GL1F20/GL1F201 IrDA1.0 Compliant Infrared Emitting Diode

■ Features

1. Compliant with IrDA1.0
   (Date rate : 2.4k to 115.2kbps)
2. Built-in infrared emitting diode circuit
3. Pair use with **IS1U20** is recommended.

■ Applications

1. Personal computers
2. Personal information tools (PDA)
3. Printers
4. Word processors

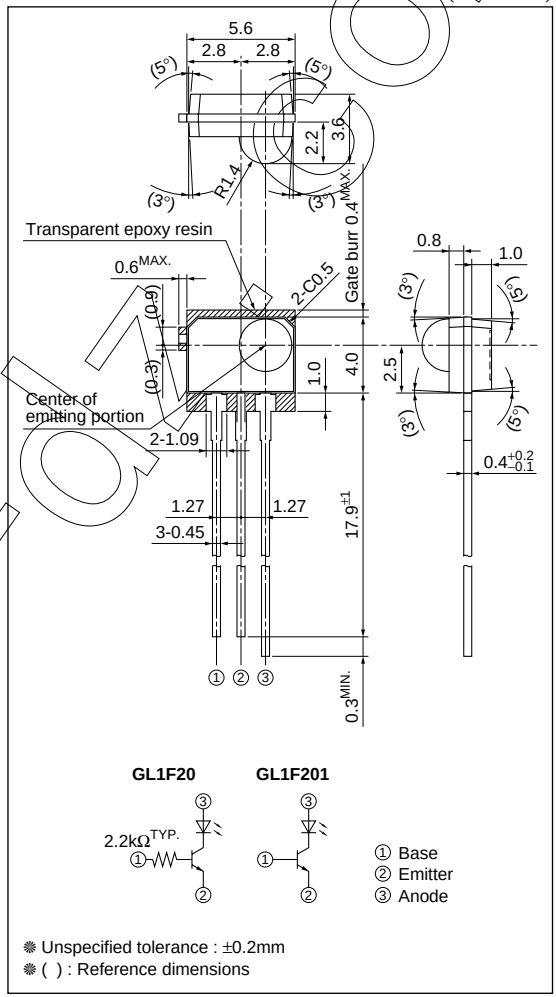
IrDA : Abbreviation of the Infrared Data Association established for standardization of infrared communication specifications

■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Forward current	I_F	50	mA
*1 Peak forward current	I_{FM}	400	mA
Operating temperature	T_{opr}	−10 to +70	°C
Storage temperature	T_{stg}	−20 to +85	°C
*2 Soldering temperature	T_{sol}	260	°C

*1 Pulse width 78.1µs, Duty ratio=3/16
*2 For MAX. 3s at the position of 2 mm from the resin edge

■ Outline Dimensions (Unit : mm)



■ Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions GL1F20	Conditions GL1F201	MIN.	TYP.	MAX.	Unit
Operating voltage	GL1F20	V_{CC}	–		4.75	–	5.25	V
	GL1F201				2.7		3.3	
High level input voltage	GL1F20	V_{IH}	Vcc=4.75 to 5.25V	Vcc=2.7 to 3.3V	4.5	–	Vcc	V
	GL1F201				2.4			
Low level input voltage		V_{IL}	Vcc=4.75 to 5.25V	Vcc=2.7 to 3.3V	–	–	0.4	V
Peak emission wavelength		λp	I_F=20mA		850	870	900	nm
Radiant intensity		I_E	Vcc=5V, R_L=7.5Ω *3V_{IN}=4.5V t_{WIN}=1.63µs, DR=3/16 ϕ<=15°, *4	Vcc=3V, R_L=2.2Ω *3V_{IN}=2.7V, R_B=1kΩ±5% C_B=1500pF, t_{WIN}=1.63µs DR=3/16, *4ϕ<=15°	40	–	350	mW/sr
Pulse width	GL1F20	t_W			1.41	1.6	2.71	µs
	GL1F201					1.7		
Rise time	GL1F20	t_r			–	0.23	0.6	µs
	GL1F201					0.09		
Fall time	GL1F20	t_f			–	0.17	0.6	µs
	GL1F201					0.21		
Input current	GL1F20	I_{IH}	*3V_{IN}=4.5V	*3V_{IN}=2.4V	1.0	–	3.0	mA
	GL1F201				1.2		2.3	
Spectrum radiation bandwidth		Δλ	I_F=20mA		–	40	–	nm
Half intensity angle		Δθ	I_F=20mA		–	±20	–	°

*3 Refer to the recommended circuit.
*4 Direction of mechanical axis of the lens portion of the element : ϕ=0°

Fig.1 Peak Forward Current vs. Ambient Temperature

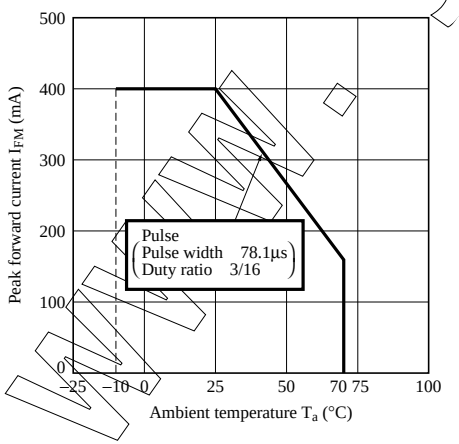


Fig.2 Spectral Distribution

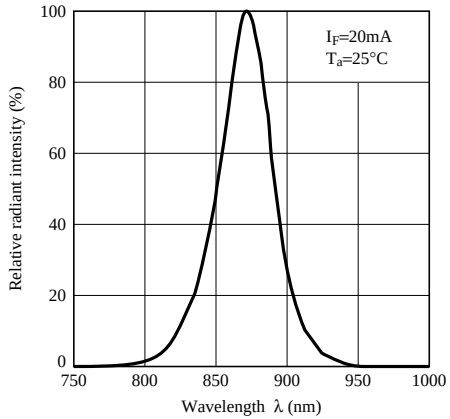


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

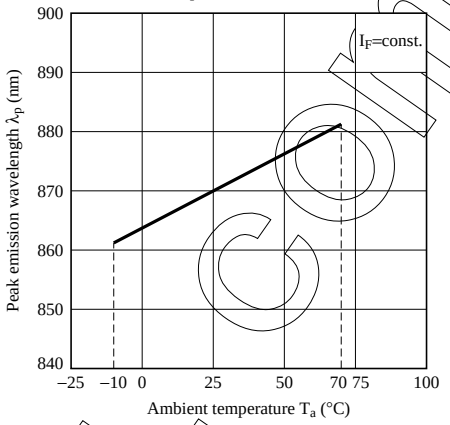


Fig.4 Relative Radiant Intensity vs. Ambient Temperature

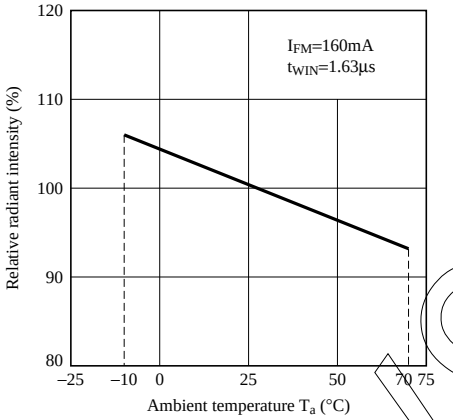


Fig.5 Radiant Intensity vs. Peak Forward Current

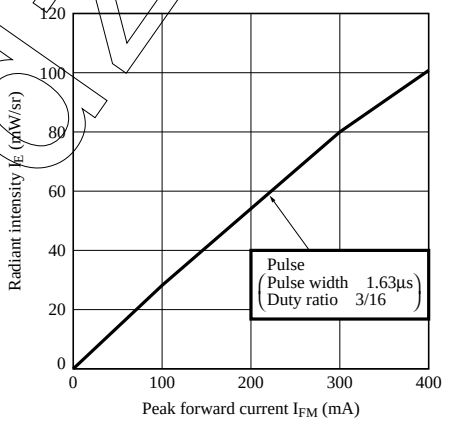


Fig.6 Radiation Diagram

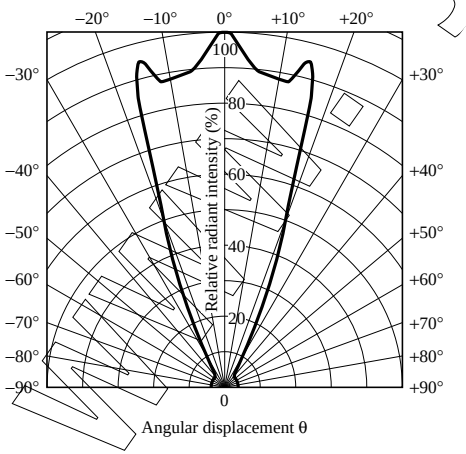


Fig.7 Recommended Circuit(GL1F20)

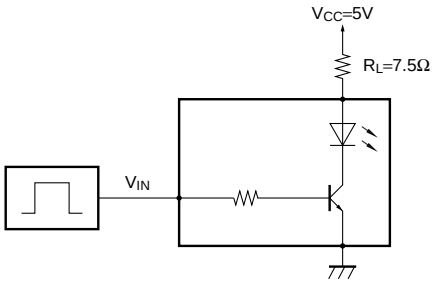


Fig.8 Recommended Circuit(GL1F201)

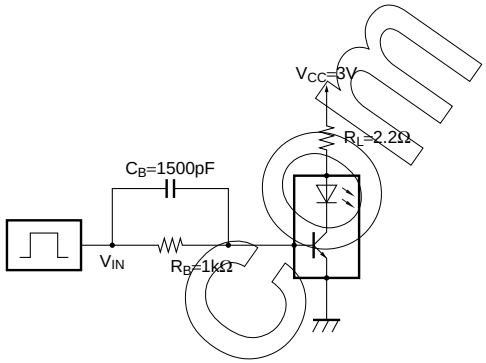
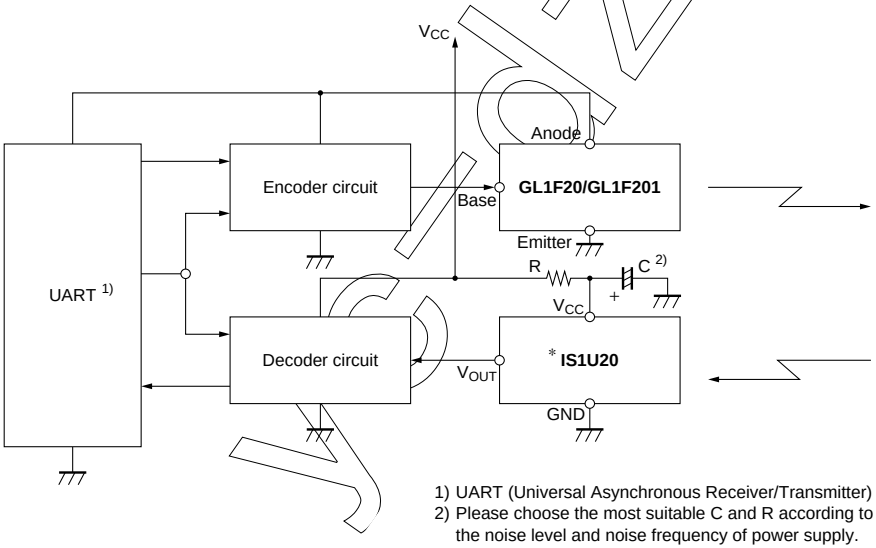


Fig.9 Example of Infrared Data Communication System



1) UART (Universal Asynchronous Receiver/Transmitter)
2) Please choose the most suitable C and R according to the noise level and noise frequency of power supply.
Example : C=47µF, R=47Ω

∗ We recommended to use **IS1U20** as detecting device.

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- Office automation equipment
- Telecommunication equipment [terminal]
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- Industrial control
- Audio visual equipment
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