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Photointerrupter, General type



Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Forward current	I_f	50	mA
Reverse voltage	V_R	5	V
Power dissipation	P_D	80	mW
Collector-emitter voltage	V_{CE0}	30	V
Emitter-collector voltage	V_{EC0}	4.5	V
Collector current	I_C	30	mA
Collector power dissipation	P_C	80	mW
Operating temperature	T_{op}	-25 to +85	°C
Storage temperature	T_{stg}	-40 to +85	°C
Soldering temperature	T_{sol}	260 / 3	°C / s

1 mm from the body bottom.

Electrical and optical characteristics (Ta=25°C)

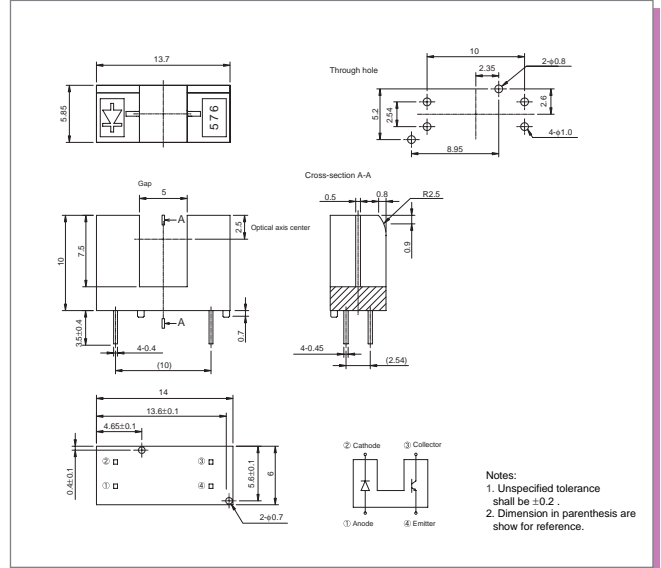
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions													
Forward voltage	V_f	-	1.3	1.6	V	$I_f=50mA$													
Reverse current	I_R	-	-	10	μA	$V_R=5V$													
Dark current	I_{CO}	-	-	0.5	μA	$V_{CE}=10V$													
Peak sensitivity wavelength	λ_p	-	800	-	nm	-													
Collector current	I_C	0.5	-	-	mA	$V_{CE}=5V, I_f=20mA$													
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.1	0.5	V	$V_{CE}=5V, I_C=20mA, R_L=100\Omega$													
Response time	<table border="0"> <tr> <td>Rise time</td> <td>t_r</td> <td>-</td> <td>10</td> <td>-</td> <td>μs</td> <td rowspan="2">$V_{CE}=5V, I_f=20mA, R_L=100\Omega$</td> </tr> <tr> <td>Fall time</td> <td>t_f</td> <td>-</td> <td>10</td> <td>-</td> <td>μs</td> </tr> </table>	Rise time	t_r	-	10	-	μs	$V_{CE}=5V, I_f=20mA, R_L=100\Omega$	Fall time	t_f	-	10	-	μs	-	-	-	-	-
Rise time	t_r	-	10	-	μs	$V_{CE}=5V, I_f=20mA, R_L=100\Omega$													
Fall time	t_f	-	10	-	μs														
Cut-off frequency	f_c	-	1	-	MHz	$I_f=50mA$													
Peak light emitting wavelength	λ_p	-	850	-	nm	Non-coherent Infrared light emitting diode used.													
Response time	t_r+t_f	-	10	-	μs	$V_{CE}=5V, I_C=1mA, R_L=100\Omega$ * This product is not designed to be protected against electromagnetic wave.													
Maximum sensitivity wavelength	λ_p	-	800	-	nm	-													

Applications

Printers
Facsimiles
AV equipment

Features

- Heat resistance (170°C).
- Small gap (0.5mm) and good accuracy.
- Quick response time.
- Filter against visible ray is built-in.



Electrical and optical characteristics curves

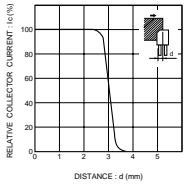


Fig.1 Relative output vs. distance (I)

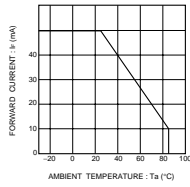


Fig.2 Forward current falloff

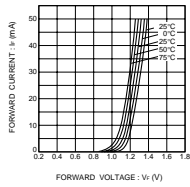


Fig.3 Forward current vs. forward voltage

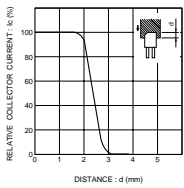


Fig.4 Relative output vs. distance (II)

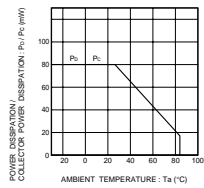


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

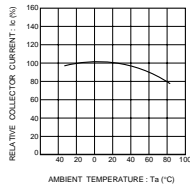


Fig.6 Relative output vs. ambient temperature

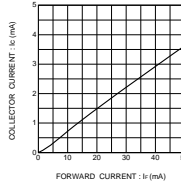


Fig.7 Collector current vs. forward current

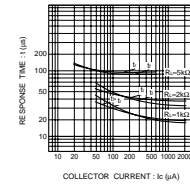


Fig.8 Response time vs. collector current

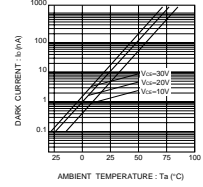


Fig.9 Dark current vs. ambient temperature

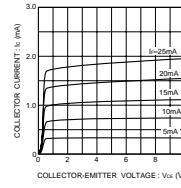


Fig.10 Output characteristics

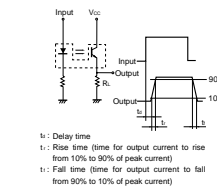


Fig.11 Response time measurement circuit

Appendix

Notes

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