

PNA2602M

Darlington Phototransistor

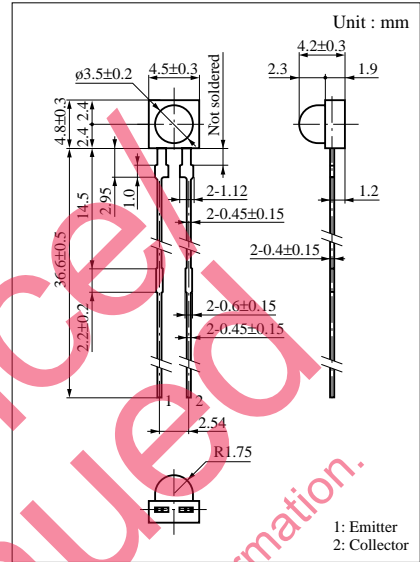
For optical control systems

Features

- Darlington output, high sensitivity
- Easy to combine light emission and photodetection on same printed circuit board
- Small size, thin side-view type package
- Long lead and visible light cutoff design with PN205

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	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 +80	°C
Storage temperature	T _{stg}	-30 to +100	°C

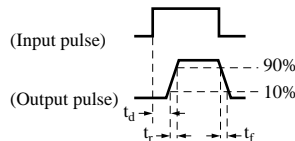
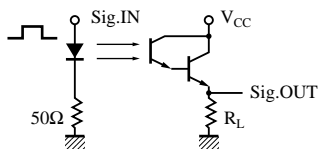


Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	I _{CEO}	V _{CE} = 10V			0.5	µA
Sensitivity to infrared emitters	S _{IR} ^{*1}	V _{CE} = 10V, H = 3.75 µW/cm ²	0.1		3.0	mA
Peak sensitivity wavelength	λ _p	V _{CE} = 10V		850		nm
Acceptance half angle	θ	Measured from the optical axis to the half power point		35		deg.
Response time	t _r , t _f ^{*2}	V _{CC} = 10V, I _C = 1mA, R _L = 100Ω		150		µs
Collector saturation voltage	V _{CE(sat)} ^{*1}	I _C = 100µA, H = 3.75 µW/cm ²			1.5	V

*1 Measurements were made using infrared light (λ = 940 nm) as a light source.

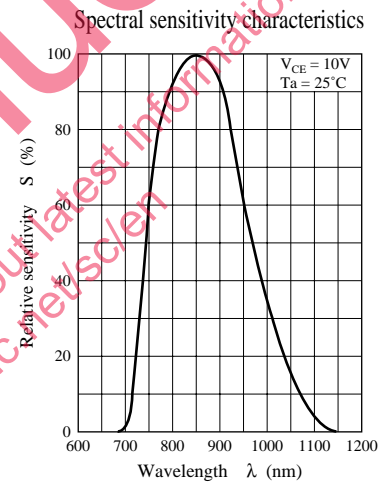
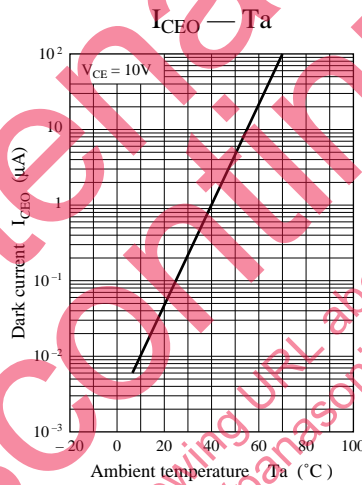
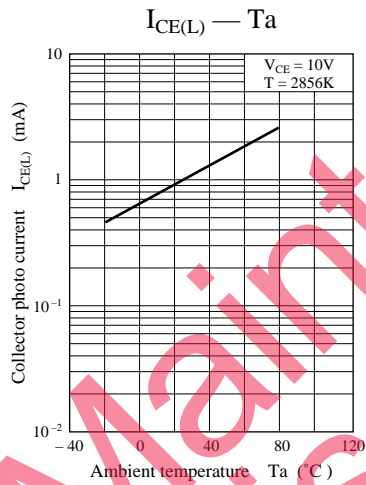
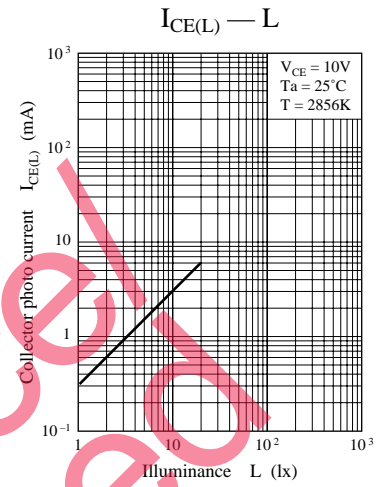
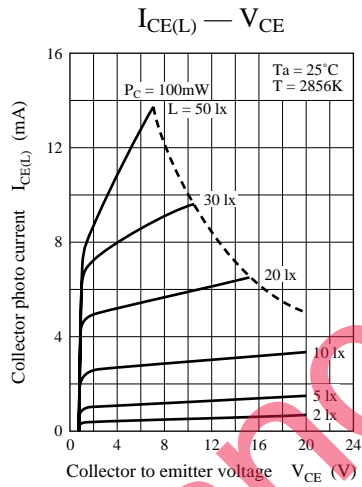
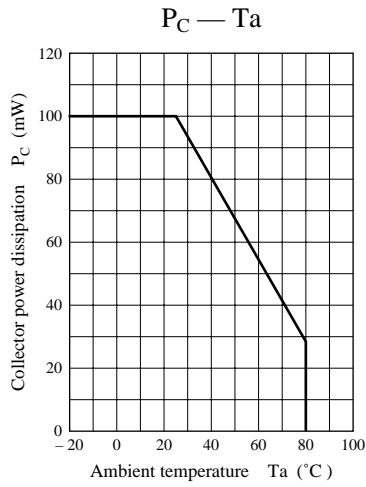
*2 Switching time measurement circuit



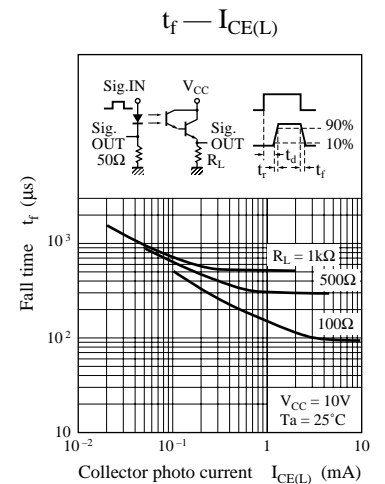
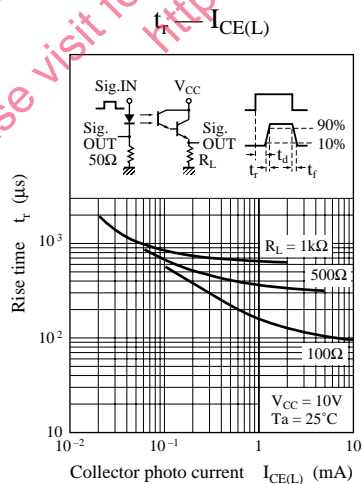
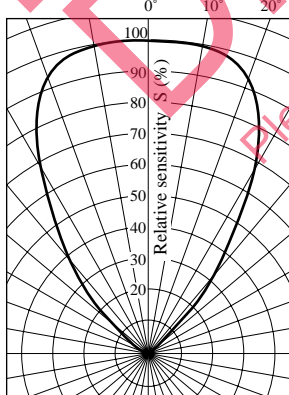
t_d: Delay time

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)



Directivity characteristics



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