

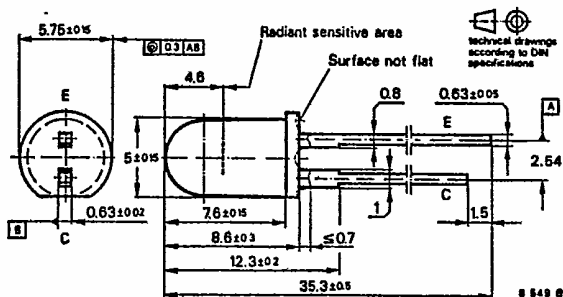
Silicon NPN Epitaxial Planar Phototransistor

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_{CEO}	32	V
Emitter-collector voltage	V_{ECO}	5	V
Collector current	I_C	100	mA
Peak collector current $t_p = 0.5, t_p \leq 10\text{ms}$	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

BPW 40

Thermal resistance		Min.	Typ.	Max.	
Junction ambient	R_{thJA}			350	K/W

Optical and electrical characteristics

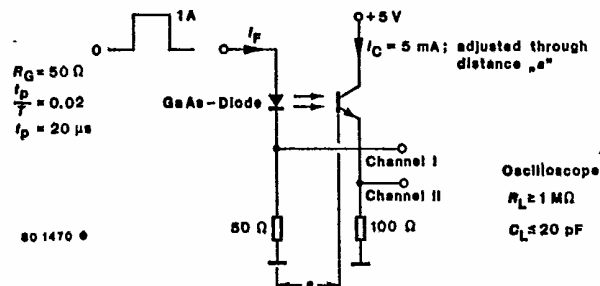
$T_{amb} = 25\text{ }^{\circ}\text{C}$

Collector dark current					
$V_{CE} = 20\text{ V}, E = 0$	$I_{CEO}^{*)}$		10	200	nA
Collector light current					
$V_{CE} = 5\text{ V}, E_A = 1\text{ klx}$	$I_{cs}^{*)}$		6		mA
$V_{CE} = 5\text{ V}, E_s = 1\text{ mW/cm}^2, \lambda_p = 950\text{ nm}$	$I_{cs}^{*)}$	1	2		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					
$V_s = 5\text{ V}, I_C = 5\text{ mA}, R_L = 100\text{ }\Omega$	f_c		170		kHz

Switching characteristics

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

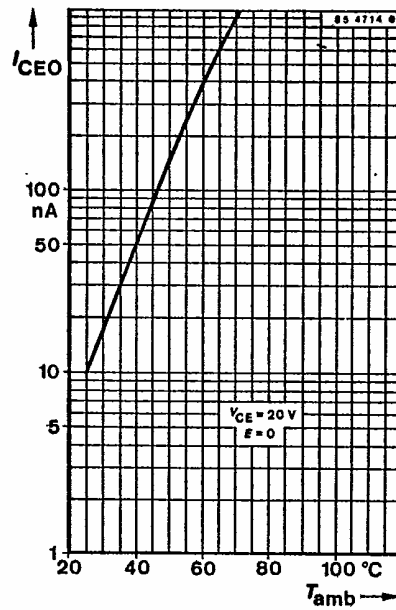
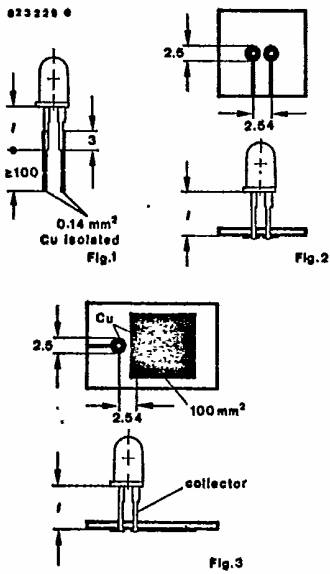
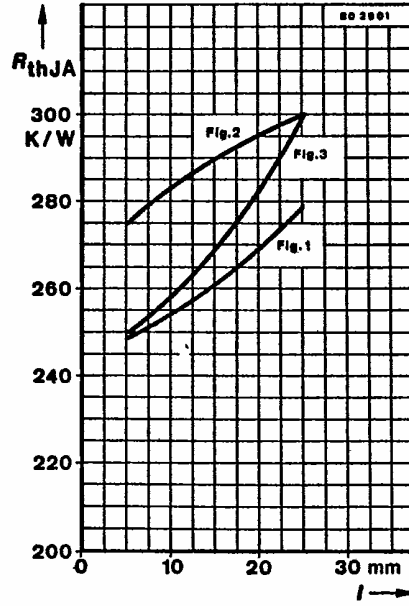
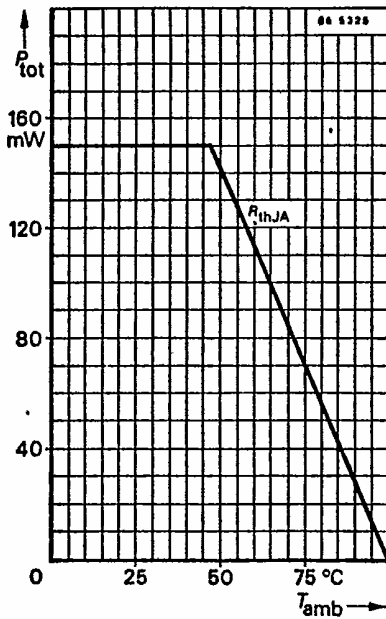
Delay time	t_d	1.8	μs
Rise time	t_r	1.6	μs
Turn-on time	t_{on}	3.4	μs
Storage time	t_s	0.3	μs
Fall time	t_f	1.7	μs
Turn-off time	t_{off}	2.0	μs



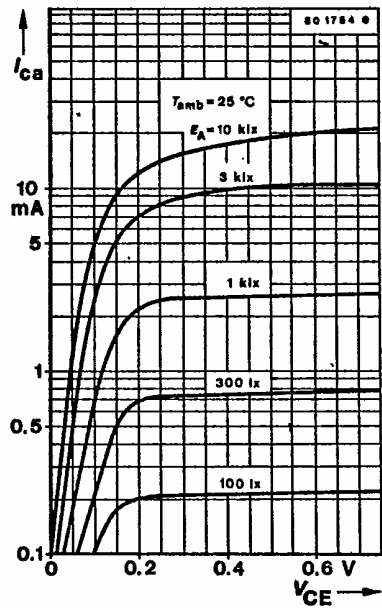
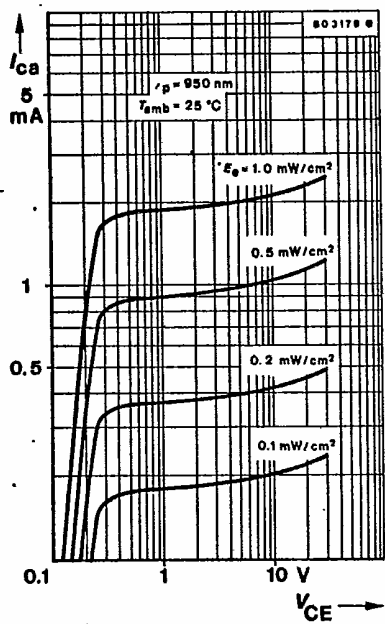
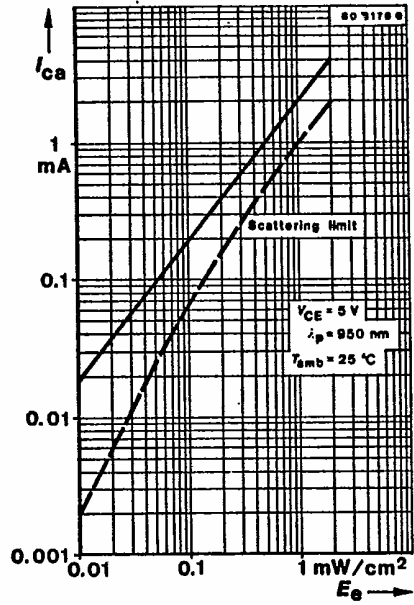
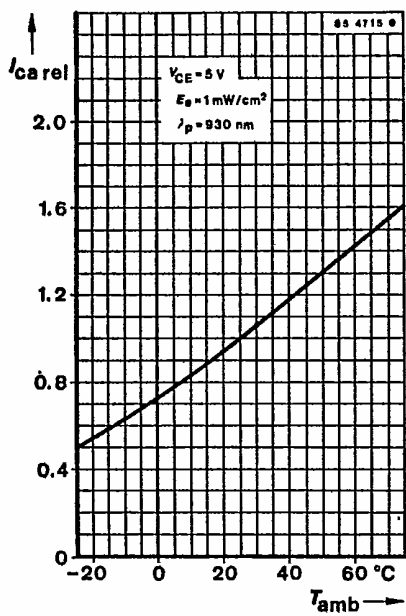
Test circuit

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

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