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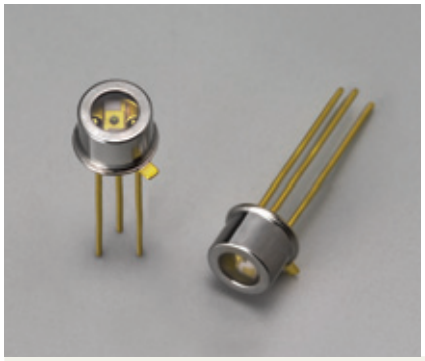
InGaAs PIN photodiodes



G8376 series 25-05826

Standard type

InGaAs PIN photodiodes are NIR (near infrared) detectors that feature high-speed response and low noise.

Features

- **Low noise, low dark current**
- **Low terminal capacitance**
- **3-pin TO-18 package**

Applications

- **NIR (near infrared) photometry**
- **Optical communication**

Specifications

Parameter	Symbol	G8376-03	G8376-05	Unit
Window material	-	Borosilicate glass with anti-reflective coating (optimized for 1.55 µm peak)		-
Package	-	TO-18		-
Active area	-	φ0.3	φ0.5	mm

Absolute maximum ratings

Parameter	Symbol	G8376-03	G8376-05	Unit
Reverse voltage	V_R	20		V
Operating temperature	Topr	-40 to +85		°C
Storage temperature	Tstg	-55 to +125		°C

Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	G8376-03			G8376-05			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	0.9 to 1.7	-	-	0.9 to 1.7	-	µm
Peak sensitivity wavelength	λp		-	1.55	-	-	1.55	-	µm
Photo sensitivity	S	λ=1.3 µm	0.8	0.9	-	0.8	0.9	-	A/W
		λ=λp	0.85	0.95	-	0.85	0.95	-	
Dark current	I_D	V_R=5 V	-	0.3	1.5	-	0.5	2.5	nA
Cut-off frequency	fc	V_R=5 V, R_L=50 Ω, -3 dB	-	400	-	-	200	-	MHz
Terminal capacitance	Ct	V_R=5 V, f=1 MHz	-	5	-	-	12	-	pF
Shunt resistance	Rsh	V_R=10 mV	-	1000	-	-	300	-	MΩ
D*	-	λ=λp	-	5×10^{12}	-	-	5×10^{12}	-	cm·Hz$^{1/2}$/W
Noise equivalent power	NEP	λ=λp	-	4×10^{-15}	-	-	8×10^{-15}	-	W/Hz$^{1/2}$

G8376 series may be damaged by electrostatic discharge. Be carefull when using G8376 series.

Spectral response

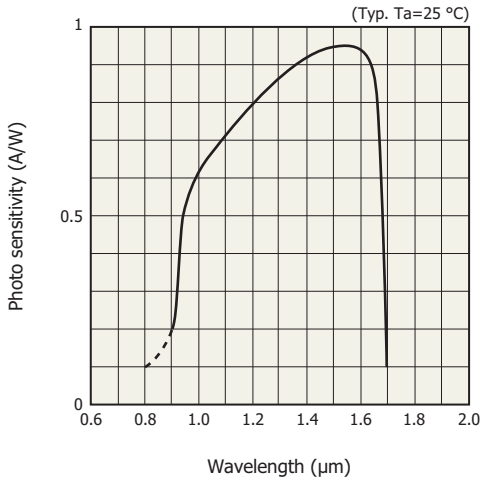


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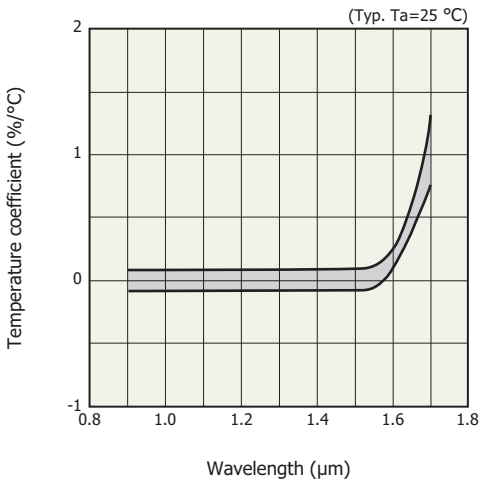
Photo sensitivity temperature characteristic



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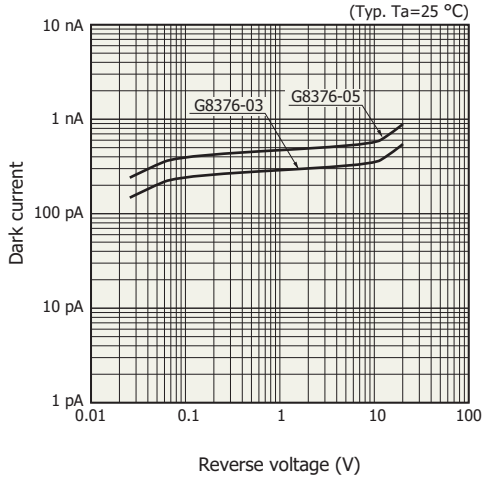
Dark current vs. reverse voltage



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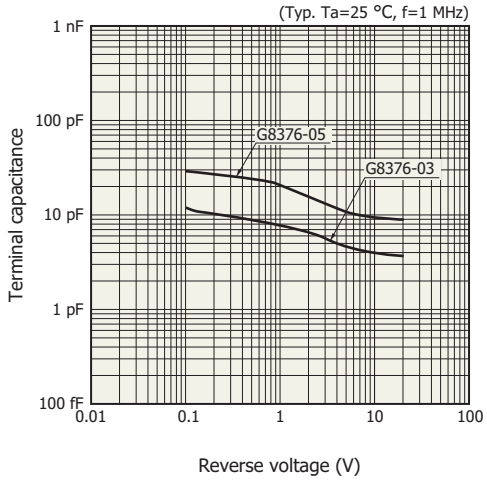
Terminal capacitance vs. reverse voltage



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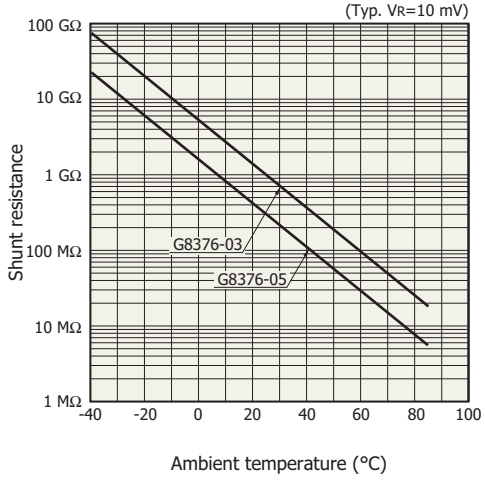
Shunt resistance vs. ambient temperature



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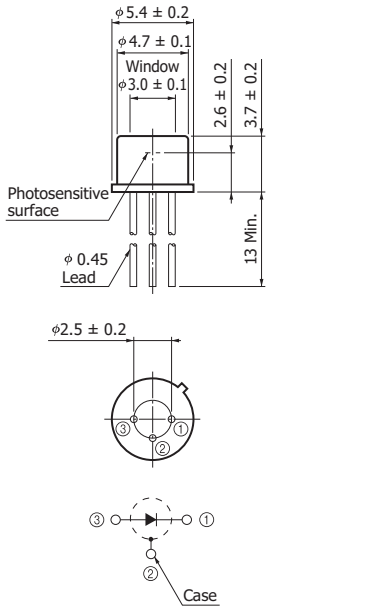
Dimensional outline (unit: mm)



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