



PIC-12043S Series

PIC-12043Sシリーズは、最先端の光技術と半導体技術により、高感度、高速応答のフォトダイオードと信号処理回路を超小型（容積比：当社比1/10以下）のパッケージに内蔵した光リモコン用受光センサーです。また、トップビュー、サイドビューのリード形状を用意していますのでセット側の意匠に柔軟に対応できます。

The PIC-12043S series is a detecting sensor for light remote control made up of a signal processing circuit and a highly sensitive, hi-speed response photodiode combined together into a super small package using the most advanced of light and semi-conductor technology.

特長 FEATURES

- 超小型
- 低コスト
- 高信頼性
- Super small type
- Low cost
- Highly dependable

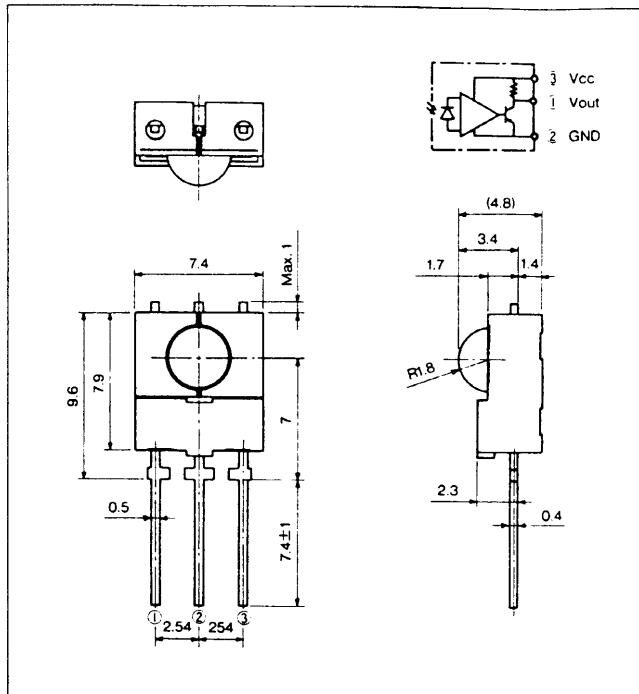
用途 APPLICATIONS

- 各種光リモコン
- Optical remote controls

シリーズ SERIES

- PIC-12041S 40.0kHz
- PIC-12042S 36.7kHz
- PIC-12043S 37.9kHz
- PIC-12044S 32.7kHz（開発中）
- PIC-12045S 56.9kHz

外形寸法 DIMENSIONS (Unit:mm)



最大定格 MAXIMUM RATINGS

(Ta=25°C)

Item	Symbol	Rating	Unit
電源電圧 Supply voltage	V _{cc}	5.0	V
動作温度 Operating temp.	T _{opr.}	-10~+55	°C
保存温度 Storage temp.	T _{stg.}	-20~+75	°C

電気的光学的特性 ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C)

Item	Symbol	Min.	Typ.	Max.	Unit
電源電圧 Power supply voltage	V _{cc}	4.7		5.3	V
消費電流 Consumption of current ^{*1}	I _{cc}			5	mA
到達距離 Distance between emitter and detector ^{*2}	ℓ		10		m
半値角 Half angle ^{*3}	△θ		±45		deg.
同調周波数 Tuning frequency	f _o		37.9 ^{*5}		kHz
ピーク感度波長 Peak wavelength	λ _p		940		nm
出力形態 Output form	—	アクティブ・ロウ Active low			—
ローレベル出力電圧 Low level output voltage ^{*4}	V _{OL}			0.5	V
ハイレベル出力電圧 High level output voltage ^{*4}	V _{OH}	4.2			V

*1.無信号時。

*2.当社標準送信機使用。

*3.水平方向及び垂直方向。

*4. V_{cc}=5V 当社標準送信機光軸上30cmの距離にて。

*5.各種周波数があります。

*1.at no signal

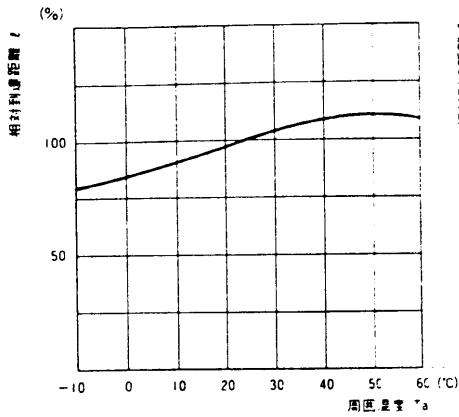
*2.by our typical projector

*3.X,Y direction

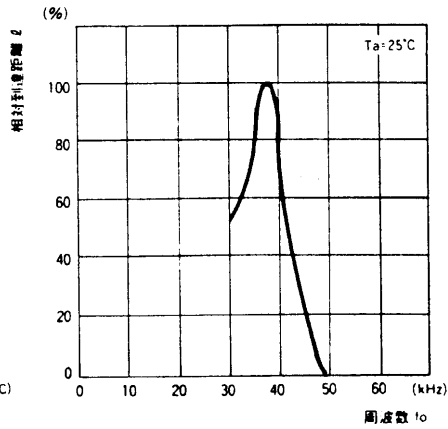
*4.V_{cc}=5V, ℓ=30cm from our typical projector

*5.For most type of transmitters "fo" are available.

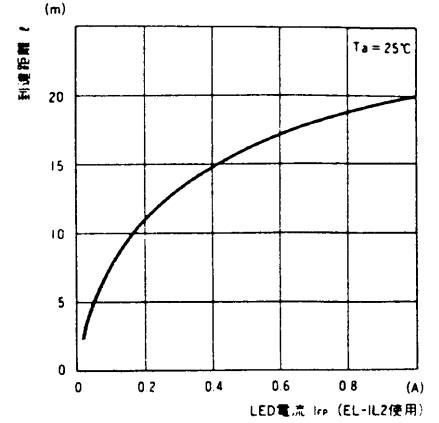
■到達距離/周囲温度特性 L/T_a



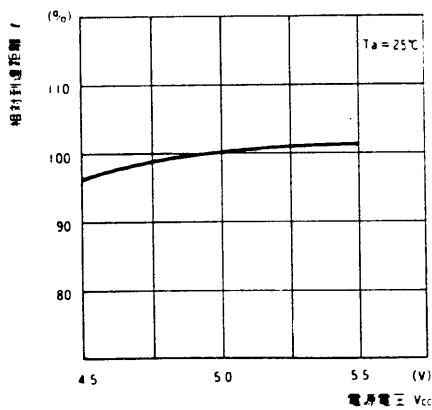
■到達距離/周波数特性 L/f_o



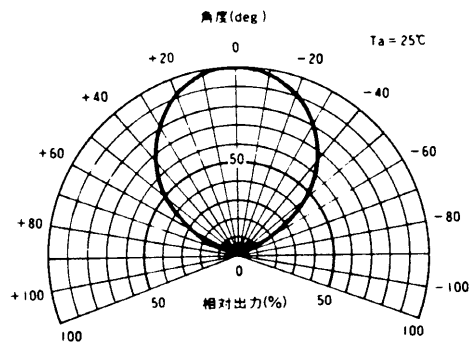
■到達距離/LED電流特性 L/I_{FP}



■到達距離/電源電圧特性 L/V_{CC}



■指向特性



PIC-120435

491-380

1/4

OPTIC REMOTE CONTROL RECEIVER MODULE SPECIFICATION

1. Application

This specification is applied to optic remote control receiver module PIC-120435 which will be delivered to .

2. Dimensions

As per attached drawing (KCTS-9312043-1).

3. Ratings and characteristics

3-1. Maximum ratings

Item	Symbol	Ratings	Unit	Remarks
Supply voltage	Vcc	5.8	V	
Operating temperature	Topr	-10~+60	°C	
Storage temperature	Tstg	-20~+75	°C	
Soldering temperature	Tsd	260	°C	Maximum 5 seconds

3-2. Electro-optical characteristics

(Ta=25°C, Vcc=5V)

Item	Symbol	Min.	Typ.	Max.	Unit	Remarks
Current consumption	Icc			5.0	mA	Under no signal
Peak wavelength	λ_p		940		nm	Note 1
Tuning frequency	f _o		37.9		kHz	Note 1
Output form	---active low output---					
H level output voltage	Voh	4.2			V	Note 1
L level output voltage	Vol			0.5	V	Note 1
H level output pulse width	Twh	400		800	μs	Note 1
L level output pulse width	Twl	400		800	μs	Note 1
Distance between emitter & detector	l	8.0			m	Note 1
Half angle	$\Delta \theta$		±45		deg	Horizontal direction

3-3. Recommendable operating temperature

Supply voltage 4.5~5.5V

Note 1. Distance between emitter & detector specifies maximum distance that output wave form satisfies the standard (3-2) under the conditions below against the standard transmitter.

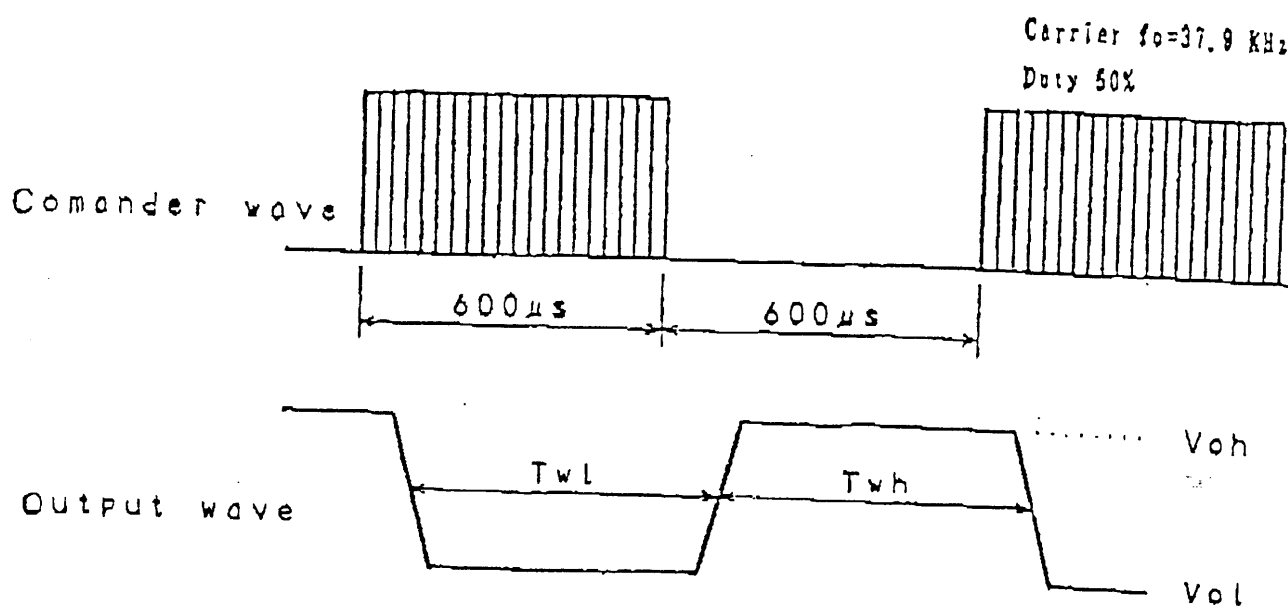
(1) measuring place.....Indoor without extreme reflection of light.

(2) Ambient light source...Detecting surface illumination shall be 200±50Lux under ordinary white fluorescence lamp of no high frequency lightning.

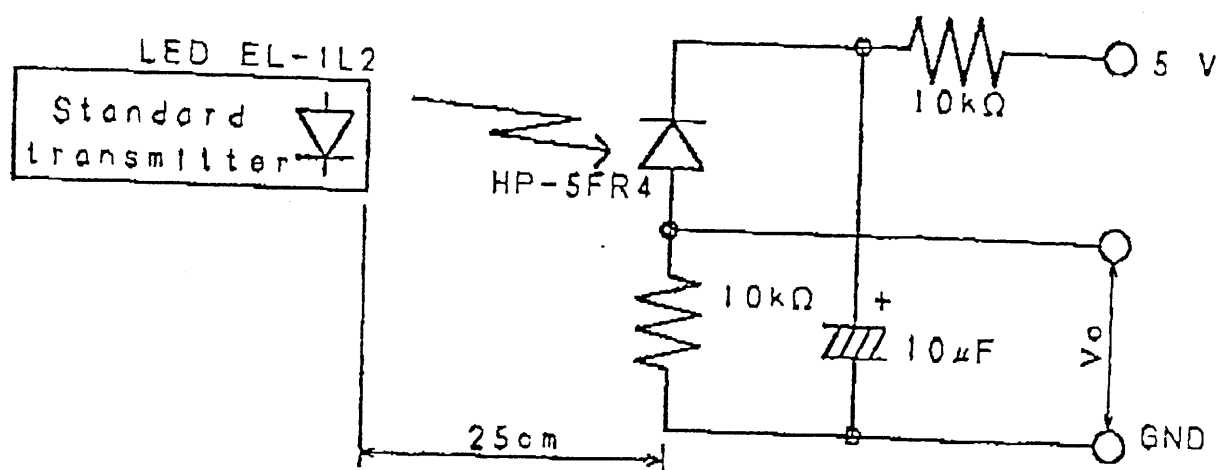
(3) Standard transmitter...Burst wave indicated in drawing 3-1 of Standard transmitter shall be arranged to 50mVp-p under the measuring circuit specified in drawing 3-2.

IC-12043S

2/4



drawing 3-1 Burst wave, Output wave



drawing 3-2 Po measurement circuit

Reliability

Test Item	Test condition	Standard
High temperature	$T_a = +60^\circ\text{C}$ $V_{cc} = 5.0\text{V}$	$t = 240 \text{ H}$ Note 2.
High temp. & high hum	$T_a = +40^\circ\text{C}$ 90%RH $V_{cc} = 5.0\text{V}$	$t = 240 \text{ H}$ Note 2.
Low temperature	$T_a = -10^\circ\text{C}$ $V_{cc} = 5.0\text{V}$	$t = 240 \text{ H}$ Note 2.
Heat cycle	-20°C (0.5H) $\sim$ $+75^\circ\text{C}$ (0.5H) 20cycle	Note 2.
Dropping	Test devices shall be dropped 3 times naturally onto hard wooden board from a 75cm height position.	Note 3.

Note 2.3-2 (electro-optical characteristics) shall be satisfied after leaving 2 hours in the normal temperature.

Note 3.3-2 (electro-optical characteristics) shall be satisfied and no conspicuous deforms and destructions of appearance. (excepting deforms of terminals)



PIC-120435

8 / 4

6. Inspection standard

6-1. Among electrical characteristics, total number shall be inspected on items blow.

1. front distance between emitter & detector
2. Current consumption
3. H level output voltage
4. L level output voltage

6-2. Items except above mentioned are not inspected particularly, but shall fully satisfy

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

7-1. Store and use where there is no force causing transformation or change in quality.

7-2. Store and use where there is no corrosive gas or sea(salt) breeze.

7-3. Store and use where there is no extreme humidity.

7-4. Solder the lead-pin within the condition of ratings. After soldering do not add exterior force.

7-5. Do not wash this device. Wipe the stains of diode side with a soft cloth. you can use the solvent, ethylalcohol or methylalcohol or isopropylene only.

7-6. To prevent static electricity damage to the Pre-AMP make sure that the human body, the soldering iron is connected to ground before using.

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

8. Guarantee period and scope

8-1. Guarantee period

One year after delivery to desired place.

8-2. Guarantee scope

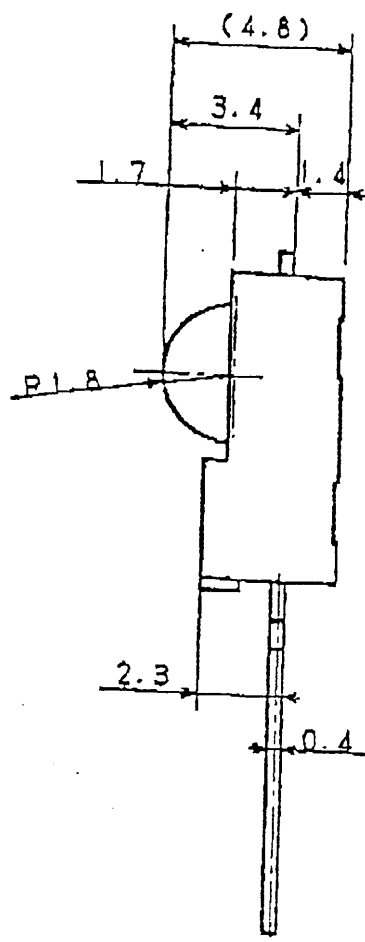
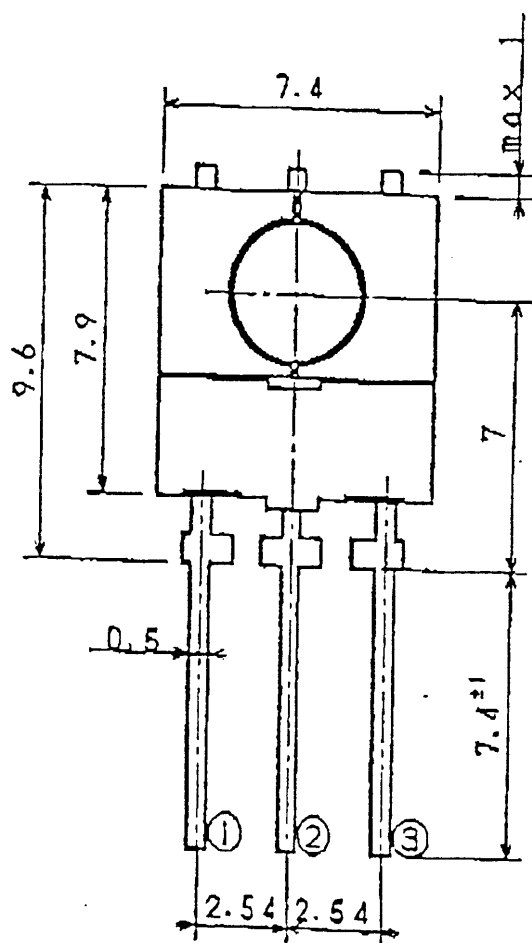
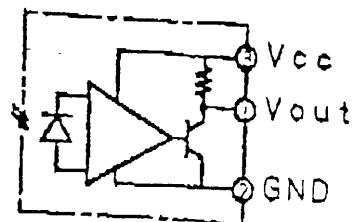
A re-delivery of goods will be carried out if the cause of malfunction lies in our device. However no responsibilities will be taken for the inconveniences caused by the malfunction of our devices.

9. Others

9-1. This device is not design to endure radiative rays and heavily charged particles.

9-2. In case where any trouble or questions arise, both parties agree to make full discussion covering the said problem.

5



① Vout

② GND

③ V_{CC}

6

491380

OPTIC RECEIVER MODULES: ONE CHIP TYPE

PIC-1204 シリーズ 品番体系

PIC-1204

fo	1
	40.0KHz
	2
	36.7KHz
	3
	37.9KHz
	5
	56.9KHz

(製品化未定)
UNDERDEVELOPMENT

CASE 形状	M
	MESH-体型 CASE
N	シールドケース無し
	表示無し仕通常 CASE



WITH MESH
WITHOUT SHIELD
CASE
NORMAL CASE

(LEAD) リード 形状	S
	サイドピエ-
T	トップピエ-
	サイドピエ- (ワッヂリ-付)

SIDE VIEW
TOP VIEW
SIDE VIEW (LONG
LEAD)

