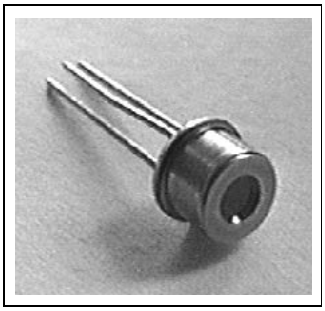
SIEMENS

Ge-Avalanche Photodiode in TO Package with Integrated Optics

SRD 00512Z



- Designed for application in fiber-optic communication systems
- Sensitive receiver for the 2nd optical window (1300 nm)
- High gain-bandwidth product
- Suitable for bit rates up to 1.2 Gbit/s and long-haul transmission
- Planar structure
- Small radiant sensitive area
- Low multiplied dark current
- High spectral sensitivity by built-in optics
- Hermetically sealed 3-pin metal case

Type	Ordering Code	Connector/Flange
SRD 00512Z	Q62702-P3042	TO, with optics

Maximum Ratings

Parameter	Symbol	Values	Unit
Forward current	I_F	50	mA
Reverse voltage	V_R	*	V
Operating and storage temperature	T_A T_{stg}	– 40 … + 85	°C
Max. radiant power into the opt. port (V_R = 5 V)	Φ_{port}	1	mW
Soldering time (wave / dip soldering), distance between solder point and base plate (≥ 2 mm, 260 °C)	t_s	10	s

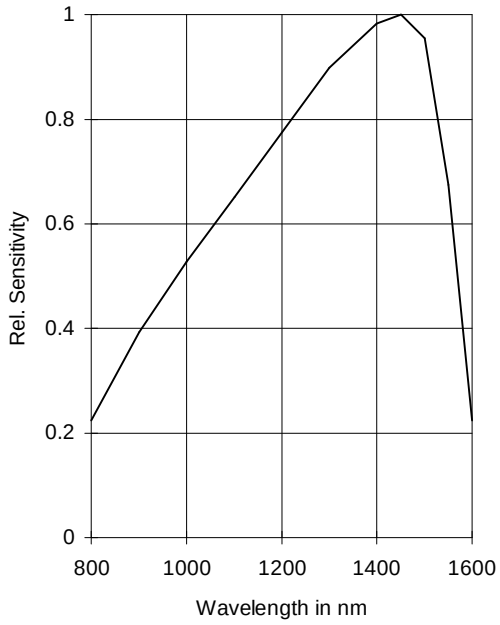
* Individual value of V_{BR} is delivered with each component.

Characteristics

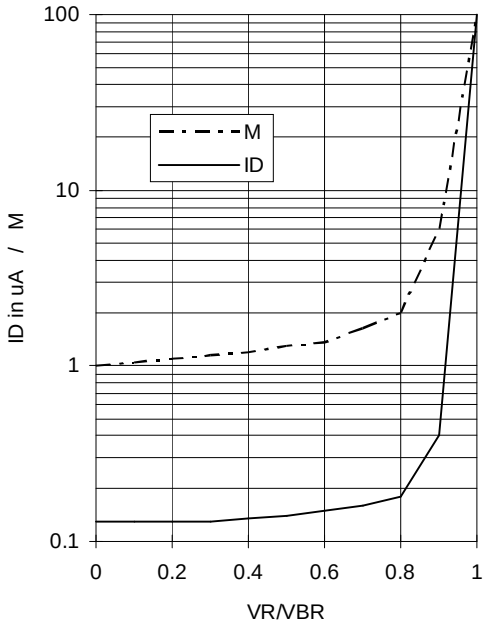
All optical data refer to an optimally coupled 10/125 µm SM fiber at ambient temperature of 25 °C, unless otherwise defined.

Parameter	Symbol	Values	Unit
Spectral sensitivity λ = 1310 nm, M = 1	S_λ	0.8 (≥ 0.7)	A/W
Rise and fall time (10 % – 90 %) R_L = 50 Ω, M = 1, λ = 1310 nm, Φ_{port} = 100 µW	t_r; t_f	0.3 (≤ 0.5)	ns
Multiplication factor at V_R = 0.9 V_{BR}	M	4 (≥ 3)	
Breakdown voltage I_R = 100 µA	V_{BR}	28 … 40	V
Total capacitance V_R = 0.9 V_{BR}, Φ_{port} = 0, f = 1 MHz	C	≤ 2	pF
Dark current V_R = 10 V V_R = 0.9 V_{BR}	I_D	< 200 < 300	nA nA
Multiplied dark current (M = 10)	I_{DM}	≤ 20	nA

Rel. Spectral Sensitivity
M = 1 (V_R = 10 V)

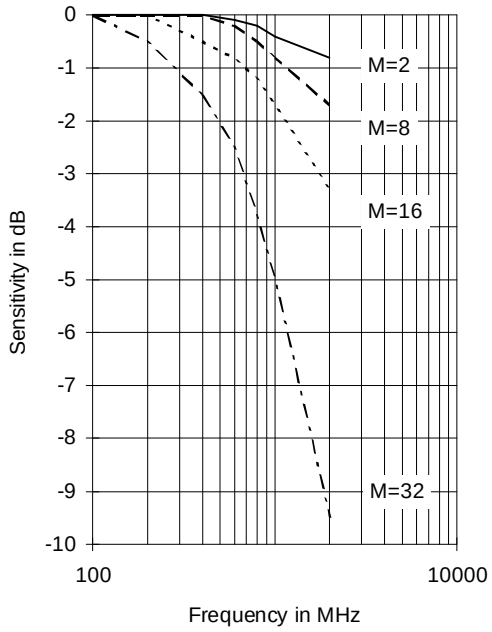


Dark Current $I_D = I_D(V_R / V_{BR})$
Multiplication Factor $M = M(V_R / V_{BR})$

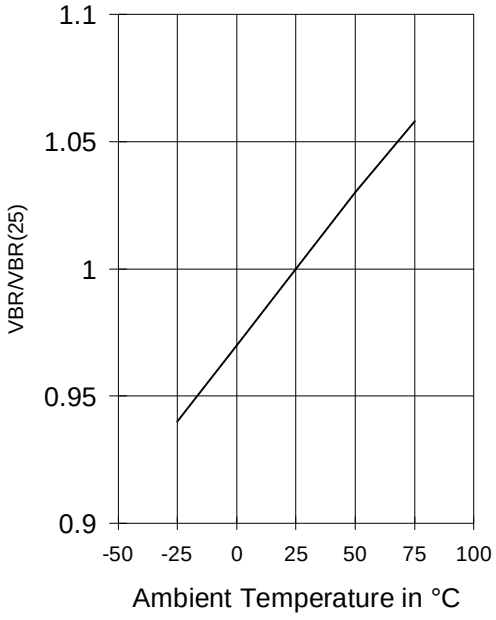


Frequency Response of Sensitivity

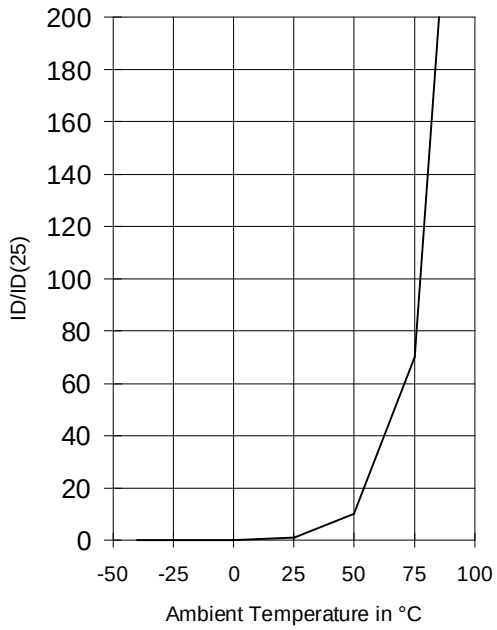
$S = S(f)$, λ = 1300 nm



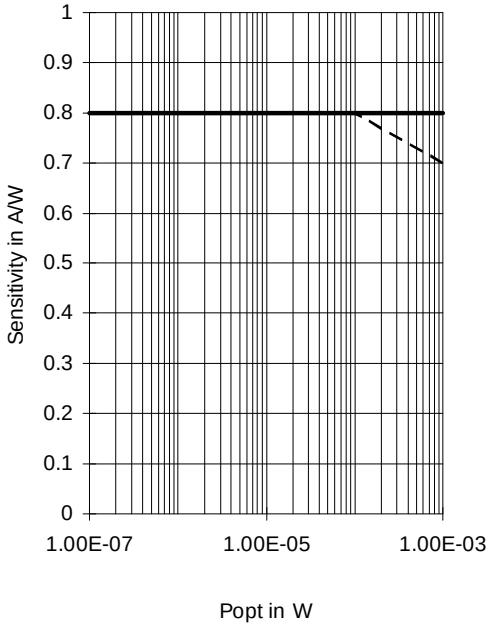
Temperatur Behaviour of Breakdown Voltage
$V_{BR} / V_{BR(25\ °C)}(T_A)$



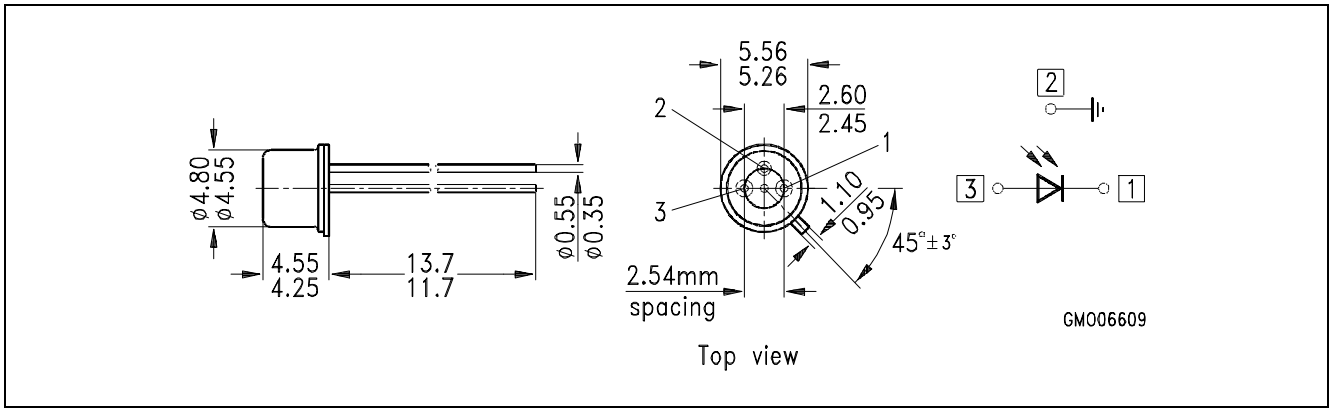
Temperature Behaviour of Dark Current
$I_D / I_{D(25\,°C)}(T_A)$



Sensitivity at different input Powers
$V_{BR} / V_{BR(25\,°C)}(T_A)$



Package Outlines (Dimensions in mm)



SRD 00512Z