA	Under no signal
Response wavelength	λ <sub>p</sub>		940		nm	
B.P.F Center Frequency	f <sub>o</sub>		38		KHz	
Output form	----- active low output -----					
H level output voltage	V <sub>oh</sub>	2.8	3.2	-	V	
L level output voltage	V <sub>ol</sub>	-	0.2	0.4	V	
H level output pulse width	T <sub>wh</sub>	400		800	μs	
L level output pulse width	T <sub>wl</sub>	400		800	μs	
Distance between emitter & detector	L <sub>1</sub> (θ=0°)	12.0	-	-	m	Note 1
	L <sub>2</sub> (θ=45°)	6.0			m	
Half angle	Δθ		±45		deg	Horizontal direction

### Test Method

#### A. Standard Transmitter

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

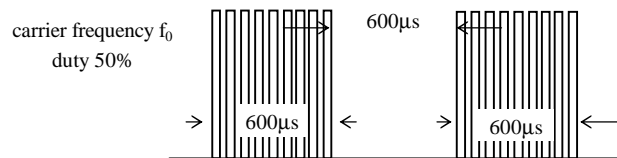


Fig 1. Burst Wave

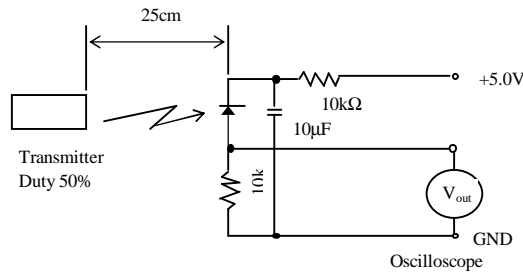


Fig 2. Standard Transmitter Measurement circuit

Fig 2. Sta



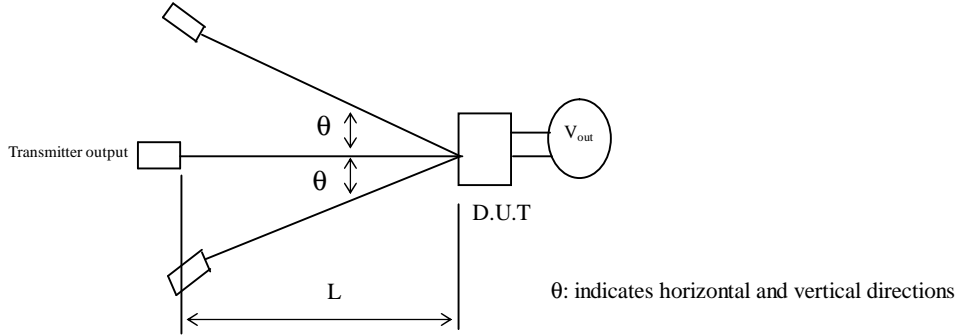
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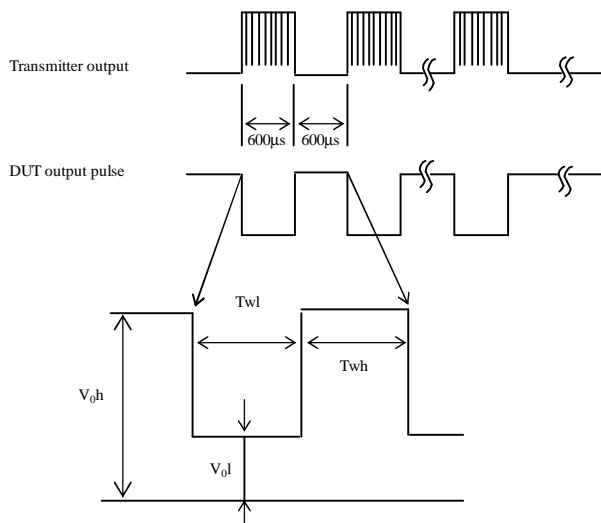
## INFRARED RECEIVER MODULE

## CRM-383BG1-24

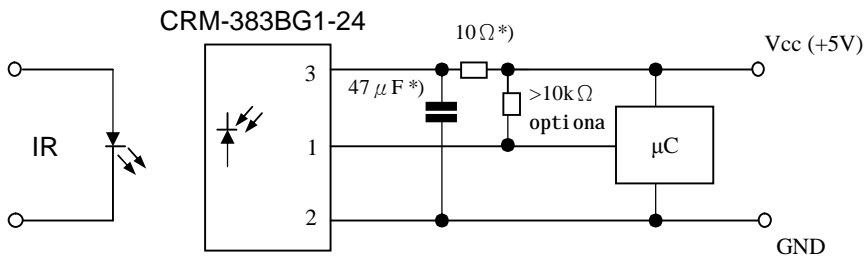
### B. Detection Length Test



### C. Pulse Width Test



### Application Circuit



\*) recommended to suppress power supply disturbances



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## CRM-383BG1-24

### Application Guide 1

#### 1. Acceptable code List

Data format	Code acceptable
Toshiba	O
NEC	O
Sharp	O
Matsushita	O
Zenith	O
RC5 _ Philips	O
RC6 _ Philips	X
Sony 12 Bit	O
Sony 15 Bit	X
Sony 20 Bit	X
RCA _ Thomson	X
Mitsubishi	X
JVC	X
Continuous code	X
High Data Rate code	X

#### 2. Suitable data format

Minimum Burst Length $t_{burst}$ ( number of pulses per burst)	10 pulses @3V	12 pulses @5V
Minimum Burst Gap time $t_{burst\_gap}$ ( number of pulses per burst) between two burst	14 pulses @3V	16 pulses @5V
Minimum data pause time ( for full frame repeat code )	25 msec @3V	25 msec @5V

\* Minimum 30cm if between RCM and Transmitter for normal operating



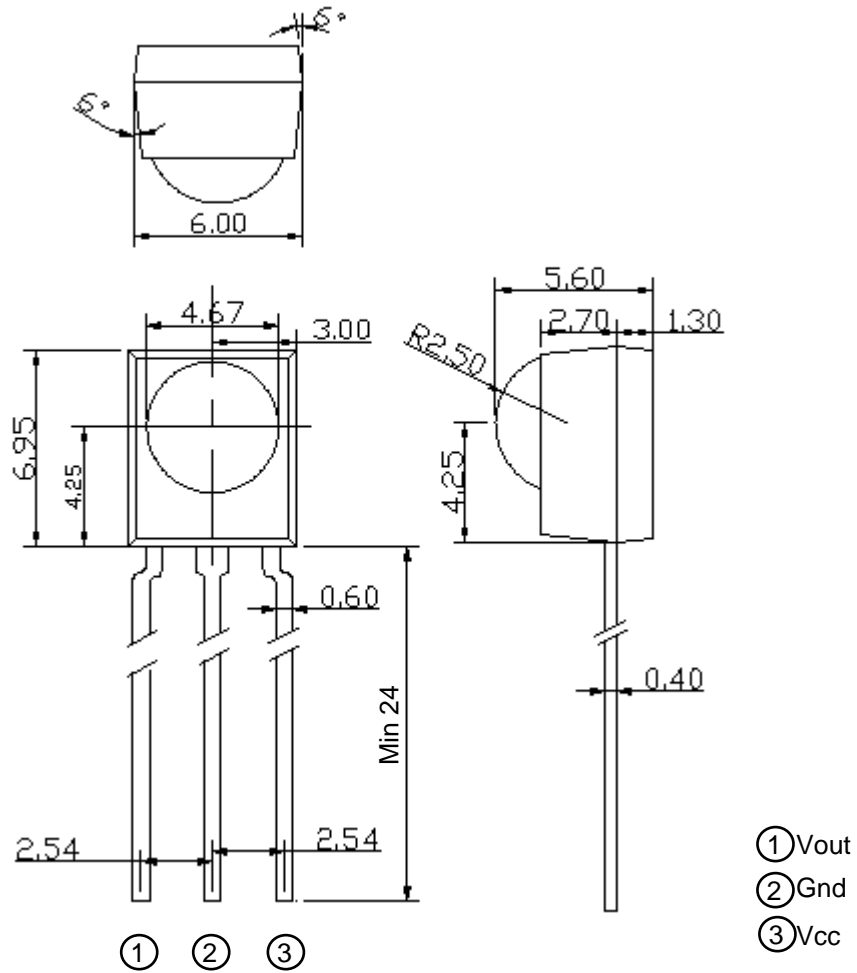
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Dimensions in mm



### NOTES:

1. All dimensions are in millimeters .
2. Tolerance is  $\pm 0.40$ mm unless otherwise specified.
3. Specifications are subject to change without notice.



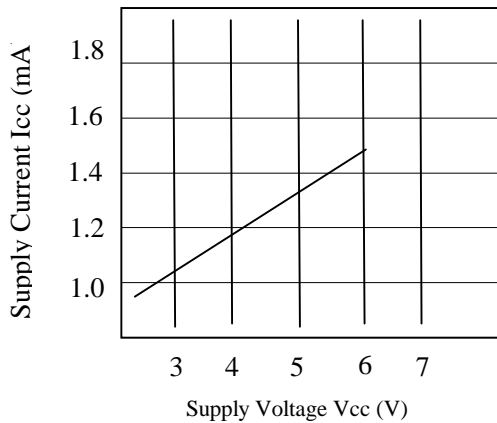
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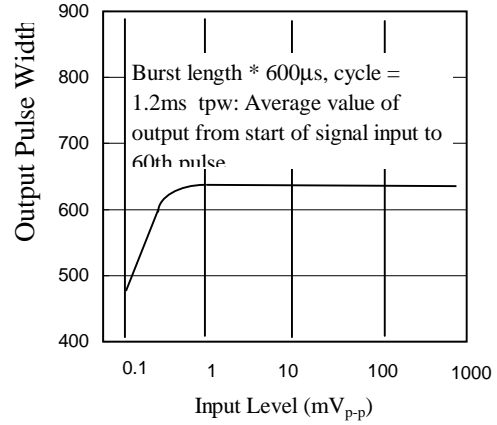
## INFRARED RECEIVER MODULE

## CRM-383BG1-24

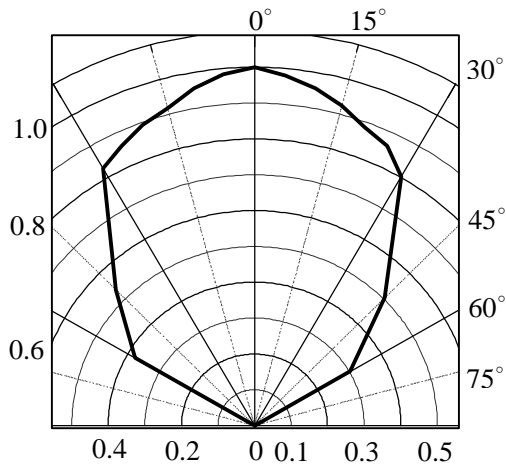
### CHARACTERISTIC CURVES ( $T_A=25^{\circ}\text{C}$ )



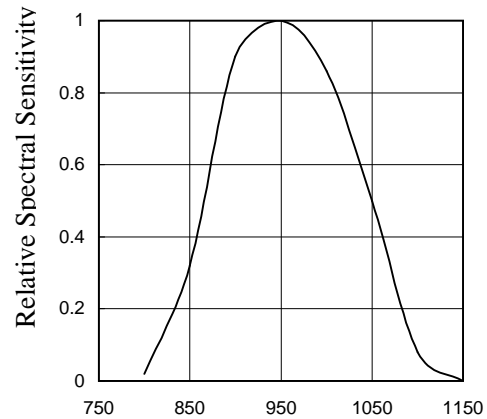
SUPPLY VOLTAGE vs. SUPPLY CURRENT



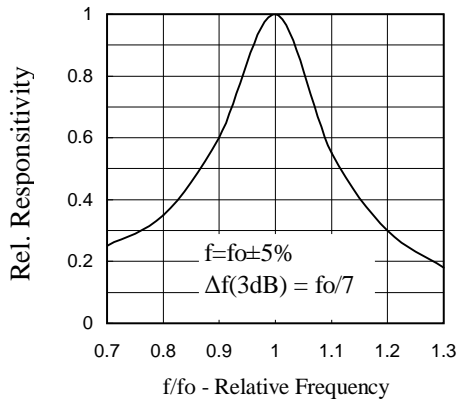
INPUT LEVEL vs. OUTPUT PULSE WIDTH



RELATIVE TRANSMISSION



RELATIVE SPECTRAL SENSITIVITY vs. WAVELENGTH



FREQUENCY DEPENDENCE OF RESPONSIVITY



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### Reliability

Test item	Test condition	Standard
High temperature	Ta=+80℃ t=48H	Note 2.
Life Test	Vcc=5V t=500H	Note 2.
Low temperature	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 characteristics) shall be satisfied after leaving 1 hours in the normal temperature .

NOTE 3. (electro-optical characteristics) 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 reduce 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 .