

GL496

High Speed Infrared Emitting Diode

■ Features

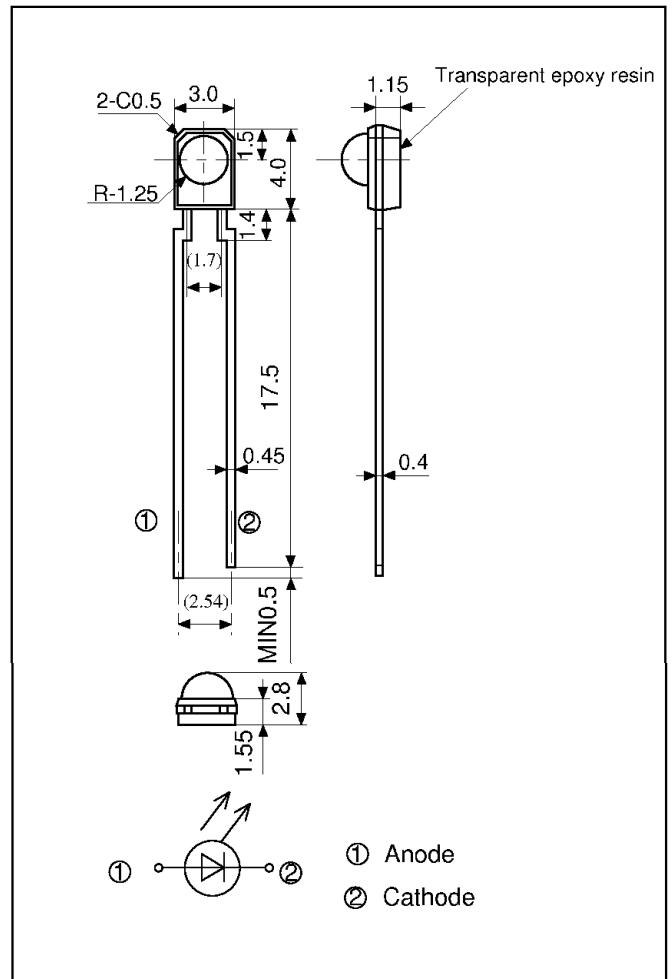
1. High speed response (response frequency : 40MHz)
2. Peak emission wavelength λ_p : TYP. 880 nm
3. Half intensity angle $\Delta\theta$: $\pm 22^\circ$
4. Lead bending type may be used.

■ Applications

1. AV equipment
2. Personal computers
3. Portable information terminal equipment

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Forward current	I_F	50	mA
*1 Peak forward current	I_{FM}	0.5	A
Reverse voltage	V_R	4	V
Power dissipation	P	87.5	mW
Operating temperature	T_{opr}	- 25 to + 85	°C
Storage temperature	T_{stg}	- 40 to + 90	°C
*2 Soldering temperature	T_{sol}	260	°C

*1 Pulse width 100 μ s, Duty ratio=0.01

*2 For MAX. 5 seconds at the position of 1.4 mm from the resin edge

GL514/GL513F

TO-18 Type Infrared Emitting Diode

■ Features

- Output : **GL514** Φ_c MIN. 3.31mW at
 $I_F = 100\text{mA}$
GL513F Φ_c MIN. 1.44mW at
 $I_F = 100\text{mA}$
- Beam angle : **GL514** $\Delta\theta$: TYP. $\pm 7^\circ$
GL513F $\Delta\theta$: TYP. $\pm 50^\circ$
- To- 18 type standard package
- High reliability, long operation life

■ Applications

- Optoelectronic switches
- Smoke detectors
- Infrared applied systems

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Power dissipation	P	250	mW
Forward current	I_F	150	mA
*1 Peak forward current	I_{FM}	2	A
Reverse voltage	V_R	6	V
Operating temperature	T_{opr}	- 40 to + 125	°C
Storage temperature	T_{stg}	- 55 to + 125	°C
*2 Soldering temperature	T_{sol}	260	°C

*1 Pulse width $\leq 200\mu\text{s}$

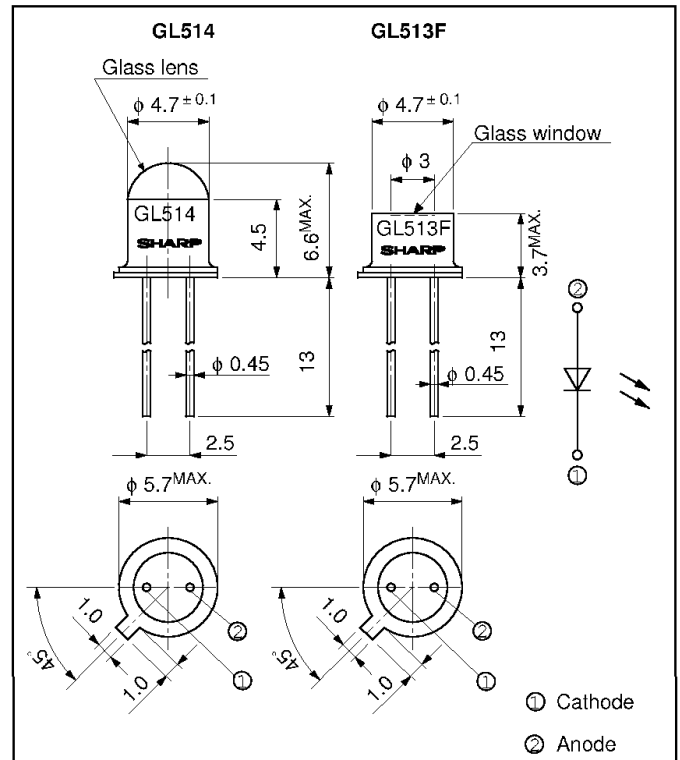
Duty ratio = 0.01

*2 For 10 seconds at the position of 1.3mm from the bottom face of can package.

■ Electro-optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	$I_F = 100\text{mA}$	-	1.35	1.6	V
Peak forward voltage	V_{FM}	$I_{FM} = 1.5\text{A}$	-	2.75	4.0	V
Reverse current	I_R	$V_R = 5\text{V}$	-	-	100	μA
Terminal capacitance	C_t	$V = 0, f = 1\text{MHz}$	-	70	-	pF
*3 Radiant flux	GL514	$I_F = 100\text{mA}$	3.31	5.35	10.0	mW
	GL513F		1.44	2.88	-	mW
Peak emission wavelength	λ_p	$I_F = 100\text{mA}$	-	950	-	nm
Half intensity wavelength	$\Delta\lambda$	$I_F = 100\text{mA}$	-	45	-	nm

■ Outline Dimensions (Unit : mm)



GL537/GL538

φ 5mm Resin Mold Type Infrared Emitting Diode

■ Features

- High output power
 I_F : TYP. 30mW/sr at $I_F = 50\text{mA}$ (**GL538**)
- Beam angle
GL538 $\Delta\theta$: TYP. $\pm 13^\circ$
GL537 $\Delta\theta$: TYP. $\pm 25^\circ$
- φ 5mm epoxy resin package

■ Applications

- Infrared remote controllers for TVs, VCRs, audio equipment and air conditioners

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Power dissipation	P	150	mW
Forward current	I_F	100	mA
*1 Peak forward current	I_{FM}	1	A
Reverse voltage	V_R	6	V
Operating temperature	T_{opt}	- 25 to + 85	°C
Storage temperature	T_{stg}	- 40 to + 85	°C
*2 Soldering temperature	T_{sol}	260	°C

*1 Pulse width $\leq 100\mu\text{s}$, Duty ratio = 0.01

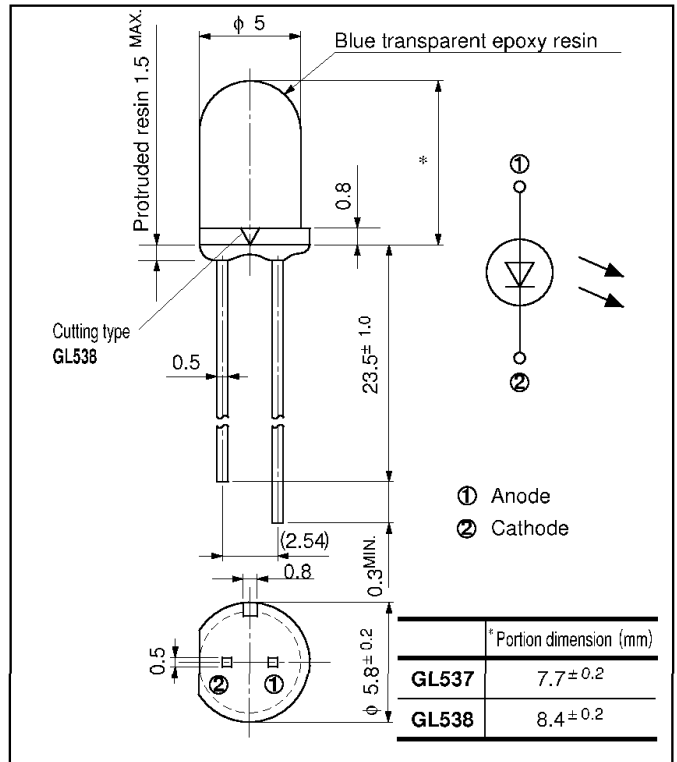
*2 For 3 seconds at the position of 2.6mm from the bottom face of resin package.

■ Electro-optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	$I_F = 50\text{mA}$	-	1.3	1.5	V
Peak forward voltage	V_{FM}	$I_{FM} = 0.5\text{A}$	-	1.9	3.0	V
Reverse current	I_R	$V_R = 3\text{V}$	-	-	10	μA
Peak emission wavelength	λ_P	$I_F = 5\text{mA}$	-	950	-	nm
Half intensity wavelength	$\Delta\lambda$	$I_F = 5\text{mA}$	-	45	-	nm
*3 Radiation intensity	GL537	$I_F = 50\text{mA}$	6	13	-	mW/sr
	GL538		15	30	-	
Terminal capacitance	C_t	$V_R = 0, f = 1\text{kHz}$	-	50	-	pF
Response frequency	f_c	-	-	300	-	kHz
Half intensity angle	GL537	$I_F = 20\text{mA}$	-	± 25	-	°
	GL538		-	± 13	-	

*3 I_{II} : Value obtained by converting the value in power of radiant fluxes emitted at the solid angle of 0.01 sr (steradian) in the direction of mechanical axis of the lens portion into 1 sr of all those emitted from the light emitting diode.

■ Outline Dimensions (Unit : mm)



GL550/GL551

High Speed Infrared Emitting Diode

■ Features

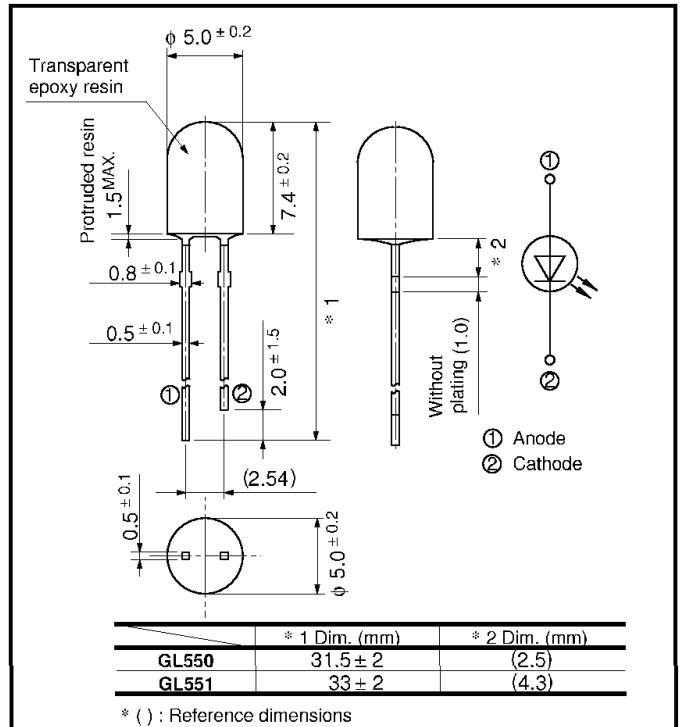
1. High speed response
Response frequency f_c : TYP. 12MHz
2. Intermediate beam angle and narrow beam angle
GL550 half intensity angle : TYP. $\pm 22^\circ$
GL551 half intensity angle : TYP. $\pm 10^\circ$
3. High output type optical output : TYP. 15mW

■ Applications

1. Audio equipment
2. AV equipment

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Forward current	I_F	100	mA
^{*1} Peak forward current	I_{FM}	1	A
Reverse voltage	V_R	4	V
Power dissipation	P	190	mW
Operating temperature	T_{opr}	- 20 to + 85	$^\circ\text{C}$
Storage temperature	T_{sig}	- 30 to + 100	$^\circ\text{C}$
^{*2} Soldering temperature	T_{sol}	260	$^\circ\text{C}$

*1 Pulse width 100 μ s, Duty ratio=0.01

*2 For MAX. 3 seconds at the position of 3.0 mm from the resin edge

GL4800

Thin Type Infrared Emitting Diode

■ Features

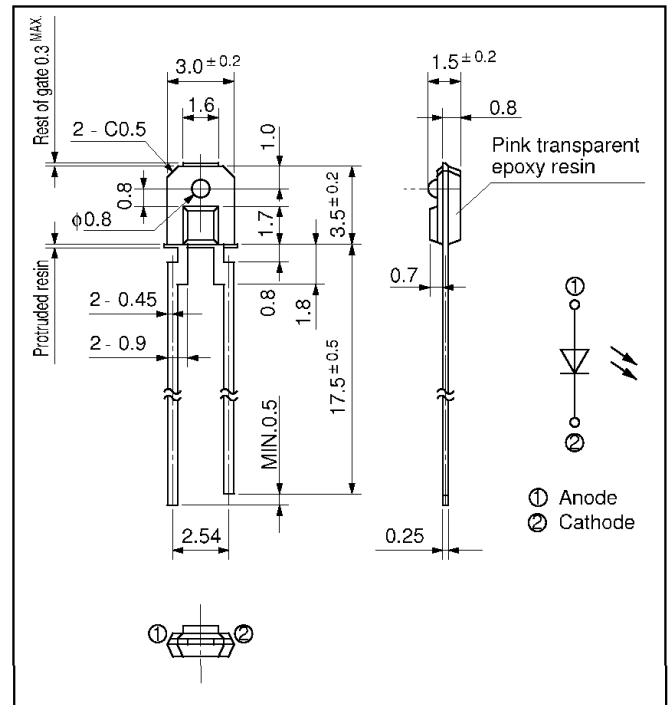
1. Thin type (Thickness : 1.5mm)
2. Beam angle ($\Delta\theta$: TYP. $\pm 30^\circ$)
3. Radiant flux
(Φ_e : MIN. 0.7mW at $I_F = 20\text{mA}$)
4. Epoxy resin package

■ Applications

1. Floppy disk drives
2. Optoelectronic switches

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
Power dissipation	P	75	mW
Forward current	I_F	50	mA
*1 Peak forward current	I_{FM}	1	A
Reverse voltage	V_R	6	V
Operating temperature	T_{opr}	- 25 to + 85	°C
Storage temperature	T_{stg}	- 40 to + 85	°C
*2 Soldering temperature	T_{sol}	260	°C

*1 Pulse width $\leq 100\mu\text{s}$, Duty ratio = 0.01

*2 For 3 seconds at the position of 1.8mm from the surface of resin edge.

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V
Peak forward voltage	V_{FM}	$I_{FM} = 0.5\text{A}$	-	3.0	4.0	V
Reverse current	I_R	$V_R = 3\text{V}$	-	-	10	μA
Terminal capacitance	C_t	$V_R = 0, f = 1\text{MHz}$	-	70	-	pF
Frequency response	f_c	-	-	300	-	kHz
Radiant flux	Φ_e	$I_F = 20\text{mA}$	0.7	1.6	3.0	mW
Peak emission wavelength	λ_p	$I_F = 5\text{mA}$	-	950	-	nm
Half intensity wavelength	$\Delta\lambda$	$I_F = 5\text{mA}$	-	45	-	nm

* In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device."

GL480/GL480Q GL483Q

Infrared Emitting Diode

■ Features

1. Narrow beam angle ($\Delta\theta$: TYP. $\pm 13^\circ$)
2. Radiant flux (Φ_e : MIN. 0.7mW at $I_F = 20\text{mA}$)
3. Compact, high reliability by chip coating (GL480Q/GL483Q)
4. Long lead type (GL483Q)

■ Applications

1. Copiers
2. Floppy disk drives
3. Optoelectronic switches

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Power dissipation	P	75	mW
Forward current	I_F	50	mA
^{*1} Peak forward current	I_{FM}	1	A
Reverse voltage	V_R	6	V
Operating temperature	T_{opr}	- 25 to + 85	°C
Storage temperature	T_{stg}	- 40 to + 85	°C
^{*2} Soldering temperature	T_{sol}	260	°C

*1 Pulse width $\leq 100 \mu\text{s}$, Duty ratio = 0.01

*2 For 3 seconds at the position of 1.4mm from the bottom face of resin package.

■ Outline Dimensions

(Unit : mm)

