

BPW 40



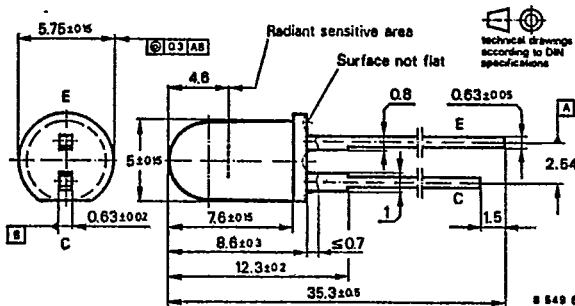
Silicon NPN Epitaxial Planar Phototransistor

Applications: Detector in electronic control and drive circuits

Features:

- Plastic case $\varnothing$ 5 mm (T-1 $\frac{1}{2}$)
- Suitable for visible and near infrared radiation
- High sensitivity
- Wide angle of half sensitivity
- Axial terminals

Dimensions in mm



Angle of half sensitivity
 $\pm \varphi = 20^\circ$
 Special case
 Clear plastic
 Weight max. 0.4 g

Accessories

Mounting clip Order No. 562136

Retainer ring Order No. 562135

Absolute maximum ratings

Collector-emitter voltage	V_{CE0}	32	V
Emitter-collector voltage	V_{ECO}	5	V
Collector current	I_C	100	mA
Peak collector current $\frac{t_p}{T} = 0.5, t_p \leq 10\text{ms}$	I_{CM}	200	mA
Total power dissipation $T_{amb} \leq 47^\circ\text{C}$	P_{tot}	150	mW
Junction temperature	T_j	100	$^\circ\text{C}$
Storage temperature range	T_{stg}	-25...+100	$^\circ\text{C}$
Soldering temperature $t \leq 3\text{s}$	$T_{sd}^{1)}$	245	$^\circ\text{C}$

¹⁾ Distance from the touching border ≥ 1.5 mm with intermediate PC-board

T1.2/1133.0788 E

1224 D-01

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Thermal resistance

Junction ambient

 R_{thJA}

Min.

Typ.

Max.

K/W

Optical and electrical characteristics

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

Collector dark current

 $V_{CE} = 20\text{ V}, E = 0$ $I_{CEO}^{*)}$

10

200

nA

Collector light current

 $V_{CE} = 5\text{ V}, E_A = 1\text{ klx}$ $V_{CE} = 5\text{ V}, E_s = 1\text{ mW/cm}^2, \lambda_p = 950\text{ nm}$ $I_{CSA}^{*)}$ I_{CS}

1

6

2

mA

mA

Peak wavelength sensitivity

 λ_p

780

nm

Range of spectral bandwidth (50%)

 $\lambda_{0.5}$

520...950

nm

Collector-emitter breakdown voltage

 $I_C = 1\text{ mA}$ $V_{(BR)CEO}^{*)}$

32

V

Collector-Emitter saturation voltage

 $I_C = 1\text{ mA}, E_s = 1\text{ mW/cm}^2, \lambda_p = 950\text{ nm}$ $V_{CESat}^{*)}$

0.3

V

Cut-off frequency

 $V_S = 5\text{ V}, I_C = 5\text{ mA}, R_L = 100\ \Omega$ f_c

170

kHz

Switching characteristics

 $V_S = 5\text{ V}, I_C = 5\text{ mA}, R_L = 100\ \Omega$, see test circuit

Delay time

 t_d

1.8

 μs

Rise time

 t_r

1.6

 μs

Turn-on time

 t_{on}

3.4

 μs

Storage time

 t_s

0.3

 μs

Fall time

 t_f

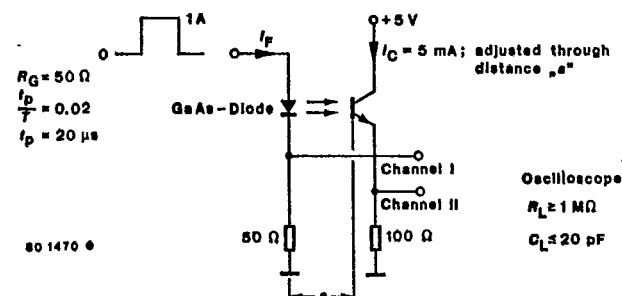
1.7

 μs

Turn-off time

 t_{off}

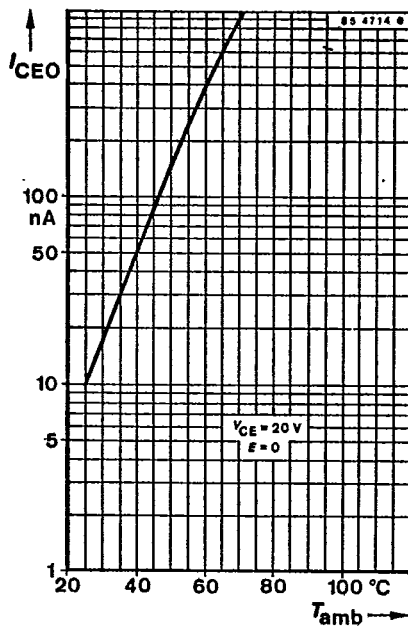
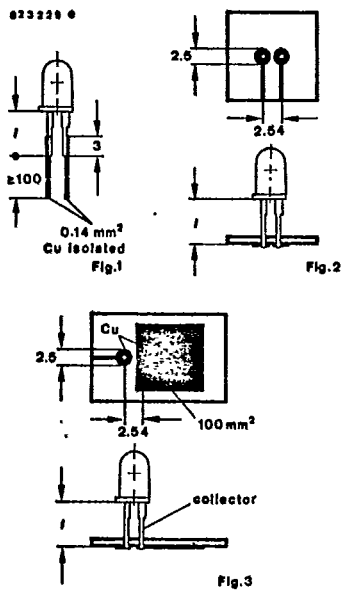
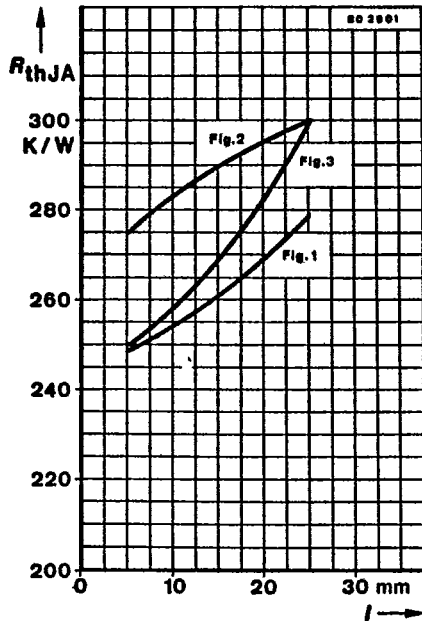
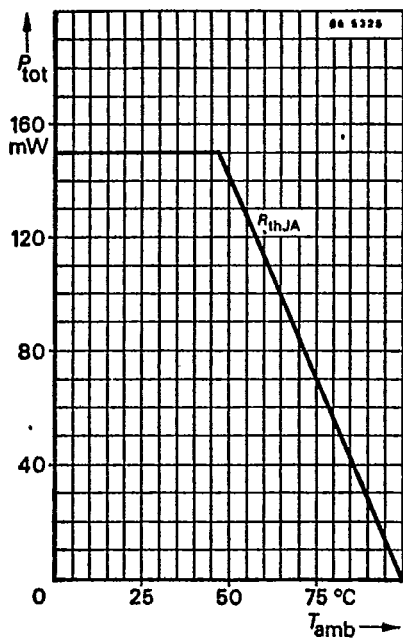
2.0

 μs 

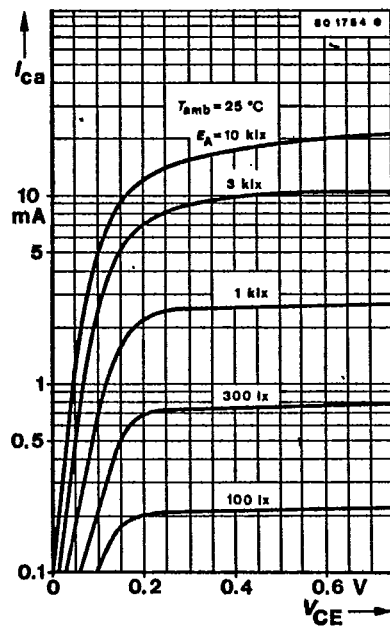
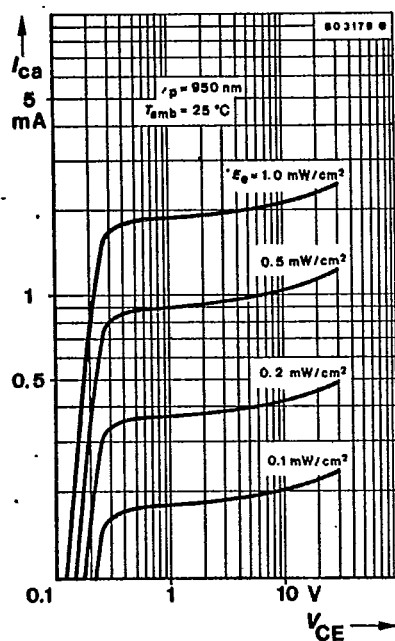
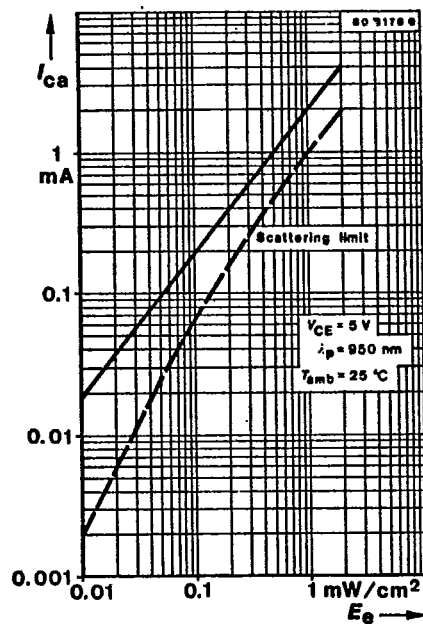
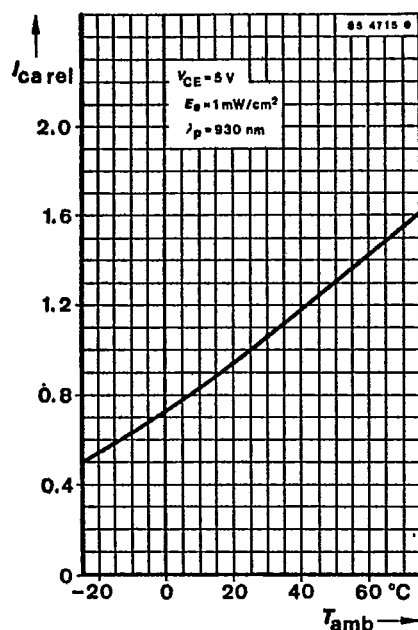
Test circuit

^{*)} AQL = 0.65 %¹⁾ Standard illuminant A (DIN 5033/IEC 306-1)

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