



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



PNZ1270

Silicon NPN Phototransistor

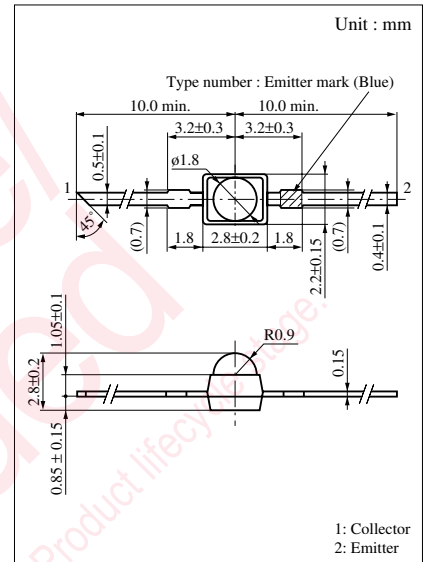
For optical control systems

■ Features

- High sensitivity
- Good collector photo current linearity with respect to optical power input
- Fast response : $t_r = 2.5 \mu s$ (typ.)
- Small size designed for easier mounting to printed circuit board

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rated	Unit
Collector to emitter voltage	V_{CEO}	20	V
Emitter to collector voltage	V_{ECO}	5	V
Collector current	I_C	20	mA
Collector power dissipation	P_C	50	mW
Operating ambient temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-30 to +100	°C

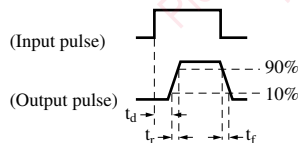
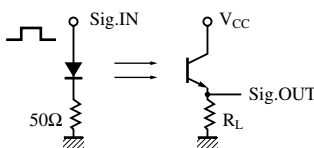


■ Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	I_{CEO}	$V_{CE} = 10V$		1	100	nA
Collector photo current	$I_{CE(L)}^{*3}$	$V_{CE} = 10V, L = 1000 \text{ lx}^{*1}$	0.8		19.2	mA
Peak sensitivity wavelength	λ_p	$V_{CE} = 10V$		800		nm
Acceptance half angle	θ	Measured from the optical axis to the half power point		14		deg.
Rise time	t_r^{*2}	$V_{CC} = 10V, I_{CE(L)} = 1mA, R_L = 100\Omega$		2.5		μs
Fall time	t_f^{*2}			3.5		μs

*1 Measurements were made using a tungsten lamp (color temperature T = 2856K) as a light source.

*2 Switching time measurement circuit



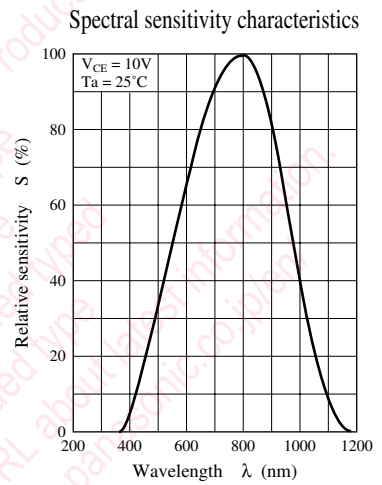
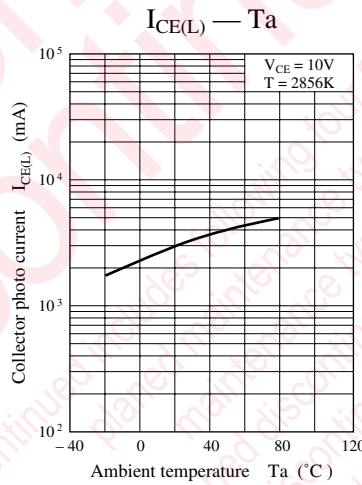
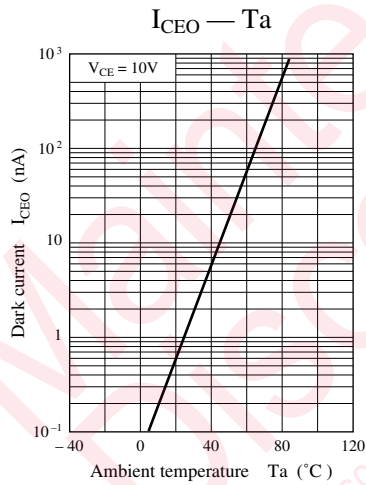
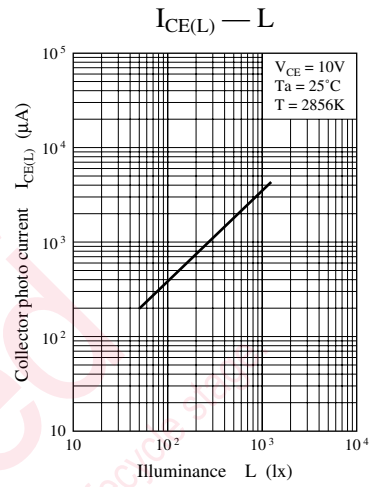
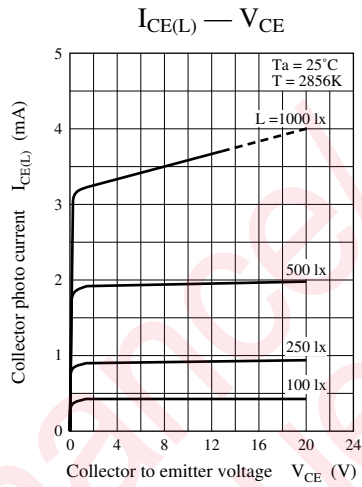
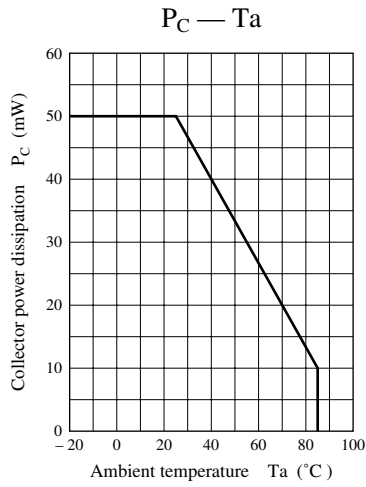
t_d : Delay time

t_r : Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)

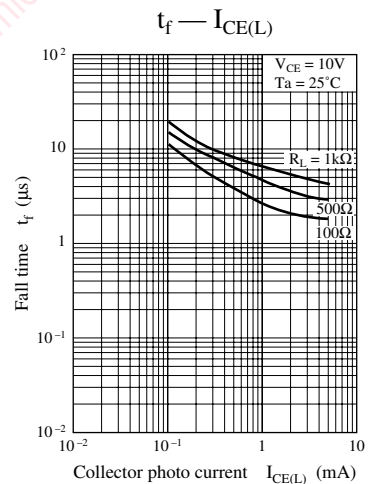
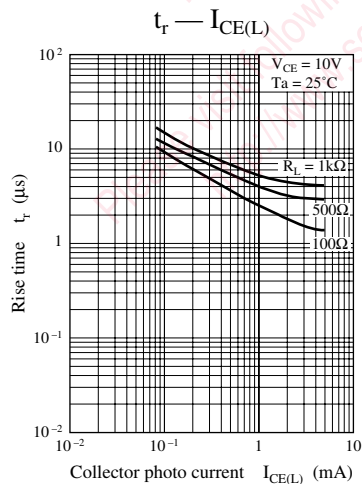
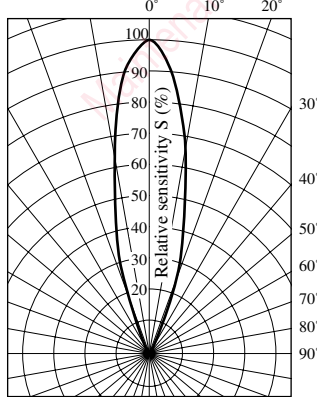
t_f : Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

*3 $I_{CE(L)}$ Classifications

Class	Q	R	S	T
$I_{CE(L)}$ (mA)	0.8 to 2.4	1.6 to 4.8	3.2 to 9.6	6.4 to 19.2



Directivity characteristics



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