

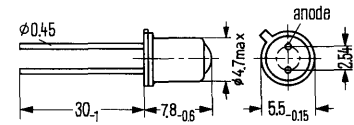
APY 12, APY 13

Germanium photodiode for high reverse voltages

Photodiodes APY 12 and APY 13 are suitable for use in photo-electric control and regulating devices. Maximum spectral sensitivity lies in the infrared region. The diodes are suitable for use at higher reverse voltages

They are housed in a metal case 18 B 2 DIN 41876 (similar TO-18); the anode lead is marked by the stud on the rim of the case bottom. This lead is to be connected to the – pole of the voltage supply when using the diode as a photodiode. This lead becomes the + pole when using the diode as a photo-voltaic cell. The case is potential free and insulated from the leads.

Type	Order number
APY 12 I	Q60115-Y12-X1
APY 12 II	Q60115-Y12-X2
APY 12 III	Q60115-Y12-X3
APY 13 I	Q60115-Y13-S1
APY 13 II	Q60115-Y13-S2
APY 13 III	Q60115-Y13-S3



Weight approx. 1 g Dimensions in mm

Maximum ratings

for an ambient temperature

Reverse voltage

Forward current

Diode photo current ($V_R = 100\text{ V}$)

Diode photo current ($V_R = 30\text{ V}$)

Power dissipation

Ambient temperature

	APY 12		APY 13		°C
	25	50	25	50	
T_{amb}	25	50	25	50	°C
V_R	100	100	30	30	V
I_F	10	10	10	10	mA
I	0.5	—	—	—	mA
I	1.5	—	1.5	—	mA
P_{tot}	50	25	50	25	mW
T_{amb}	+50		+50		°C

Characteristics ($T_{amb} = 25\text{ °C}$)

Light sensitive area

Wavelength of max. photo sensitivity

Sensitivity limit-infrared

Rise time of the photo current

(10 to 90% the final value) measured

in series with 10 k Ω ($\lambda = 900\text{ nm}$)

in series with 50 k Ω ($\lambda = 900\text{ nm}$)

Capacitance ($V_R = 10\text{ V}$)

Dark current ($V_R = 100\text{ V}$; $E_v = 0\text{ lx}$)

Dark current ($V_R = 30\text{ V}$; $E_v = 0\text{ lx}$)

	APY 12	APY 13	
A	1	1	mm ²
$\lambda_{s\text{ max}}$	1.5	1.5	μm
λ_g	1.9	1.9	μm
t_r	20	20	μs
t_r	30	30	μs
C_{10}	5	5	pf
I_R	≤ 8	—	μA
I_R	—	≤ 8	μA

Grouping of photo sensitivity (Radiator colour temperature 2400 °K)

		APY 12, APY 13			
Group	I	II	III		
Photo sensitivity	S	100 (>40)	180 (>120)	220 (>200)	nA/lx

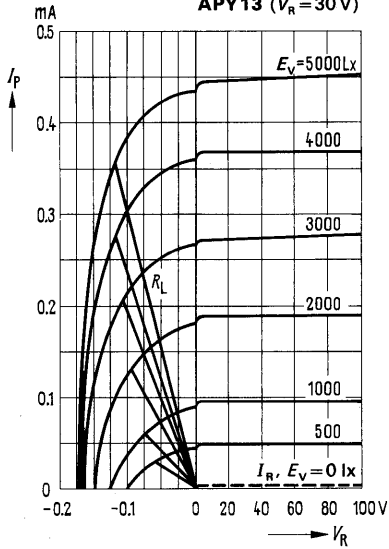
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Characteristics $I_p = f(V_R)$;

$I_R = f(V_R)$; E_v = parameter

APY12 ($V_R = 100$ V)

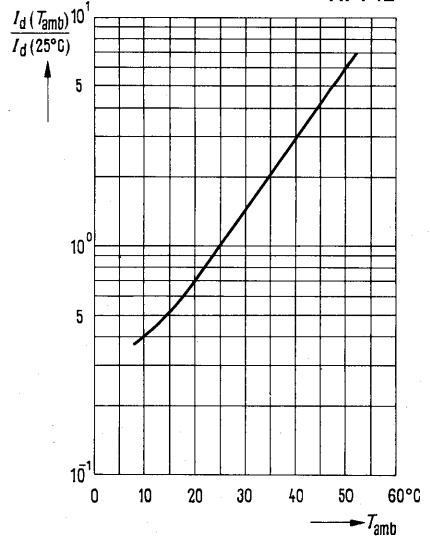
APY13 ($V_R = 30$ V)



Dark current $I_R = f(T_{\text{amb}})$

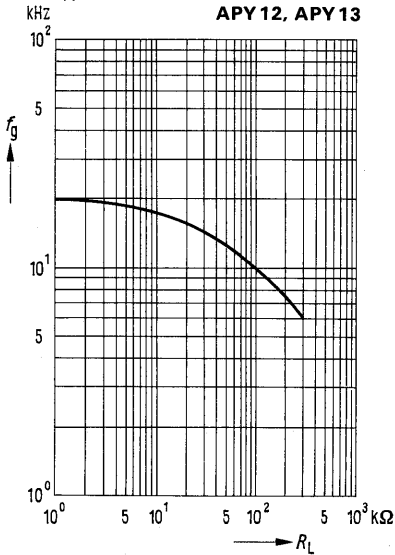
$V_R = 100$ V

APY12



Maximum frequency $f_g = f(R_L)$
typical values

APY12, APY13



Mean photo current as a function of the alternating frequency of light $R_L = 25$ kΩ

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