

■ Dimensions

(Unit: mm)

Recommended Soldering Pattern

Note 1. The shaded portion in the above figure may cause shorting. Do not wire in this portion.
 Note 2. The dimensional tolerance for the recommended soldering pattern is ± 0.1 mm.

Internal Circuit

Unless otherwise specified, the dimensional tolerance is ± 0.15 mm.

Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

■ Features

- Ultra-compact model.
- PCB surface mounting type.

■ Absolute Maximum Ratings (Ta=25°C)

Item		Symbol	Rated value	Unit
Emitter	Forward current	IF	50 ^{*1}	mA
	Reverse voltage	VR	6	V
Detector	Collector-Emitter voltage	VCEO	35	V
	Emitter-Collector voltage	VECO	6	V
	Collector current	IC	20	mA
	Collector dissipation	PC	75 ^{*1}	mW
Total allowable loss		Ptot	100 ^{*1}	mW
Operating temperature		Topr	-25 to 85	°C
Storage temperature		Tstg	-40 to 100	°C
Soldering temperature		Tsol	260 ^{*2}	°C

- *1. Refer to the temperature rating chart if the ambient temperature exceeds 25°C.
 *2. Complete soldering within 5 seconds.
 For reflow soldering, use the conditions given on page 4.

■ Electrical and Optical Characteristics (Ta=25°C)

Item	Symbol	Value			Unit	Condition	
		MIN.	TYP.	MAX.			
Emitter	Forward current	V _F	---	1.2	1.4	V	I _F = 20mA
	Reverse voltage	I _R	---	---	10	μA	VR = 6V
	Peak emission wavelength	λ _P	---	950	---	nm	---
Detector	Light current	I _L	40	85	130	μA	I _F = 4 mA, V _{CE} = 2V, Aluminum-deposited surface, d = 1 mm*
	Dark current	I _D	---	1	100	nA	V _{CE} = 20V, 0lx
	Leakage current	I _{LEAK}	---	---	500	nA	I _F = 4mA, V _{CE} = 2V, with no reflection
	Collector-Emitter saturated voltage	V _{CE (sat)}	---	---	---	V	---
	Peak spectral sensitivity wavelength	λ _P	---	930	---	nm	---
Rising time	t _r	---	20	100	μA	V _{CC} = 2 V, R _L = 1 kΩ, I _L = 100 μA, d = 1 mm*	
Falling time	t _f	---	20	100	μA	V _{CC} = 2 V, R _L = 1 kΩ, I _L = 100 μA, d = 1 mm*	

* Refer to Fig 12. Light Current Measurement Setup Diagram on page 2.

Engineering Data

Fig 1. Forward Current vs. Collector Dissipation Temperature Rating

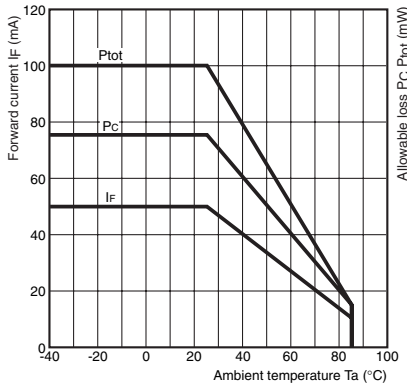


Fig 4. Light Current vs. Collector-Emitter Voltage Characteristics (Typical)

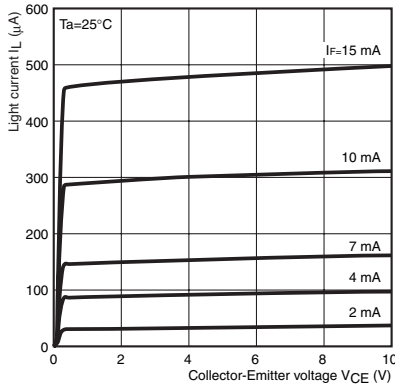


Fig 7. Response Time vs. Load Resistance Characteristics (Typical)

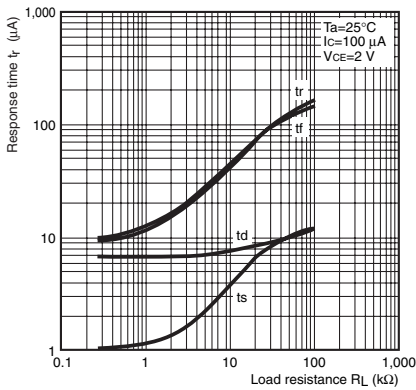


Fig 10. Relative Light Current vs. Card Moving Distance Characteristics (Typical)

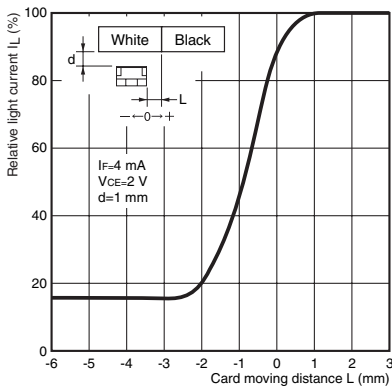


Fig 2. Forward Current vs. Forward Voltage Characteristics (Typical)

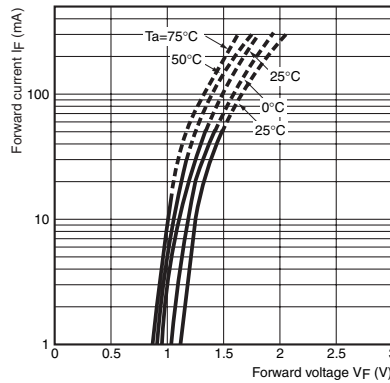


Fig 5. Relative Light Current vs. Ambient Temperature Characteristics (Typical)

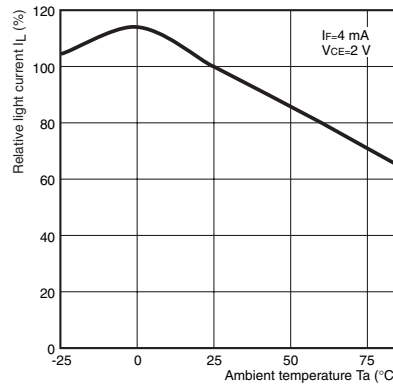


Fig 8. Relative Light Current vs. Distance Characteristics (Typical)

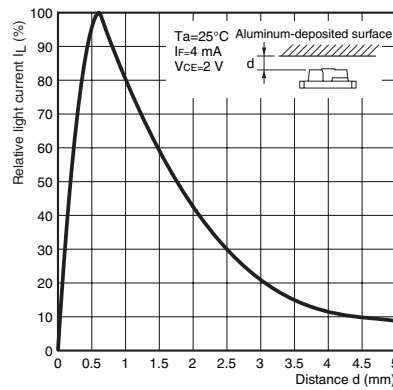


Fig 11. Response Time Measurement Circuit

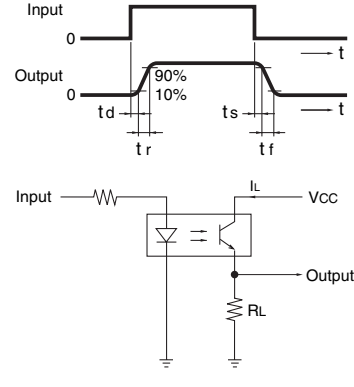


Fig 3. Light Current vs. Forward Current Characteristics (Typical)

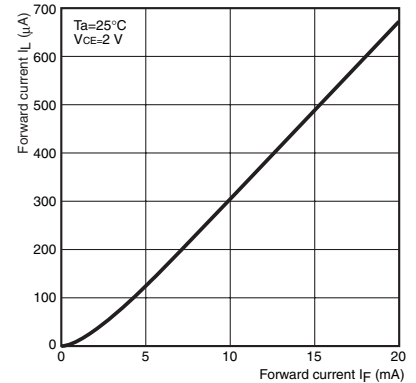


Fig 6. Dark Current vs. Ambient Temperature Characteristics (Typical)

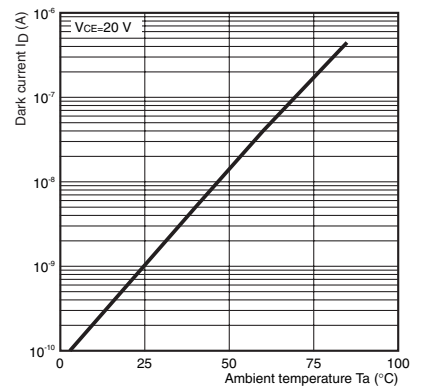


Fig 9. Relative Light Current vs. Card Moving Distance Characteristics (Typical)

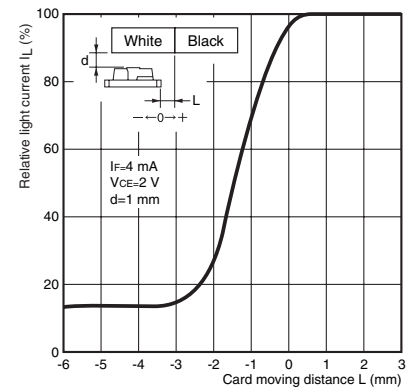
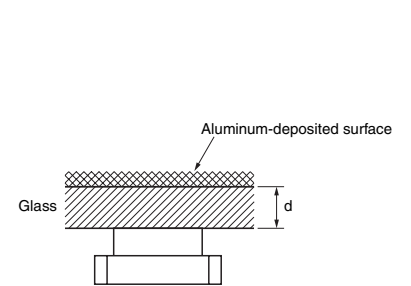


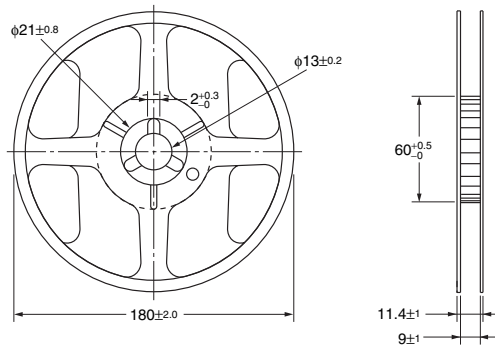
Fig 12. Light Current Measurement Setup Diagram



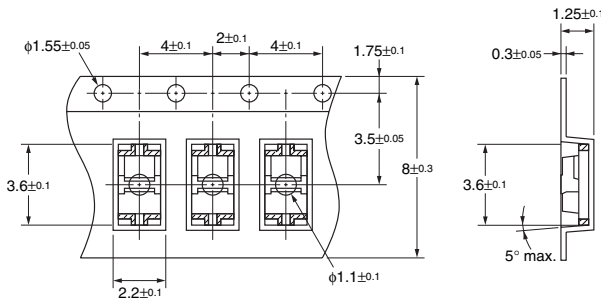
EE-SY199

■ Tape and Reel

● Reel Dimension (Unit: mm)

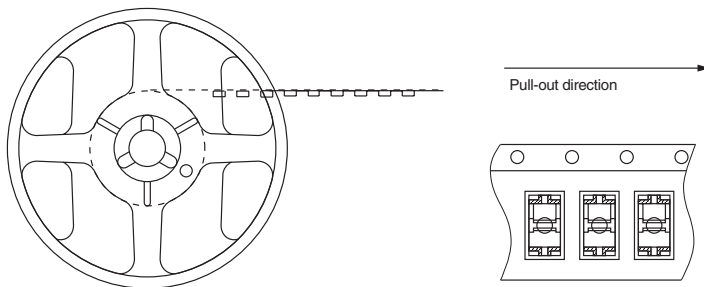


● Tape Dimension (Unit: mm)



● Part Mounting Direction

- The devices are oriented in the rectangular holes in the carrier tape so that the edge with the LED faces the round feeding holes.



● Tape Quantity

2,000 pcs./reel

● Packing Specifications

- One reel is sealed in an aluminum-laminated bag.
- The model number, lot number, and quantity are given on the label.