

RS-140,RS-150,RS-170,RS-180 シリーズ

Micro-size Surface Mountable Infrared Remote Control Receiver Unit RS-140,RS-150,RS-170,RS-180 Series



RS-140



RS-150



RS-170



RS-180

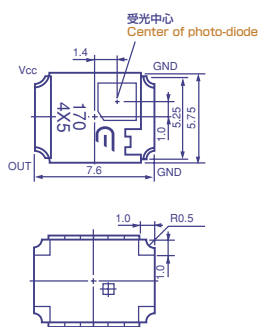
■外形寸法図/Outline drawing

RS-140シリーズは、RS-20シリーズと同一
RS-140 Series identical to RS-20 Series

RS-150シリーズは、RS-50シリーズと同一
RS-150 Series identical to RS-50 Series

■外形寸法図/Outline drawing

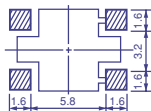
RS-170シリーズ/RS-170 Series



単位/Unit : mm

推奨はんだ付けパターン

The following soldering patterns are recommended for reflow-soldering:



(注) リモコン受光ユニット(RS)下面は、べたアースとする。
(Note) Remote control receiver unit (RS) should be grounded wholly on its bottom side.

特徴/Features

1. RS-100シリーズは、従来品に比べ耐光性、耐ノイズ性は優れています。
2. RS-170シリーズは、表面及び裏面実装が可能で、超小型・薄型です。
3. RS-180シリーズは、レンズ付きで受光距離特性が優れています。

1. The RS-100 series have excellent light and noise resistance as compared to the existing product.
2. The RS-170 series, which are extremely small and thin models, provide top surface and bottom surface mounting availability.
3. The RS-180 series with lens provide excellent sensing distance characteristics.

用途/Application

TV、VTR、オーディオ機器、エアコン、カーステレオ、カメラ、その他

TV, VCR, audio equipment, air conditioner, automotive equipment, camera etc.

■絶対最大定格/Absolute Maximum Rating

(Ta 25°C)

項目/Item	記号/Symbol	定格値/Rating	単位/Unit
電源電圧/Power supply voltage	V	6	V
動作温度範囲/Operating temperature range	T _{OP}	-30~+85	°C
保存温度範囲/Storage temperature range	T _{ST}	-40~+90	°C

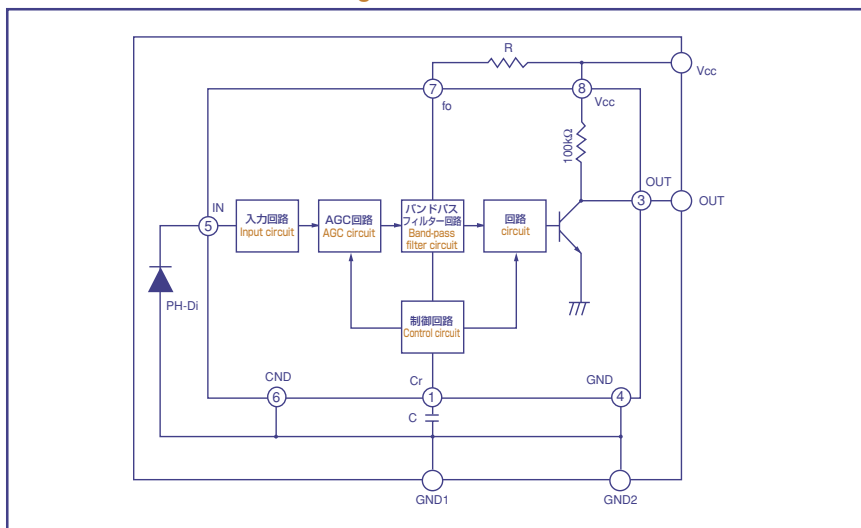
■動作電圧/Recommended Operating Conditions

項目/Item	記号/Symbol	推奨動作範囲/Recommended Operating Voltage	単位/Unit
電源圧力/Power voltage	V _{CC}	4.5~5.5	V

■仕様/Specifications

シリーズ/Series	特徴/Feature	搬送周波数/Carrier frequency			仕様/Specifications	
		40KHz	38KHz	36.7KHz	フォトダイオードサイズ/Size of photo-diode	到達距離/Reaching distance
RS-140シリーズ/RS-140 Series	汎用 For general purpose	RS-140	RS-141	RS-142	□2mm (レンズ付) (with lens)	5m以上 5 meters min.
RS-150シリーズ/RS-150 Series	側面受光用 For side-mounted receiver	RS-150	RS-151	RS-152	□2mm	5m以上 5 meters min.
RS-170シリーズ/RS-170 Series	超薄型 Ultra thin	RS-170	RS-171	RS-172	□2mm	5m以上 5 meters min.
RS-180シリーズ/RS-180 Series	超小型 Ultra small	RS-180	RS-181	RS-182	□2mm (レンズ付) (with lens)	5m以上 5 meters min.

■内部結線部/Internal circuit diagram



The drawing shows three views of the RS-180 Series connector:

- Top View:** A square component with a central circular feature. Dimensions include a total width of 8.3 mm, a central hole diameter of 7.7 mm, and a distance of 4X5 mm from the center to the corner mounting holes. The top edge is labeled Vcc and the bottom edge is labeled GND.
- Side View:** Shows the profile of the component. The total height is 3.5 mm, with a mounting hole diameter of $\phi 2.2$ mm. The bottom flange has a width of 3.0 mm and a height of 1.8 mm.
- Bottom View:** Shows the underside of the component. It features a central square pad and corner mounting holes. Dimensions include a 1.0 mm distance from the center to the corner holes and a fillet radius of R0.5 mm at the corners.

単位/Unit: mm

推奨はんだ付けパターン

The following soldering patterns are recommended for reflow-soldering:

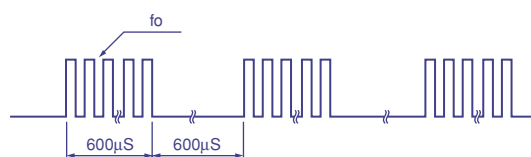
The diagram shows a cross-shaped soldering pattern for a component. The central square has a side length of 5.8. The four rectangular pads extending from the center have a width of 1.6. The total width and height of the pattern are 8.0. There are four mounting holes, one in each corner, with a diameter of 1.0. The distance from the center of the component to the center of each hole is 3.2. The distance from the edge of the component to the center of each hole is 1.4. The distance from the edge of the component to the edge of each hole is 0.2. The distance from the center of the component to the edge of each hole is 1.6.

(注) リモコン受光ユニット (RS) 下面は、べたアースとする。

(Note) Remote control receiver unit (RS) should be grounded wholly on its bottom side.

No	項目 Items	記号 Symbol	条件 Conditions	最小値 Minimum	標準値 Typical	最大値 Maximum	単位 Unit
1	消費電流 Current consumption	I _{CC}	無信号入力時において When no signal is put in	-	0.5	1	mA
2	到達距離 Reaching distance	L ₀	光軸において(注1)(注2) At optical axis(Note 1)(Note 2)	5	7	-	m
		L ₃₀	受光面を頂点として光軸に対して30°の円錐形の範囲において Within the range of 30°circular cone to optical axis at the top surface of photo sensor window	3.5	5	-	
		L ₄₅	受光面を頂点として光軸に対して45°の円錐形の範囲において Within the range of 45°circular cone to optical axis at the top surface of photo sensor window	2.5	3.5	-	
3	Lowレベル出力電圧 Low level output voltage	V _L	光軸上30cmの距離において(注1) At distance of 30 cm on optical axis (Note 1)	-	0.2	0.4	V
4	Highレベル出力電圧 High level output voltage	V _H	光軸上30cmの距離において(注1) At distance of 30 cm on optical axis (Note 1)	4.8	5	-	V
5	Lowレベルパルス幅 Low level pulse width	T _{WL}	5cmから到達距離までの範囲において出力のT _{WL} 期間幅で規定(注1) To be determined based on the output T _{WL} time required within the range from 5 cm to the reaching distance (Note 1)	410	660	910	μs
6	搬送周波数 Carrier frequency	f ₀		-	40	-	KHz

(Note 1)Burst waves as shown below are transmitted from standard transmitters.



(Note 2) Optical measurements should be conducted at dark locations where disturbance lights and reflective objects are not existing.

指向特性
Directive Characteristics

The graph is a polar plot showing the directivity of two antenna series. The vertical axis represents the angle in degrees, ranging from 0° at the top to 90° at the bottom, with major grid lines every 15° and minor grid lines every 5°. The horizontal axis represents the azimuth angle in degrees, ranging from 30° on the left to 30° on the right, with major grid lines every 15° and minor grid lines every 5°. Two curves are plotted: a solid line for the RS-140, 180 Series and a dashed line for the RS-150, 170 Series. Both curves show a main lobe centered at 0° azimuth and 0° elevation, with a peak directivity of approximately 100 dB. The RS-150, 170 Series curve is slightly wider than the RS-140, 180 Series curve.

Angle (°)	RS-140, 180 Series (dB)	RS-150, 170 Series (dB)
0	100	100
15	95	95
30	85	85
45	70	70
60	55	55
75	40	40
90	25	25