

# GP2L20L/GP2L20R

## Compact, Thin Type Photointerrupter

### ■ Features

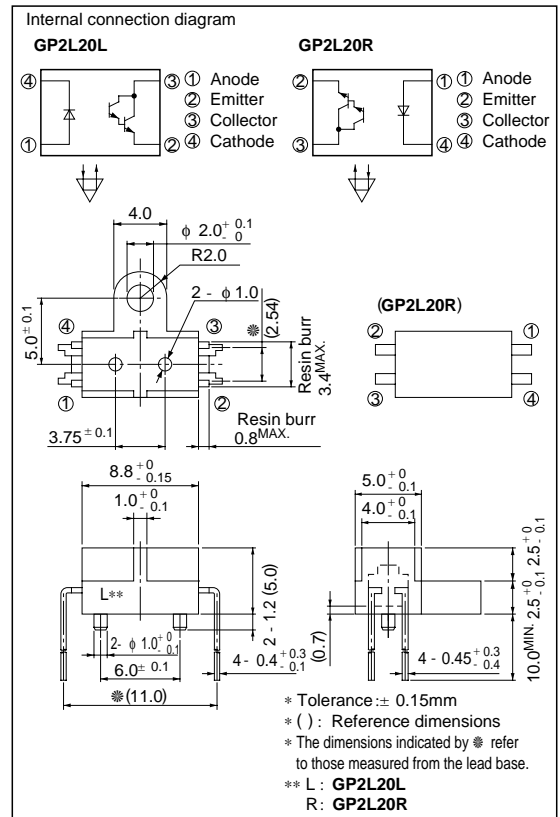
1. Correspond to DAT prism system
2. Compact and thin

### ■ Applications

1. Digital audio tape recorder

### ■ 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>	20	mA
	Collector power dissipation	P <sub>C</sub>	75	mW
Operating temperature		T <sub>opr</sub>	- 25 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 5 seconds

## Electro-optical Characteristics

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

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	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	4	V	
	Reverse current	$I_R$	$V_R = 3\text{V}$	-	-	10	$\mu\text{A}$	
Output	Collector dark current	$I_{CEO}$	$V_{CE} = 10\text{V}$	-	-	$1 \times 10^{-6}$	A	
Transfer characteristics	*3 Collector current		$I_C$	$V_{CE} = 5\text{V}, I_F = 20\text{mA}$	1	-	20	mA
	Response time	Rise time	$t_r$	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$	-	80	400	$\mu\text{s}$
		Fall time	$t_f$	$R_L = 100\ \Omega$	-	70	350	$\mu\text{s}$
	*4 Leak current		$I_{LEAK}$	$V_{CE} = 5\text{V}, I_F = 20\text{mA}$	-	-	5	$\mu\text{A}$

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

\*4 Without reflective object

### Test Condition and Arrangement for Collector Current

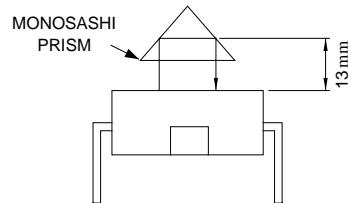


Fig. 1 Forward Current vs. Ambient Temperature

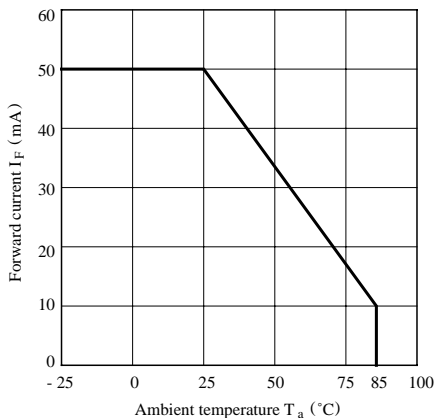


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

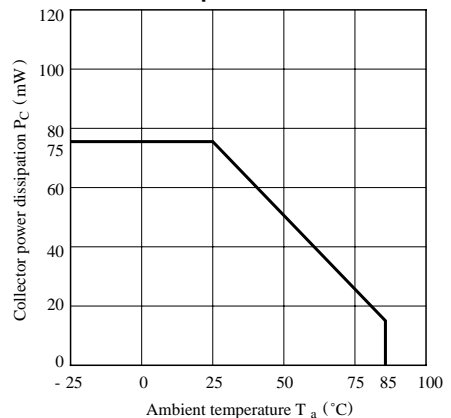


Fig. 3 Peak Forward Current vs. Duty Ratio

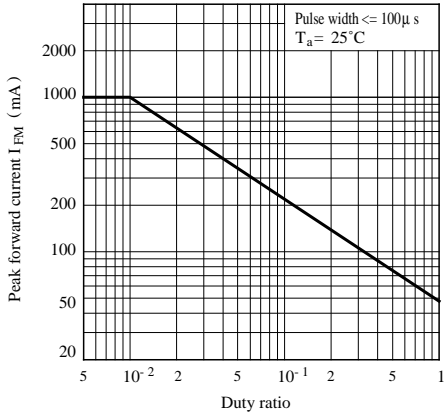


Fig. 4 Forward Current vs. Forward Voltage

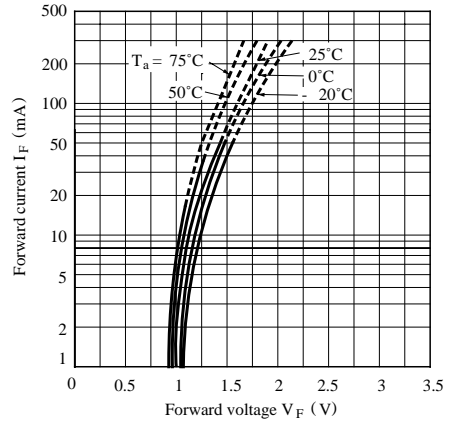


Fig. 5 Collector Current vs. Forward Current

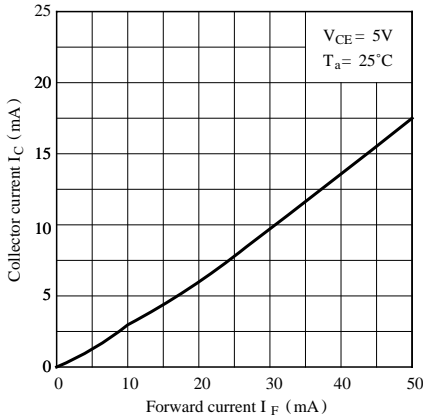


Fig. 6 Collector Current vs. Collector-Emitter Voltage

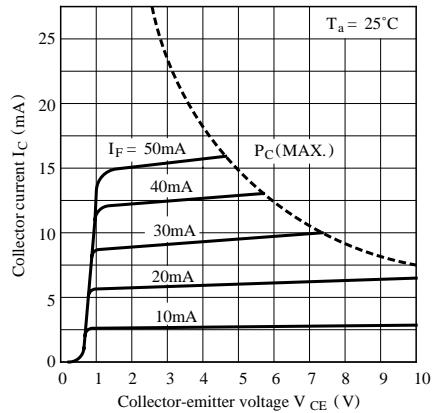


Fig. 7 Relative Collector Current vs. Ambient Temperature

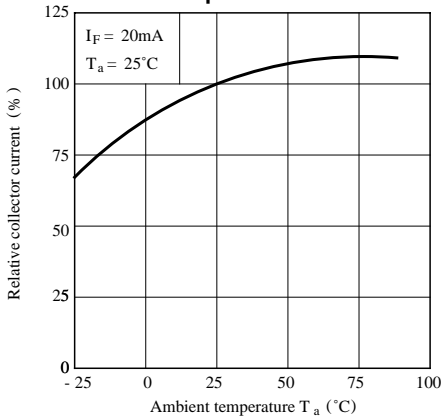
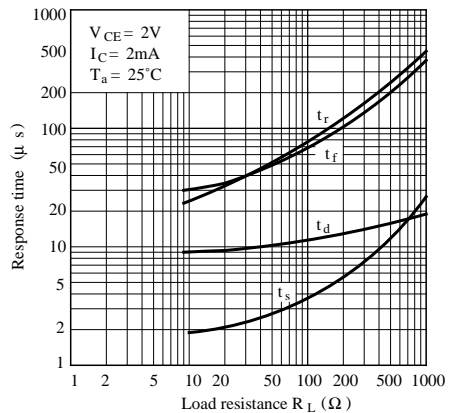
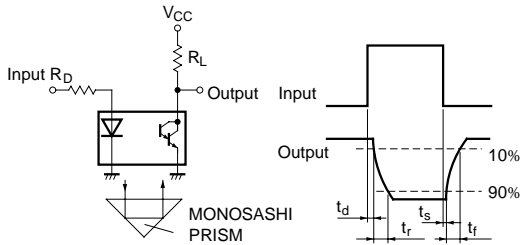


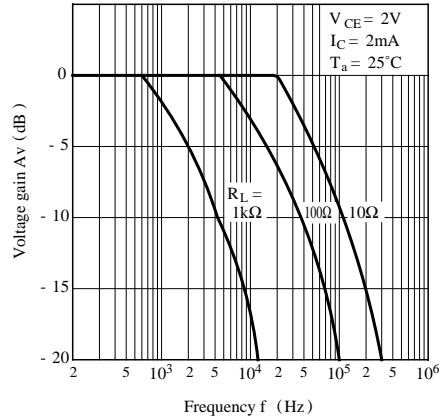
Fig. 8 Response Time vs. Load Resistance



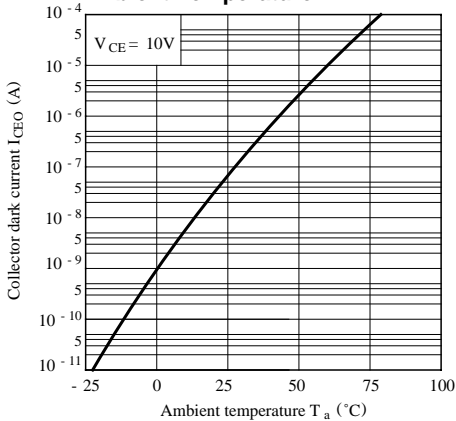
**Test Circuit for Response time**



**Fig. 9 Frequency Response**



**Fig.10 Collector Dark Current vs. Ambient Temperature**



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