TELEFUNKEN electronic
Creative Technologies

BPW 28

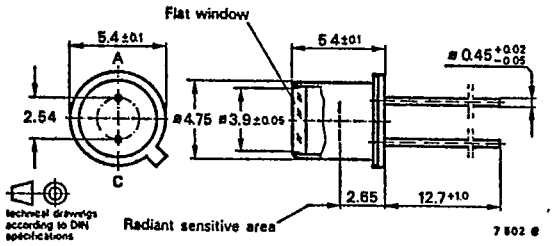
Silicon Avalanche Photodiode

Applications: Wide band detector for demodulation of fast signals, e.g. of lasers and GaAs-LEDs.
Detector for optical communication, e.g. for optical-fiber transmission systems.

Features:

- High sensitive, low-noise photo-detector for demodulation of radiation
- Photocurrent gain higher than 200
- Gain bandwidth product higher than 200 GHz

Dimensions in mm



Diameter of the radiant sensitive area ø = 0.2 mm
Angle of half sensitivity ±φ = 35°
≈ 18 A 2 DIN 41876
≈ JEDEC TO 18
Weight max. 0.5 g

Absolute maximum ratings

Power dissipation $T_{amb} \leq 25$ °C	P_v	100	mW
Junction temperature	T_j	125	°C
Ambient temperature range	T_{amb}	−65...+125	°C

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		Min.	Typ.	Max.	
Optical and electrical characteristics $T_{amb} = 25$ °C					
Range of spectral bandwidth (50%)	$\lambda_{0.5}$		400...950		nm
Reverse dark current $M^{1)} = 100$, $E = 0$	I_{ro}		1	5	nA
Breakdown voltage $I_R = 10$ µA, $E = 0$	$V_{(BR)}$	140	170	200	V
Temperature coefficient of $V_{(BR)}$	TK_{VBR}		0.35		V/K
Efficiency $\lambda = 910$ nm	n	20			%
Gain bandwidth product	$G_B^{2)}$	200			GHz
Capacitance $V_R = 100$ V, $f = 1$ MHz	C_D		1	1.2	pF
Series resistance $f = 1$ MHz	r_s			50	Ω

[1] The voltage dependent photocurrent gain M is defined as the ratio of photocurrent I_{ph} at applied reverse voltage V_R to the photocurrent at a bias of 10 V.

[2] Gain bandwidth product is defined as the product of M times the frequency of measurement, when the diode is biased for maximum obtainable gain.

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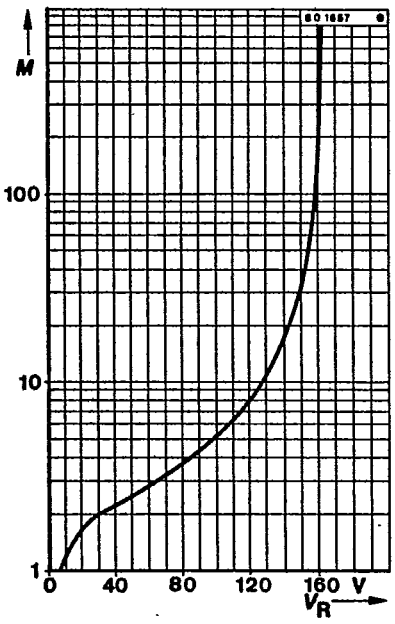
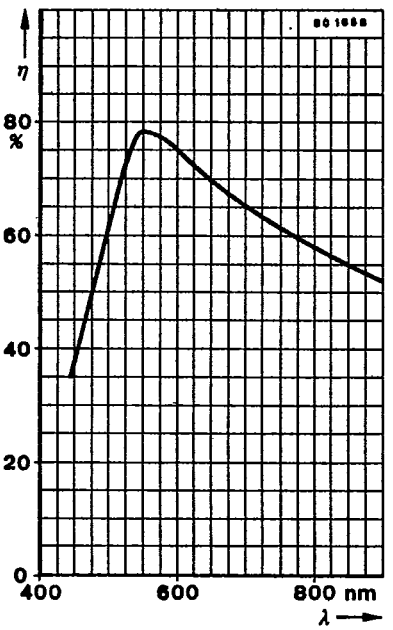
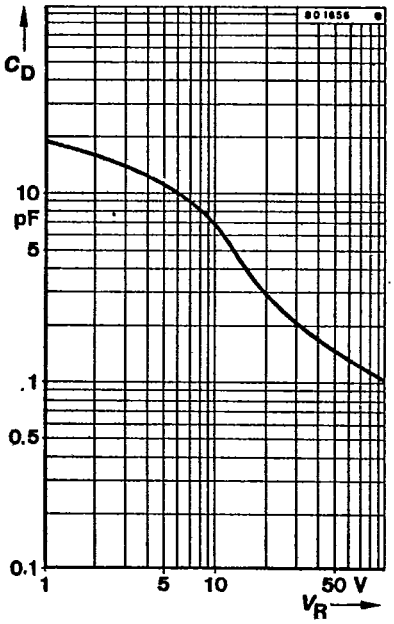

BO 1657
M
100
10
1
0
40
80
120
160 V
V_R


BO 1658
η
80
%
60
40
20
0
400
600
800 nm
λ


BO 1656
C_D
10
pF
5
1
0.5
0.1
1
5
10
50 V
V_R