

# GL1F20

## Infrared Communication (IrDA1.0 Compatible) Infrared Emitting Diode

### ■ Features

1. IrDA1.0 compatible infrared emitting diode  
(Transmission rate : 2.4 to 115.2kbps)
2. Built-in infrared emitting diode circuit
3. Recommended use in combination with detector (IS1U20)

### ■ Applications

1. Personal computers
2. Portable information terminal equipment
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 78.1 μs, Duty ratio=3/16

\*2 For MAX. 3 seconds at the position of 2 mm from the resin edge

### ■ Electro-optical Characteristics

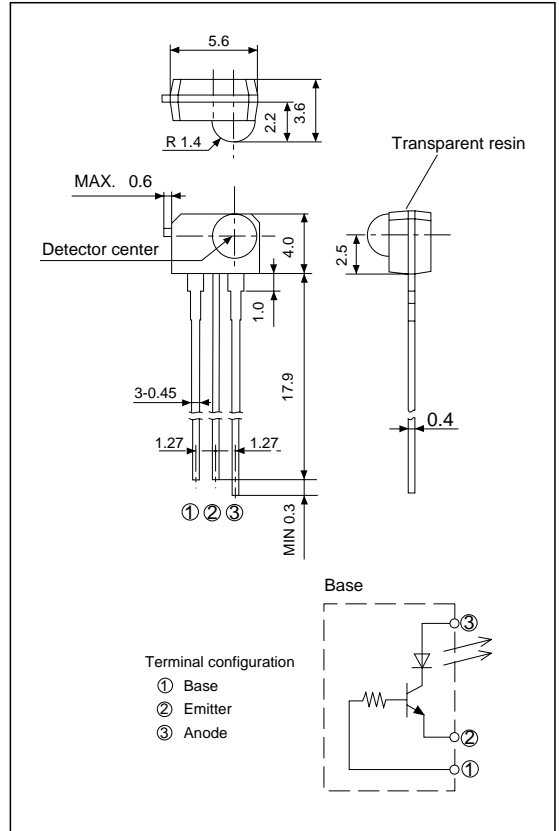
(Ta=25 °C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Driving voltage	$V_{CC}$	-	4.75	-	5.25	V
High level input voltage	$V_{IH}$	-	4.5	-	$V_{CC}$	V
Low level input voltage	$V_{IL}$	-	-	-	0.4	V
Peak emission wavelength	$\lambda_p$	$I_F = 20\text{mA}$	850	870	900	nm
Radiant intensity	$I_E$	$V_{CC} = 5\text{V}, R_L = 7.5\Omega$	40	-	350	mW/sr
Light pulse width	$t_w$	$V_{in} = 4.5\text{V}$	1.41	1.6	2.71	μs
Light rise time	$t_r$	$t_{win} = 1.63\ \mu\text{s}, \text{Duty ratio} : 3/16$	-	0.23	0.6	μs
Light fall time	$t_f$	$\phi \leq 15^\circ, *3$	-	0.17	0.6	μs
Input current	$I_{IH}$	$V_{in} = 4.5\text{V}$	1.0	-	3.0	mA
Half intensity wavelength	$\Delta \lambda$	$I_F = 20\text{mA}$	-	40	-	nm
Half intensity angle	$\Delta \theta$	$I_F = 20\text{mA}$	-	± 20	-	°

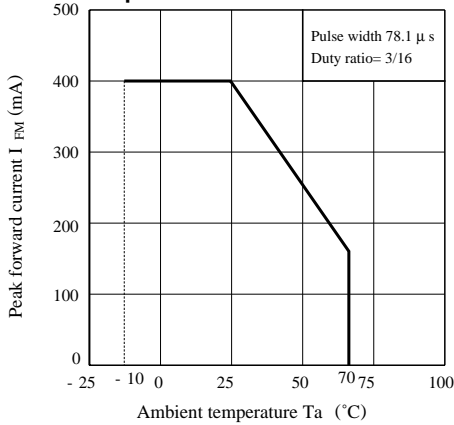
\*3 Direction of mechanical axis of the lens portion of the element :  $\phi = 0^\circ$

### ■ Outline Dimensions

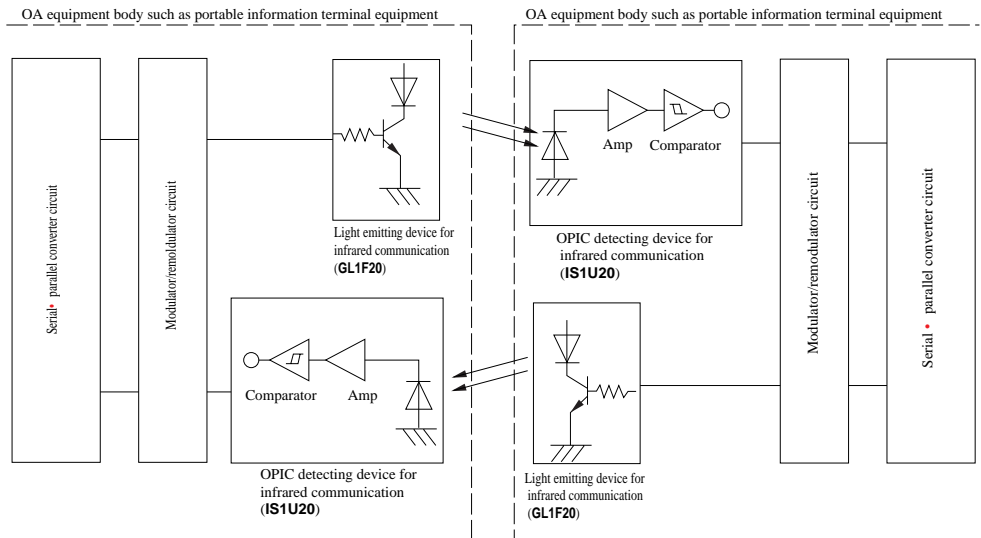
(Unit : mm)



**Fig. 1 Peak Forward Current vs. Ambient Temperature**

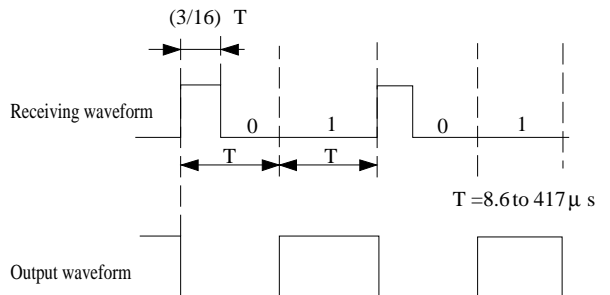


**■ Infrared Communication Terminal System Configuration Using GL1F20/IS1U20**



**■ General Descriptions of IrDA1.0 System**

- Transmission rate : 2.4k to 115.2kbps
- Modulation system : SIR
- Receiving distance : 1 m
- Transmitting wavelength : 850 to 900 nm
- Receiving waveform : As shown in the right drawing
- Output waveform : As shown in the right drawing



● Please refer to the chapter "Precautions for Use". (Page 78 to 93)