

Silicon NPN Epitaxial Planar Phototransistor



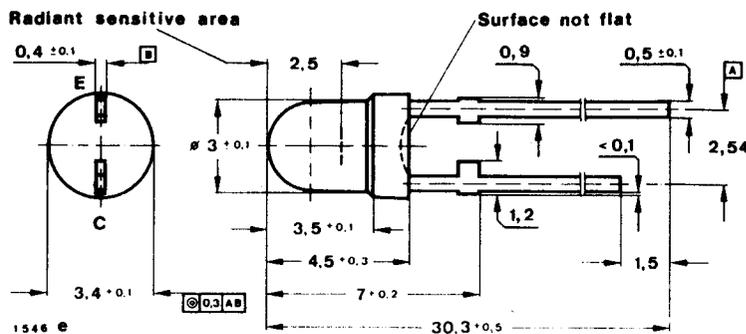
Application: Detector in electronic control and drive circuits

Features:

- Plastic case \varnothing 3 mm
- Suitable for visible and near infrared radiation
- High sensitivity
- Wide angle of half sensitivity
- Axial terminals

Preliminary specifications

Dimensions in mm



Angle of half sensitivity $\alpha = 180^\circ$

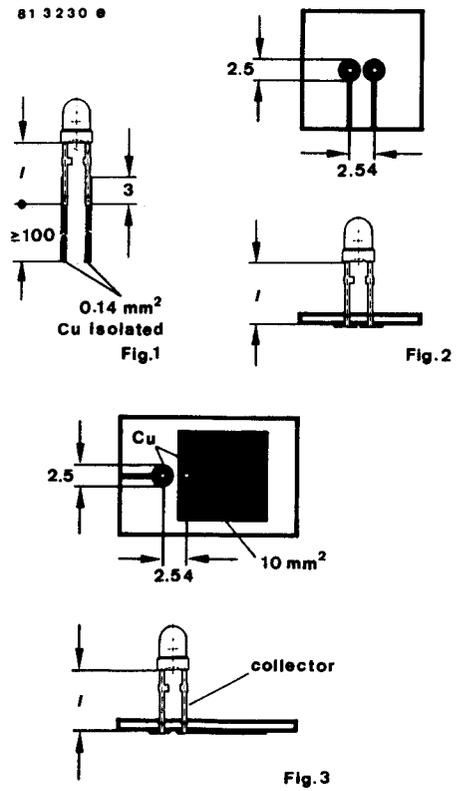
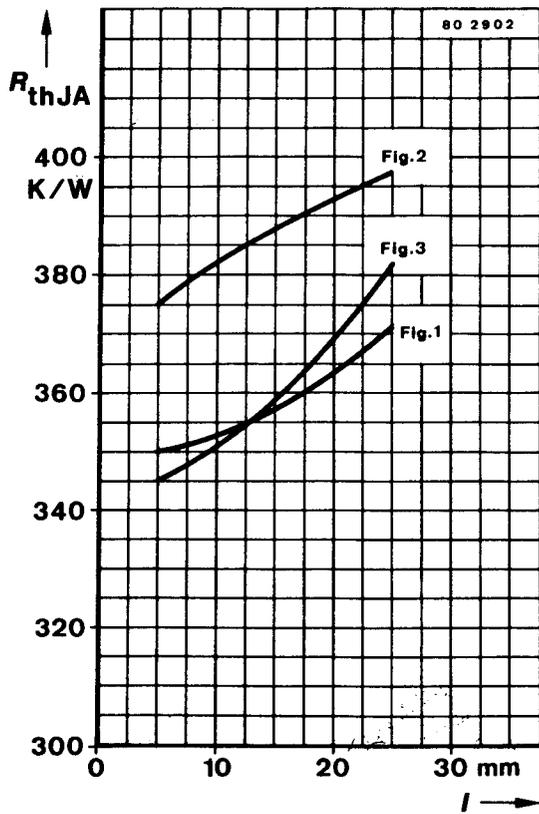
Special case
Clear plastic
Weight max. 0.35 g

Absolute maximum ratings

Collector-emitter voltage	V_{CEO}	32	V
Emitter-collector voltage	V_{ECO}	5	V
Collector current	I_C	50	mA
Peak collector current			
$\frac{t_p}{T} = 0.5, t_p \leq 10 \text{ ms}$	I_{CM}	100	mA
Total power dissipation			
$T_{amb} \leq 55^\circ \text{C}$	P_{tot}	100	mW
Junction temperature	T_j	100	$^\circ \text{C}$
Storage temperature range	T_{stg}	-25 ... +100	$^\circ \text{C}$
Soldering temperature, maximal			
$t \leq 3 \text{ s}$	$T_{sd}^{1)}$	245	$^\circ \text{C}$

¹⁾ Distance from the touching border $\geq 1.5 \text{ mm}$ with intermediate PC-board

BPW 42



Thermal resistance

Junction ambient

R_{thJA}

Min. Typ. Max.

450 K/W

Optical and electrical characteristics

$T_{amb} = 25^\circ C$

Collector dark current

$V_{CE} = 20 V, E = 0$

$I_{CEO}^*)$

10 200 nA

Collector light current

$V_{CE} = 5 V, E_A = 1 \text{ klx}^1)$

I_{ca}

3 mA

$V_{CE} = 5 V, E_e = 1 \text{ mW/cm}^2, \lambda_p = 950 \text{ nm}$

$I_{ca}^*)$

0.5 1.0 mA

Peak wavelength sensitivity

λ_p

830 nm

Range of spectral bandwidth (50 %)

$\lambda_{0.5}$

560 ... 980 nm

Collector-emitter breakdown voltage

$I_C = 1 \text{ mA}$

$V_{(BR)CEO}^*)$

32 V

Collector-emitter saturation voltage

$I_C = 0.1 \text{ mA}, E_e = 1 \text{ mW/cm}^2, \lambda_p = 950 \text{ nm}$

$V_{CEsat}^*)$

0.3 V

*) AQL = 0.65 %

1) Standard illuminant A (DIN 5033/IEC 306-1)

