GP2S29

■ Features

1. Wide range of detecting distance (Detecting distance : 1 to 20mm)

2. Prism system

3. High sensitivity (S/N ratio: 75)

4. Easy circuit design in sub sequent stage due to large output

■ Applications

1. Printers

2. Facsimiles

3. DAT

4. Copiers

5. LBPs

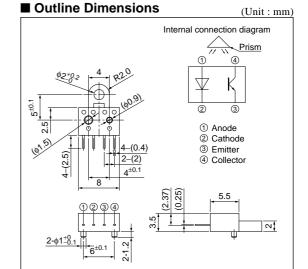
■ Absolute Maximum Ratings

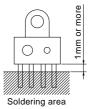
(Ta=25°C)

Parameter		Symbol	Rating	Unit	
Input	*1 Forward current	IF	50	mA	
	*2 Peak forward current	IFM	1	A	
	Reverse voltage	VR	6	V	
	*1 Power dissipation	P	75	mW	
Output	Collector-emitter voltage	Vceo	35	V	
	Emitter-collector voltage	Veco	6	V	
	Collector current	Iср	20	mA	
	*1 Collector dissipation	Pc	75	mW	
*1 Total power dissipation		Ptot	100	mW	
Operating temperature		Topr	-25 to +85	°C	
Storage temperature		Tstg	-40 to +100	°C	
*3 Soldering temperature		Tsol	260	°C	

^{*1} The derating factors of absolute maximum ratings due to ambient temperature are shown in Fig.1 to 2

Long Focal Distance, Reflective Type Photointerrupter





** Unspecified tolerance : ±0.15mm
** () : Reference dimensions

^{*2} Pulse width<=100µs, Duty ratio:0.01

^{*3} For 3s

■ Electro-optical Characteristics

■ Electro-optical Characteristics (Ta=25°C)											
Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit			
Input	Forward voltage		VF	I _F =20mA	-	1.25	1.4	V			
	Peak forward voltage		V _{FM}	$I_{FM}=0.5A$	-	3	4	V			
	Reverse current		IR	V _R =3V	-	_	10	μΑ			
Output	Collector dark current		Iceo	Vce=20V	_	_	100	nA			
Transfer charac- teristics	*4 Collector current		Ic	$V_{CE}=5V$, $I_{F}=20mA$	0.2	_	2.4	mA			
	*5 Leak current		ILEAK	Vce=5V, I _F =20mA	_	_	10	μΑ			
	Signal to noise ratio		S/N	Ic/Ileak	75	_	-	_			
	*4 Collector-emitter saturation voltage		VCE (sat)	Ic=0.1mA	_	0.1	0.4	v			
				I _F =40mA	_			v			
	Response time	Rise time	tr	Vce=2V, Ic=0.5mA	-	38	90	μs			
		Fall time	tf	$R_L=1k\Omega$, $d=8mm$	_	48	110	μs			

^{*4} Refer to Fig.13

Fig.1 Forward Current vs. Ambient **Temperature**

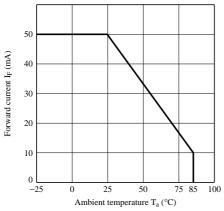


Fig.3 Peak Forward Current vs. Duty Ratio

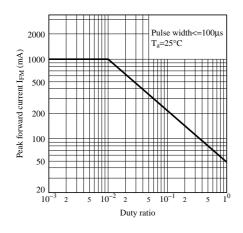


Fig.2 Power Dissipation vs. Ambient **Temperature**

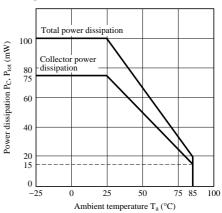
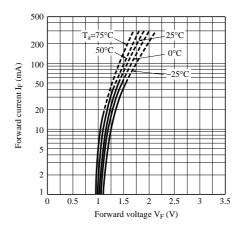


Fig.4 Forward Current vs. Forward Voltage



^{*5} Refer to Fig.15

Fig.5 Collector Current vs. Forward Current

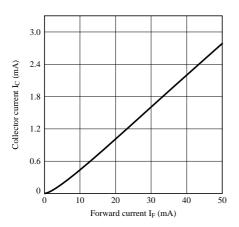


Fig.7 Relative Collector Current vs.

Ambient Temperature

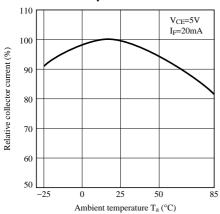


Fig.9 Collector - emitter Saturation Voltage vs. Ambient Temperature

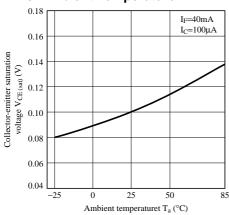


Fig.6 Collector Current vs. Collector-emitter Voltage

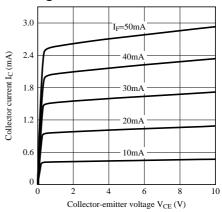


Fig.8 Collector Dark Current vs. Ambient Temperature

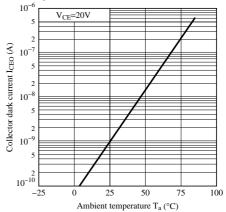


Fig.10 Response Time vs. Load Resistance

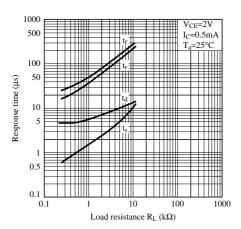


Fig.12 Relative Collector Current vs. Distance Between Sensor and Rectangle Prism

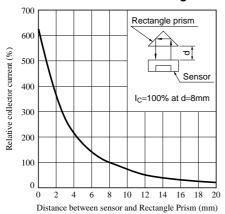


Fig.14 Voltage Gain vs Frequency

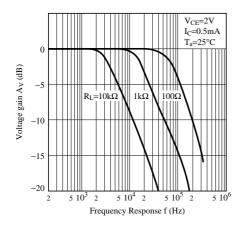


Fig.11 Test Circuit For Response Time

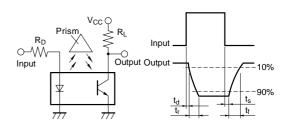


Fig.13 Measuring Configulation of Collector Current

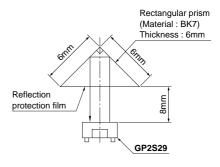
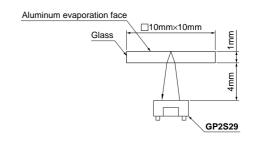


Fig.15 Measuring Configulation of Leak Current



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