

PNA2W01M

Darlington Phototransistor

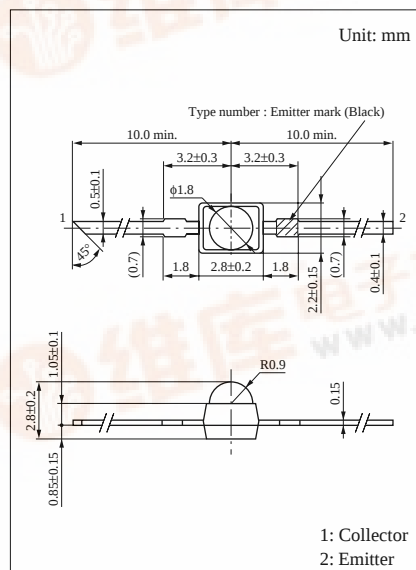
For optical control systems

■ Features

- High sensitivity
- Easy to combine with red and infrared light emitting diodes
- Small size designed for easier mounting to printed circuit board

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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

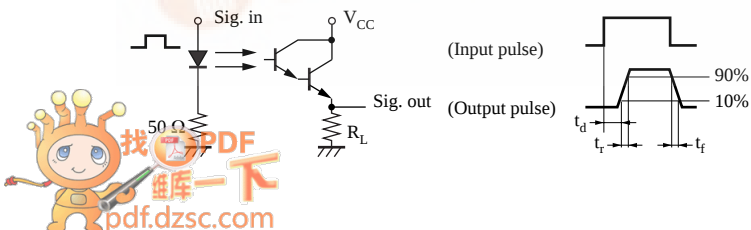


■ Electro-Optical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Dark current	I_{CEO}	$V_{CE} = 10\text{ V}$		0.1	0.5	μA
Collector photo current	$I_{CE(L)}$	$V_{CE} = 10\text{ V}, L = 2\text{ lx}^{*1}$	0.5	3		mA
Peak sensitivity wavelength	λ_p	$V_{CE} = 10\text{ V}$		800		nm
Acceptance half angle	θ	Measured from the optical axis to the half power point		18		$^\circ$
Response time	t_r, t_f^{*2}	$V_{CC} = 10\text{ V}, I_{CE(L)} = 5\text{ mA}, R_L = 100\ \Omega$		200		μs
Collector saturation voltage	$V_{CE(sat)}$	$I_{CE(L)} = 1\text{ mA}, L = 100\text{ lx}^{*1}$		0.7	1.5	V

Note) *1: Measurements were made using a tungsten lamp (color temperature $T = 2856\text{ K}$) 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)

