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GP2L20L/GP2L20R

Compact, Thin Type Photointerrupter

■ Features

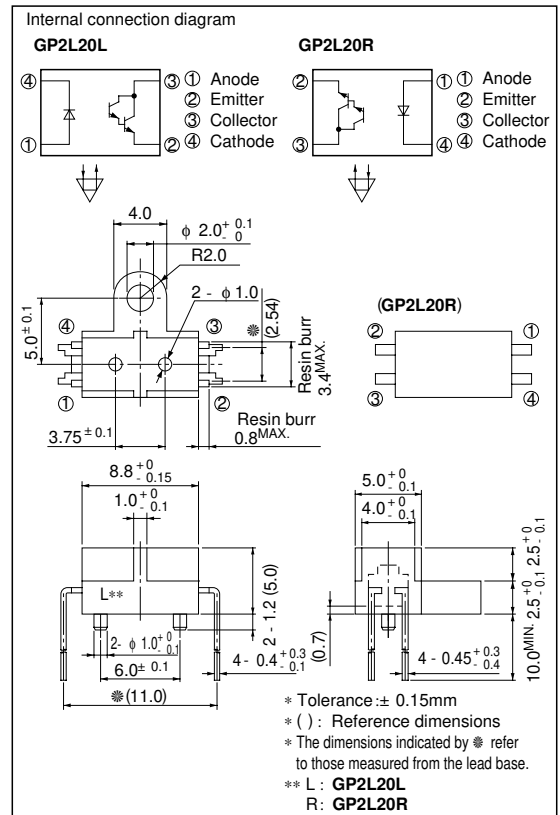
1. Correspond to DAT prism system
2. Compact and thin

■ Applications

1. Digital audio tape recorder

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I _F	50	mA
	*1 Peak forward current	I _{FM}	1	A
	Reverse voltage	V _R	6	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	V _{CEO}	35	V
	Emitter-collector voltage	V _{ECO}	6	V
	Collector current	I _C	20	mA
	Collector power dissipation	P _C	75	mW
Operating temperature		T _{opr}	- 25 to + 85	°C
Storage temperature		T _{stg}	- 40 to + 100	°C
*2 Soldering temperature		T _{sol}	260	°C

*1 Pulse width ≤ 100 μs, 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	μA	
Output	Collector dark current	I_{CEO}	$V_{CE} = 10\text{V}$	-	-	1×10^{-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	μs
		Fall time	t_f	$R_L = 100\ \Omega$	-	70	350	μs
	*4 Leak current		I_{LEAK}	$V_{CE} = 5\text{V}, I_F = 20\text{mA}$	-	-	5	μA

*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

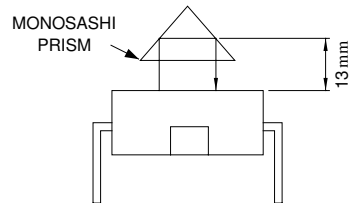


Fig. 1 Forward Current vs. Ambient Temperature

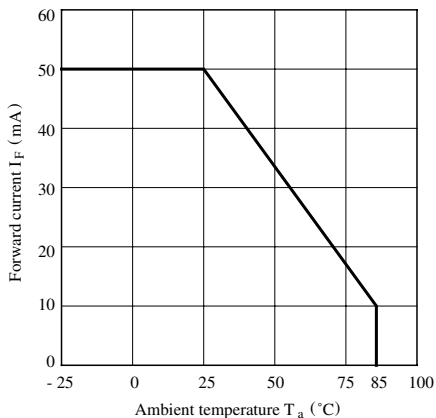


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

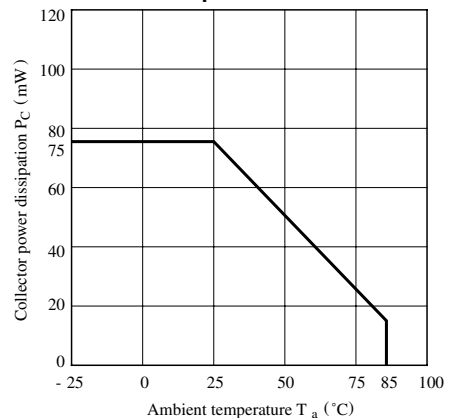


Fig. 3 Peak Forward Current vs. Duty Ratio

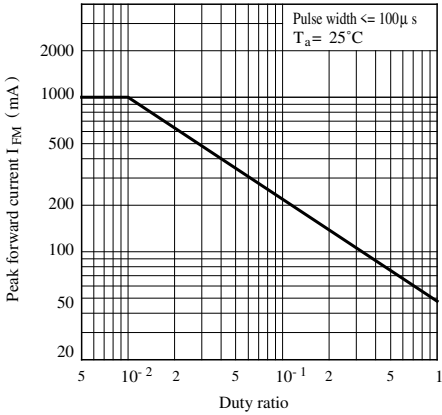


Fig. 4 Forward Current vs. Forward Voltage

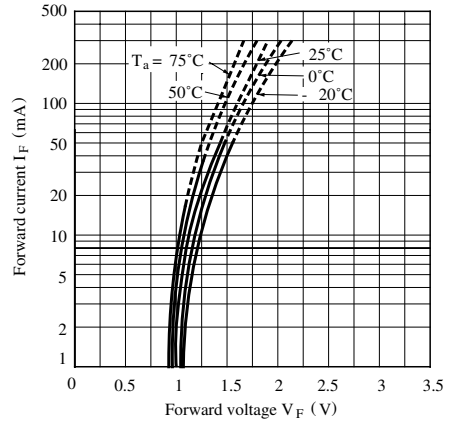


Fig. 5 Collector Current vs. Forward Current

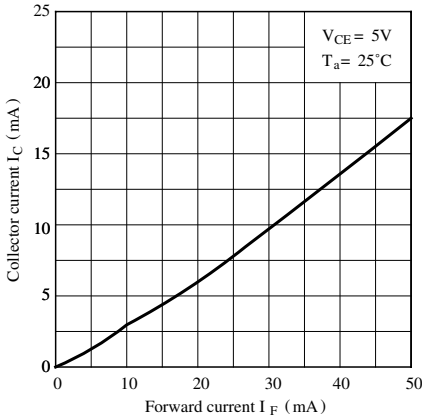


Fig. 6 Collector Current vs. Collector-Emitter Voltage

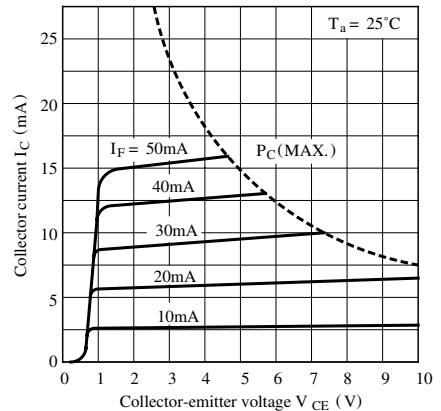


Fig. 7 Relative Collector Current vs. Ambient Temperature

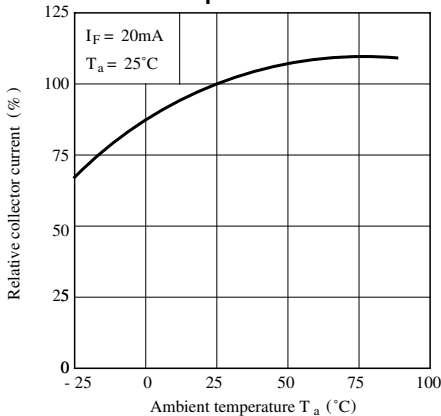
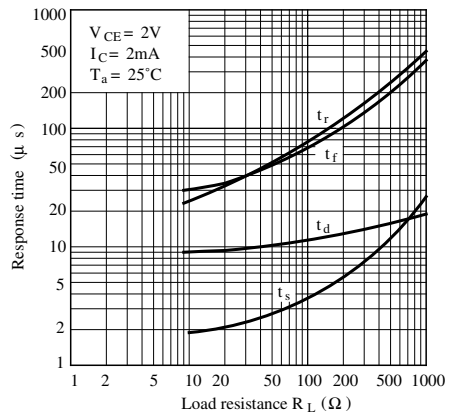


Fig. 8 Response Time vs. Load Resistance



Test Circuit for Response time

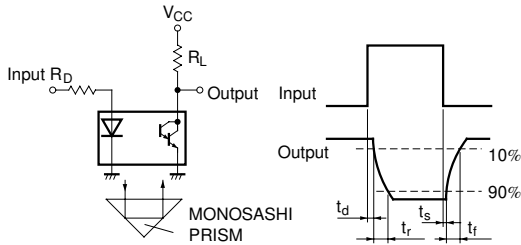


Fig. 9 Frequency Response

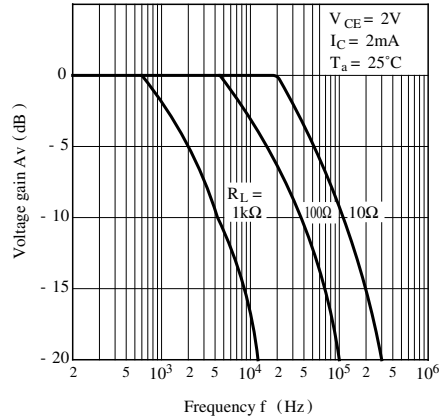
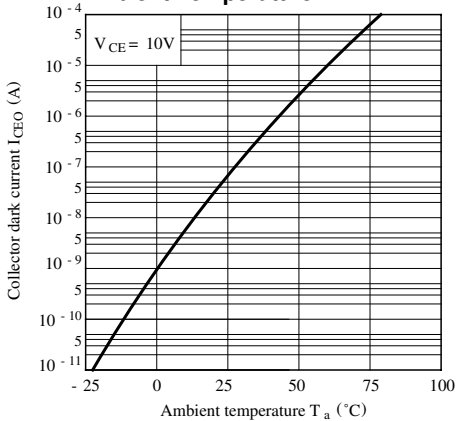


Fig.10 Collector Dark Current vs. Ambient Temperature



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

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 - Gas leakage sensor breakers
 - Alarm equipment
 - Various safety devices, etc.
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