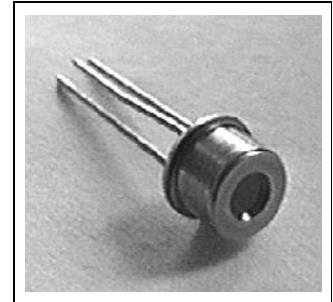


Ge-Avalanche Photodiode in TO Package with Integrated Optics

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.

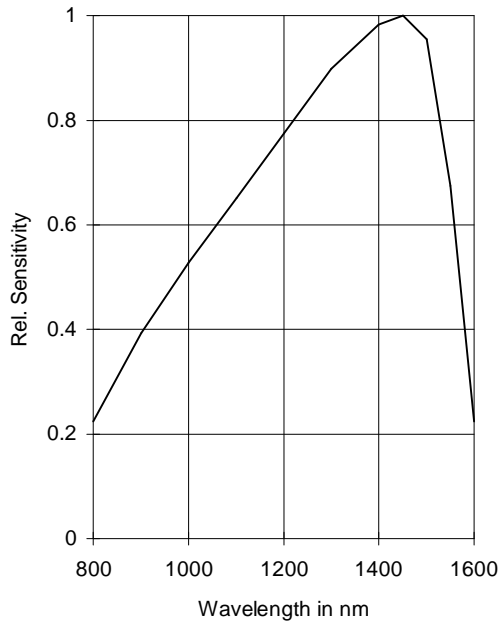
Characteristics

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 $\lambda = 1310 \text{ nm}$, $M = 1$	S_λ	0.8 (≥ 0.7)	A/W
Rise and fall time (10 % – 90 %) $R_L = 50 \Omega$, $M = 1$, $\lambda = 1310 \text{ nm}$, $\Phi_{\text{port}} = 100 \mu\text{W}$	t_r ; t_f	0.3 (≤ 0.5)	ns
Multiplication factor at $V_R = 0.9 V_{\text{BR}}$	M	4 (≥ 3)	
Breakdown voltage $I_R = 100 \mu\text{A}$	V_{BR}	28 ... 40	V
Total capacitance $V_R = 0.9 V_{\text{BR}}$, $\Phi_{\text{port}} = 0$, $f = 1 \text{ MHz}$	C	≤ 2	pF
Dark current $V_R = 10 \text{ V}$ $V_R = 0.9 V_{\text{BR}}$	I_D	< 200 < 300	nA nA
Multiplied dark current ($M = 10$)	I_{DM}	≤ 20	nA

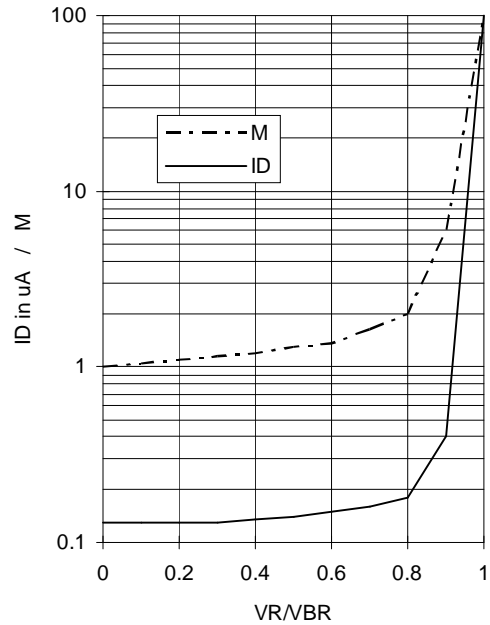
Rel. Spectral Sensitivity

$M = 1 (V_R = 10 \text{ V})$



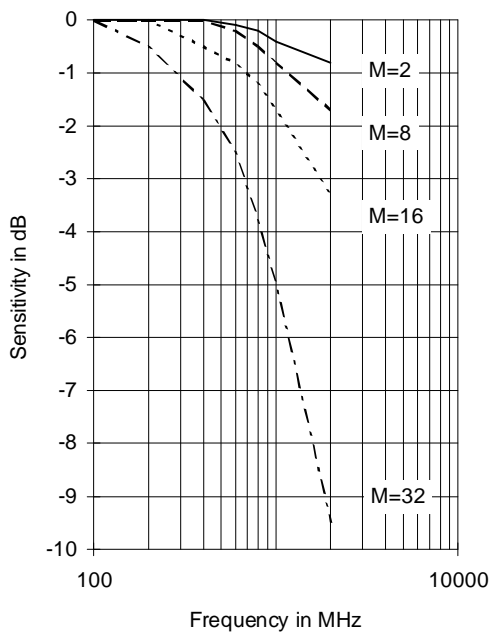
Dark Current $I_D = I_D(V_R / V_{BR})$

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



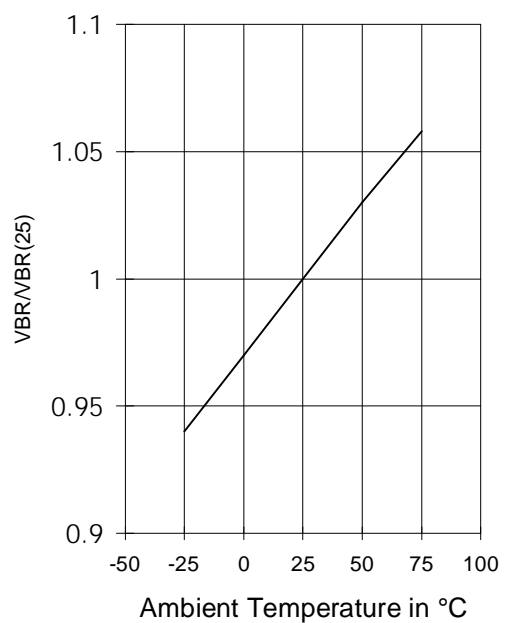
Frequency Response of Sensitivity

$S = S(f), \lambda = 1300 \text{ nm}$



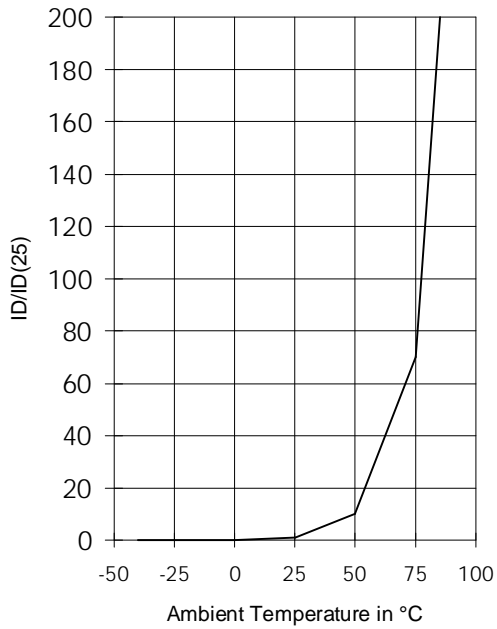
Temperatur Behaviour of Breakdown Voltage

$V_{BR} / V_{BR(25^\circ\text{C})}(T_A)$



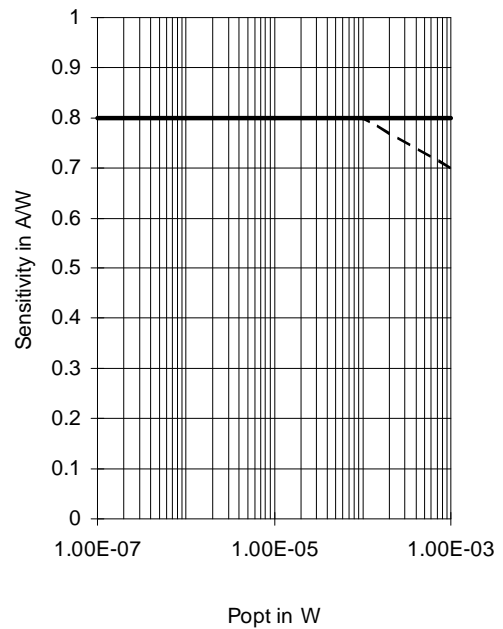
Temperature Behaviour of Dark Current

$$I_D / I_{D(25^\circ\text{C})}(T_A)$$

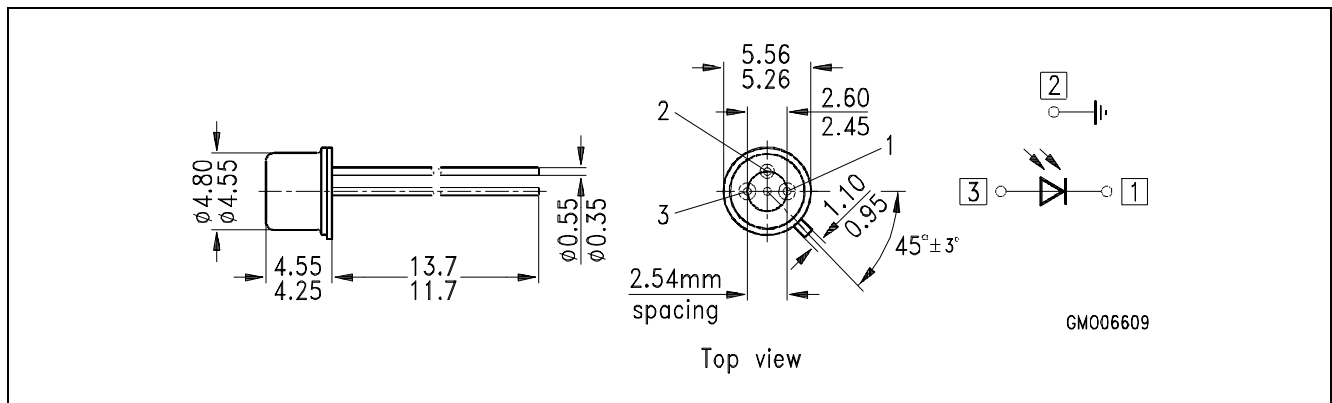


Sensitivity at different input Powers

$$V_{BR} / V_{BR(25^\circ\text{C})}(T_A)$$



Package Outlines (Dimensions in mm)



SRD 00512Z