

GP2L20R Datasheet



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DiGi Electronics Part Number	GP2L20R-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	GP2L20R
Description	PHOTOINTERRUPTER REFLEC 13MM PCB
Detailed Description	Reflective Optical Sensor 0.512" (13mm) PCB Mount

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Purchase and inquiry

Manufacturer Product Number:

GP2L20R

Series:

-

Sensing Distance:

0.512" (13mm)

Voltage - Collector Emitter Breakdown (Max):

35 V

Current - DC Forward (If) (Max):

50 mA

Response Time:

80µs, 70µs

Package / Case:

PCB Mount

Manufacturer:

Sharp Microelectronics

Product Status:

Obsolete

Sensing Method:

Reflective

Current - Collector (Ic) (Max):

20 mA

Output Type:

Photodarlington

Mounting Type:

Through Hole

Operating Temperature:

-25°C ~ 85°C

Environmental & Export classification

RoHS Status:

RoHS non-compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

1 (Unlimited)

HTSUS:

8541.49.8000

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

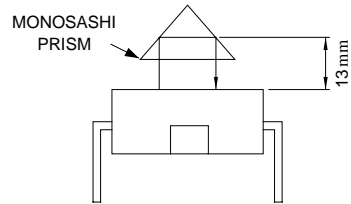


Fig. 1 Forward Current vs. Ambient Temperature

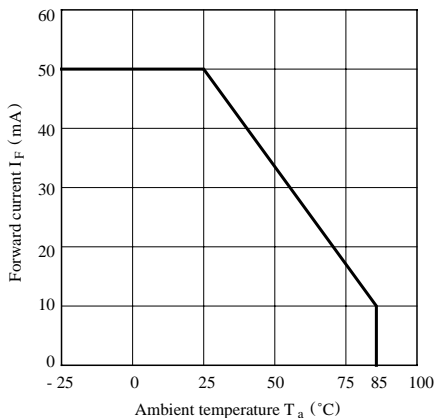


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

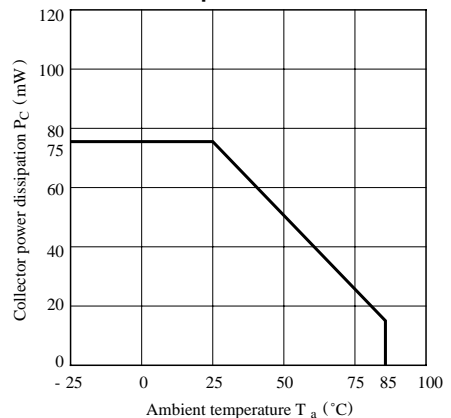


Fig. 3 Peak Forward Current vs. Duty Ratio

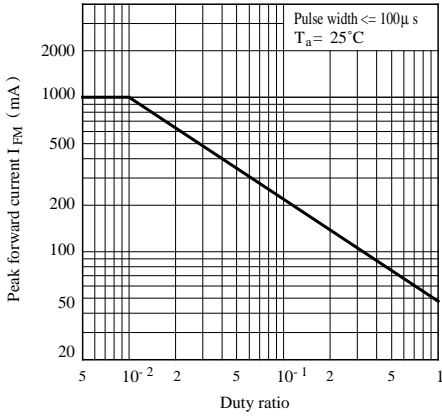


Fig. 4 Forward Current vs. Forward Voltage

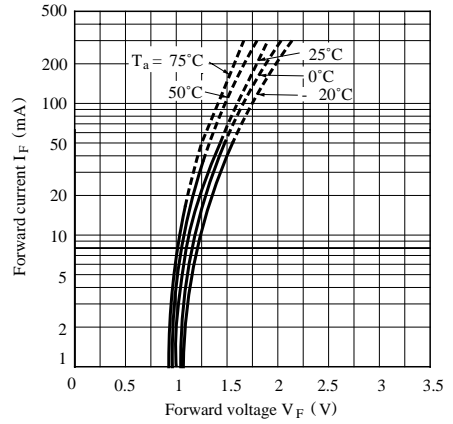


Fig. 5 Collector Current vs. Forward Current

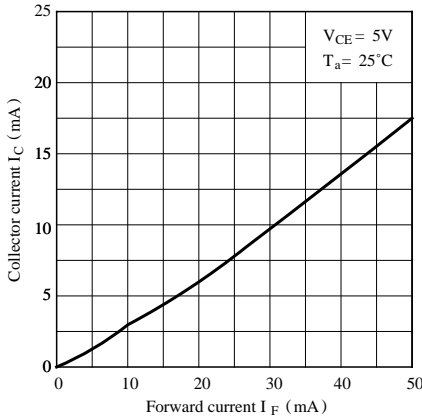


Fig. 6 Collector Current vs. Collector-Emitter Voltage

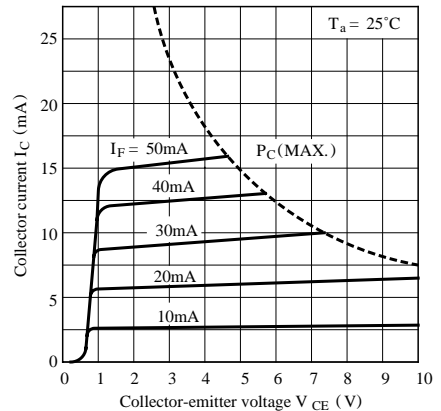


Fig. 7 Relative Collector Current vs. Ambient Temperature

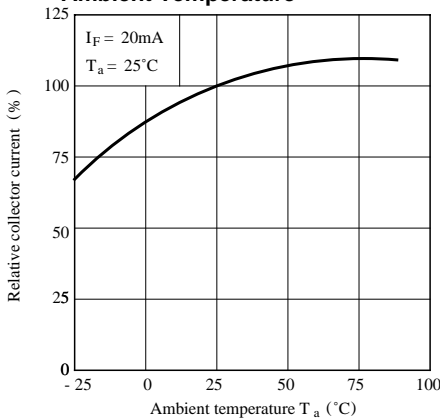
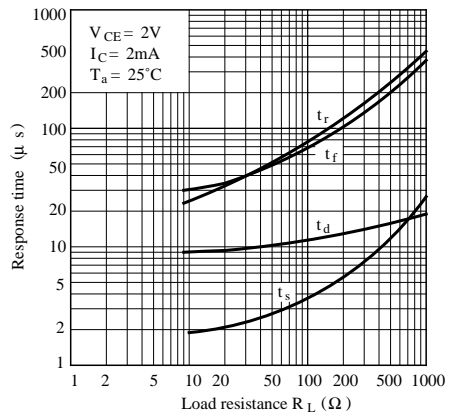


Fig. 8 Response Time vs. Load Resistance



Test Circuit for Response time

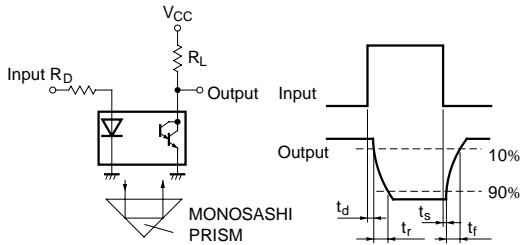


Fig. 9 Frequency Response

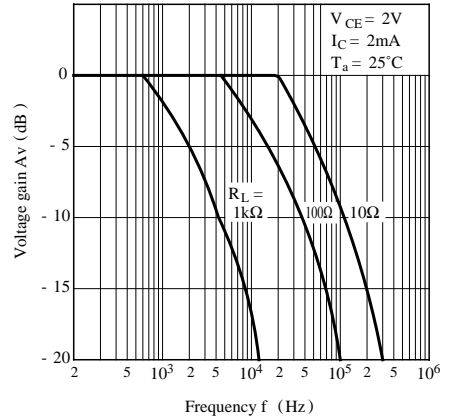
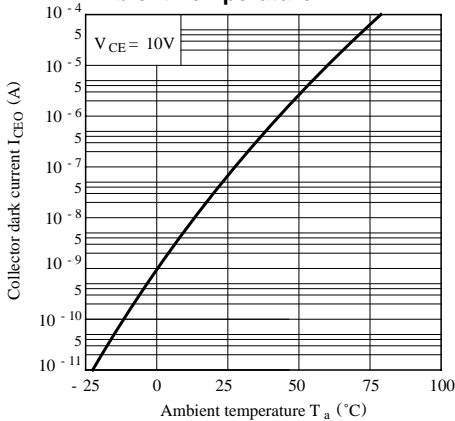


Fig.10 Collector Dark Current vs. Ambient Temperature



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

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