

# GP2L23L/GP2L23R

## Compact, Thin Type Photointerrupter

### ■ Features

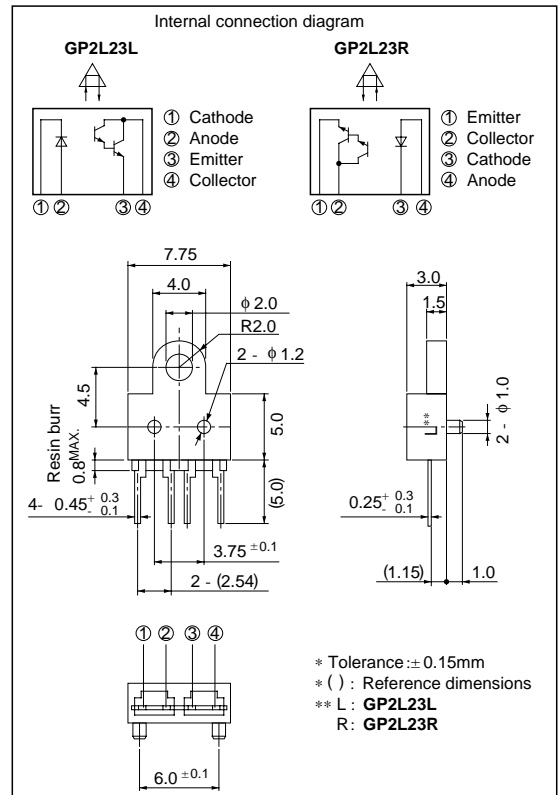
1. Correspond to prism system
2. Compact and thin (Thickness : 3mm)

### ■ Applications

1. Specified for tape-end detection for digital audio tape recorders

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I <sub>F</sub>	50	mA
	*1 Peak forward current	I <sub>FM</sub>	1	A
	Reverse voltage	V <sub>R</sub>	6	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	V <sub>CEO</sub>	35	V
	Emitter-collector voltage	V <sub>ECO</sub>	6	V
	Collector current	I <sub>C</sub>	40	mA
	Collector power dissipation	P <sub>C</sub>	75	mW
Operating temperature		T <sub>opr</sub>	- 20 to + 85	°C
Storage temperature		T <sub>stg</sub>	- 40 to + 100	°C
*2 Soldering temperature		T <sub>sol</sub>	260	°C

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

\*2 For 3 seconds

## Electro-optical Characteristics

(T<sub>a</sub> = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 20mA	-	1.2	1.4	V	
	Peak forward voltage	V <sub>FM</sub>	I <sub>FM</sub> = 0.5A	-	3	4	V	
Output	Reverse current	I <sub>R</sub>	V <sub>R</sub> = 3V	-	-	10	μA	
Transfer characteristics	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> = 10V	-	-	10 <sup>-6</sup>	A	
	*3Collector current	I <sub>C</sub>	V <sub>CE</sub> = 5V, I <sub>F</sub> = 20mA	0.8	-	15	mA	
	Response time	Rise time	t <sub>r</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 10mA	-	80	400	μs
		Fall time	t <sub>f</sub>	R <sub>L</sub> = 100Ω, d = 13mm	-	70	350	μs
	*4Leak current	I <sub>LEAK</sub>	V <sub>CE</sub> = 5V, I <sub>F</sub> = 20mA	-	-	50	μA	

\*3 The condition and arrangement of the reflective object are shown in the following drawing

\*4 Without reflective object

### Test Condition and Arrangement for Collector Current

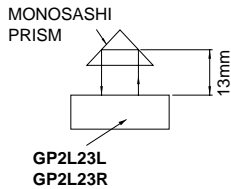


Fig. 1 Forward Current vs. Ambient Temperature

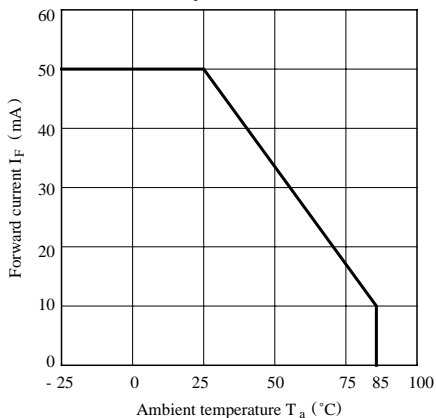
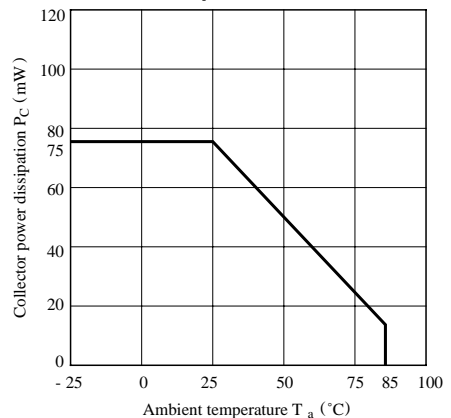
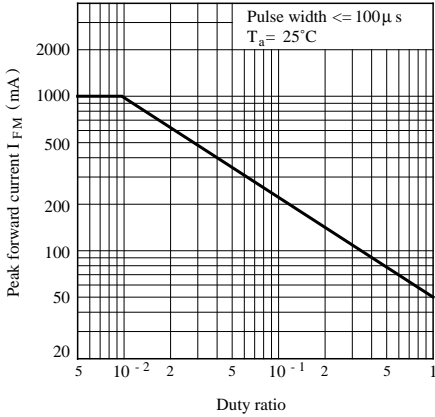


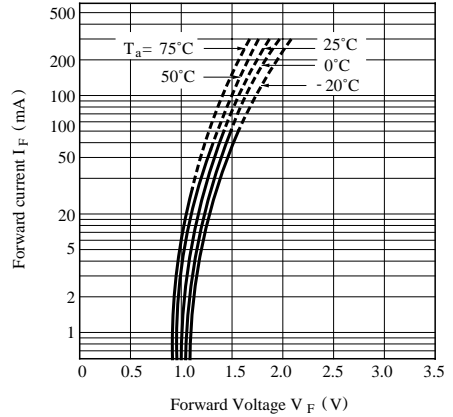
Fig. 2 Collector Power Dissipation vs. Ambient Temperature



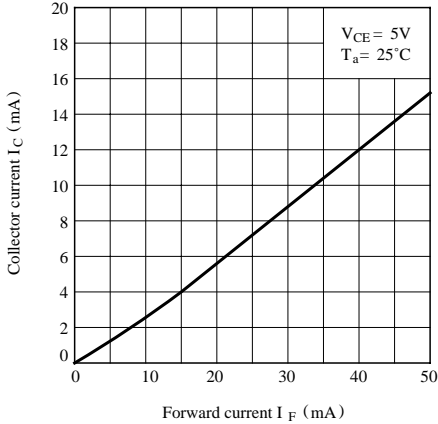
**Fig. 3 Peak Forward Current vs. Duty Ratio**



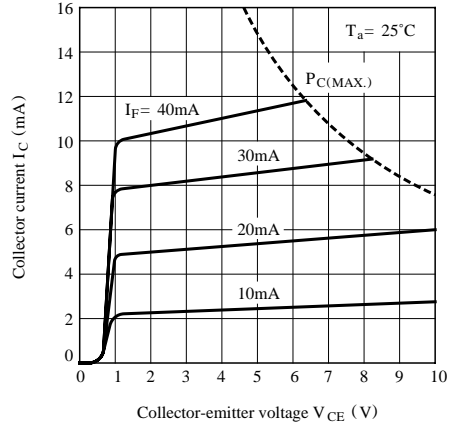
**Fig. 4 Forward Current vs. Forward Voltage**



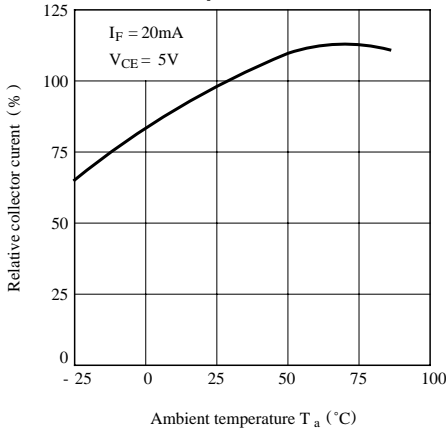
**Fig. 5 Collector Current vs. Forward Current**



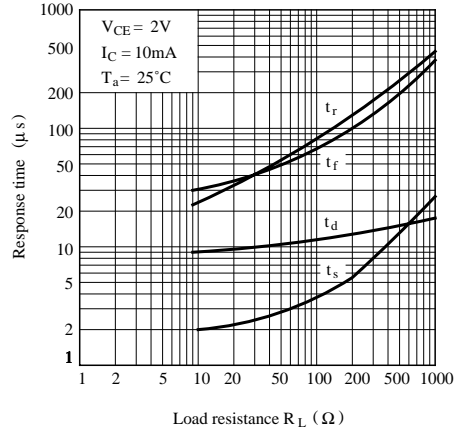
**Fig. 6 Collector Current vs. Collector-emitter Voltage**



**Fig. 7 Relative Collector Current vs. Ambient Temperature**



**Fig. 8 Response Time vs. Load Resistance**



Test Circuit for Response Time

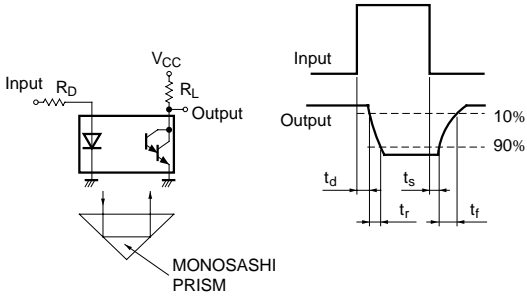


Fig. 9 Frequency Response

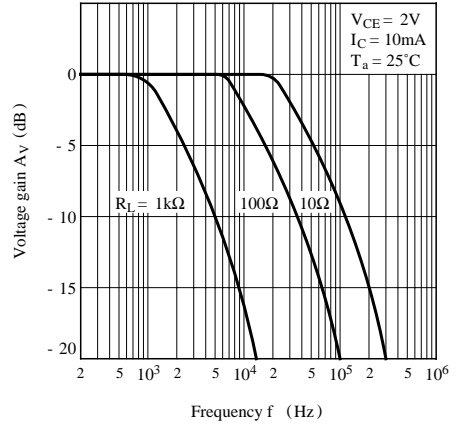
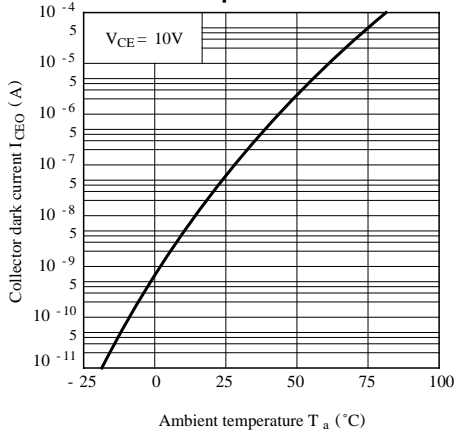


Fig.10 Collector Dark Current vs. Ambient Temperature



- Please refer to the chapter “Precautions for Use”.