

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)

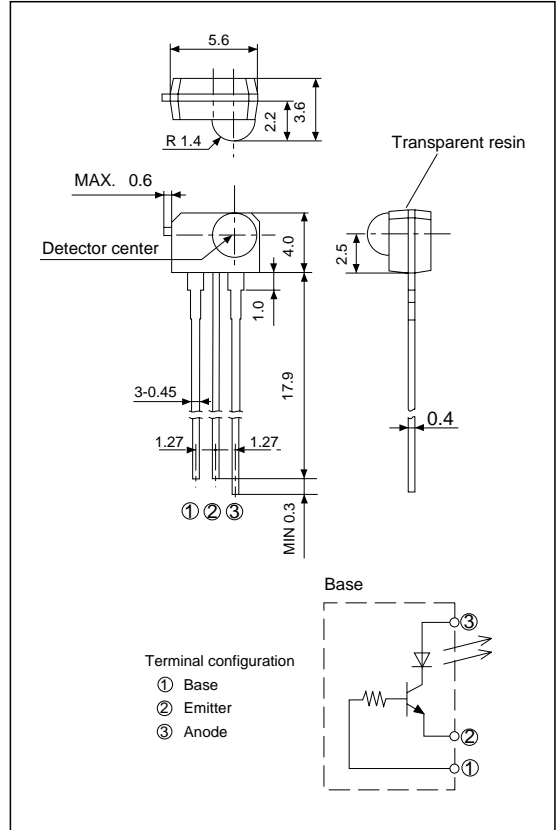
Parameter	Symbol	Rating	Unit
Forward current	I_F	50	mA
^{*1} Peak forward current	I_{FM}	400	mA
Operating temperature	T_{opr}	- 10 to + 70	°C
Storage temperature	T_{stg}	- 20 to + 85	°C
^{*2} Soldering temperature	T_{sol}	260	°C

^{*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

■ Outline Dimensions

(Unit : mm)



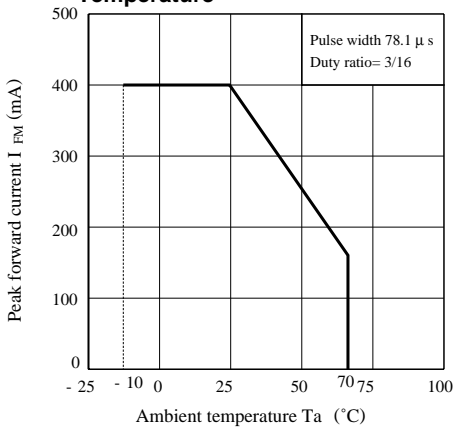
■ Electro-optical Characteristics

(Ta=25 °C)

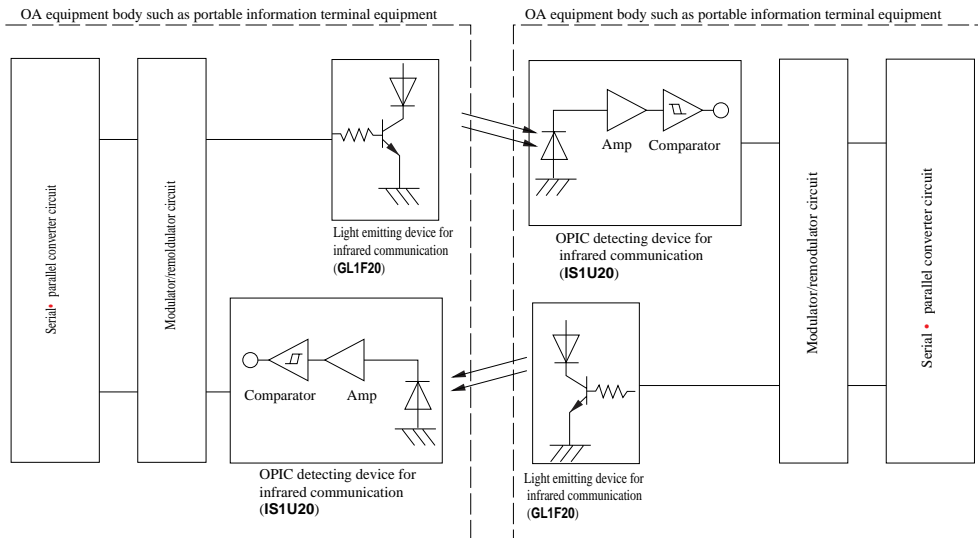
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Driving voltage	V_{CC}	-	4.75	-	5.25	V
High level input voltage	V_{IH}	-	4.5	-	V_{CC}	V
Low level input voltage	V_{IL}	-	-	-	0.4	V
Peak emission wavelength	λ_p	$I_F = 20\text{mA}$	850	870	900	nm
Radiant intensity	I_E	$V_{CC} = 5\text{V}, R_L = 7.5\Omega$	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 : $\phi = 0^\circ$

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

