

## IrDA Infrared Communication Module

### RPM882-H7

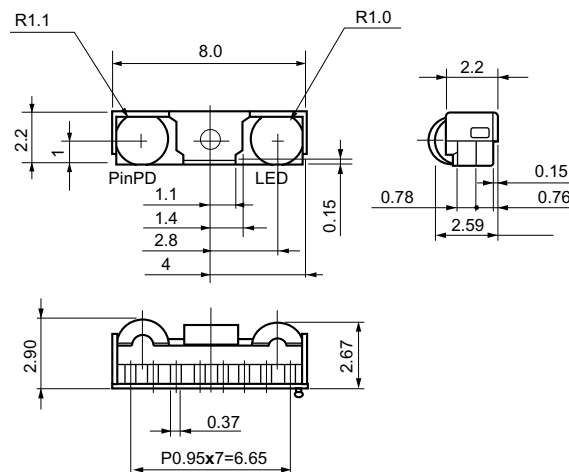
#### ● Features

- Bilateral symmetrical and wide angle of optical characteristics both for IrDA and for RC mode.
- Typical 9m for Remote control
- IrDA Ver 1.2 Low Power(2.4kbps to 115.2kbps)
- Low voltage operation ( $V_{CC}=2.4$  to  $3.6V$ ,  $V_{IO}=1.5$  to  $3.6V$ )
- Flexible Application for Transfer input  
Separate input / Common input

#### ● Applications

- Mobile Phone, PDA etc.

#### ● External Dimensions (Unit:mm)



#### ● Absolute maximum ratings ( $T_a=25^{\circ}C$ )

Parameter	Symbol	Limits	Units
Supply Voltage	$V_{max}$	7.0 *1	V
Input Voltage	$V_{in}(4,5,6,7pin)$	-0.3~ $V_{IO}+0.3$	V
Operation Temperature	$T_{opr}$	-25~85	$^{\circ}C$
Storage Temperature	$T_{stg}$	-30~100	$^{\circ}C$
LED Peak Current	$I_{fp}$	300 *2	mA
Power Dissipation	$P_d$	300 *3	mW

\*1 This applies to all pins basis ground pins (1pin)

\*2 LED Peak Current: <90usec, On duty<50%

\*3 When glass-epoxy board (70 x 70 x 1.6mm) mounted. In case operating environment is over  $25^{\circ}C$ , 4mW would be reduced per each  $1^{\circ}C$  stepping up.

#### ● Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Units
Supply Voltage	VCC	2.4	3.0	3.6	V
Interface Supply Voltage	VIO	1.5	3.0	VCC	V
LED Supply Voltage	LEDVCC	2.6	3.0	5.5	V

#### ● Electrical characteristics ( $V_{CC}=V_{IO}=3.0V$ , $LEDVCC=3.0V$ , $T_a=25^{\circ}C$ )

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Consumption Current 1	$I_{cc1}$	—	80	104	$\mu A$	PWDOWN=0V, At no input light
Consumption Current 2	$I_{cc2}$	—	0.01	0.2	$\mu A$	PWDOWN=VIO, At no input light
LED Anode Current (IrDA Mode)	$I_{LEDA1}$	28	40	52	mA	TXD=VIO, $R_1=4.7\Omega$ , PWDOWN=0V
LED Anode Current (RC Mode)	$I_{LEDA2}$	150	200	245	mA	TX-RC=VIO, $R_1=4.7\Omega$ , PWDOWN=0V
RXD Output Pulse Width	$tw_{RXD}$	1.5	2.3	4.2	$\mu s$	$C_L=15pF$ , 2.4~115.2kbps

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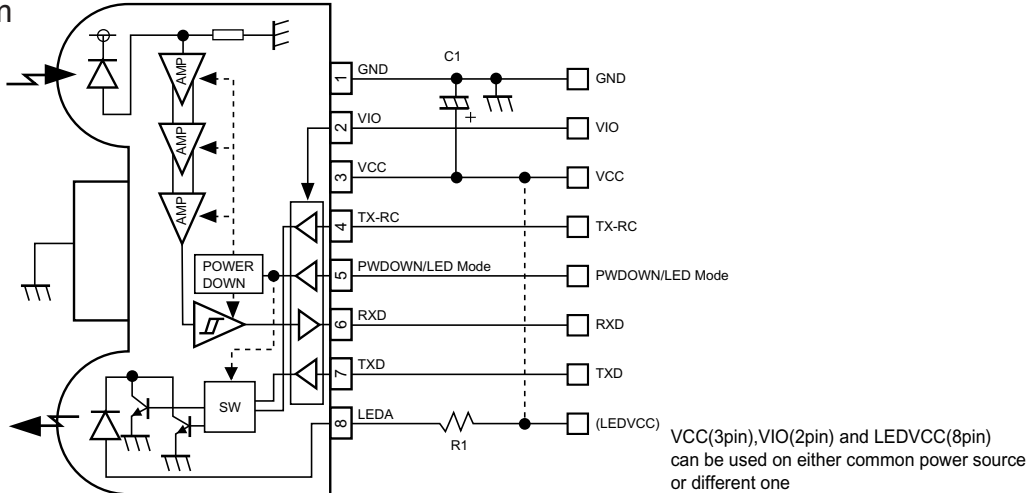
- Current specifications in effect of

Oct. 2003

● Optical Characteristics (VCC=VIO=3.0V,LEDVCC=3.0V,Ta=25°C)

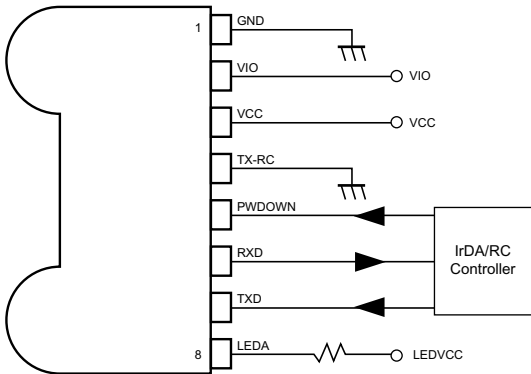
Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Peak Wave Length 1(IrDA Mode)	$\lambda P1$	880	890	892	nm	ILED=50mA,Duty20%
		850	-	900	nm	ILED=50mA,Duty20%,-20~60°C
Peak Wave Length 2(RC Mode)	$\lambda P2$	880	890	920	nm	ILED=200mA,Duty20%
Intensity 1(IrDA Mode)	IE1	4	13	28	mW/sr	-15deg $\leq \theta_L \leq 15$ deg,R1=4.7 $\Omega$
Intensity 1(RC Mode)	IE2	30	65	130	mW/sr	-15deg $\leq \theta_L \leq 15$ deg,R1=4.7 $\Omega$
Half-Angle	$\theta L/2$	$\pm 15$	$\pm 22$	-	deg	
Minimum Irradiance in Angular	Eemin	-	3.6	6.8	$\mu W/cm^2$	-15deg $\leq \theta_L \leq 15$ deg
Maximum Irradiance in Angular	Eemax	500	-	-	mW/cm <sup>2</sup>	-15deg $\leq \theta_L \leq 15$ deg
INPUT Half-Angular	$\theta D/2$	$\pm 15$	-	-	deg	
Maximum Emitting Time	TLEDmax	20.5	48	120	$\mu s$	TXD=0 $\rightarrow$ VIO or TX-RC=0 $\rightarrow$ VIO

● Block Diagram



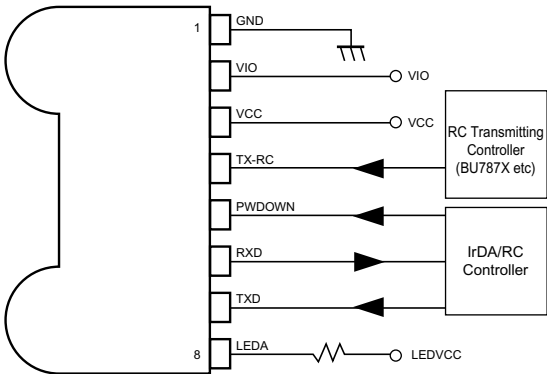
● Interface operating timing (Emitting Side)

(1) When TXD output for IrDA and TXD output for remote controller is 1 line



Input		Condition	
PWDOWN	TXD	LED Mode	Receiver Circuit
L	L	OFF	ON
L		IrDA	ON
H	L	OFF	OFF
H		RC	OFF

(2) When TXD output for IrDA and TXD output for remote controller are different lines



(2) RC transmitting mode at IDA receiver active condition

Input			Condition	
PWDOWN	TX-RC	TXD	LED Mode	Receiver Circuit
L	L	L	OFF	ON
L	L		IrDA	ON
H		L	RC	OFF
H	L	L	OFF	OFF

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