

# GaAs PIN photodiode G8522 series

## High-speed response at low reverse voltage

G8522 series are high-speed PIN photodiodes developed for optical communications and are capable of GHz (gigahertz) operation even at a low reverse voltage (2 V or less). Please contact our sales office with your specific needs.

### Features

- High-speed response at low reverse voltage  
G8522-01: 3 GHz Min. ( $V_R=2$  V)  
G8522-02: 1.9 GHz Min. ( $V_R=2$  V)  
G8522-03: 1.5 GHz Min. ( $V_R=2$  V)
- Low noise, low dark current
- Low terminal capacitance

### Applications

- Optical fiber communications
- Fiber channels
- Gigabit Ethernet

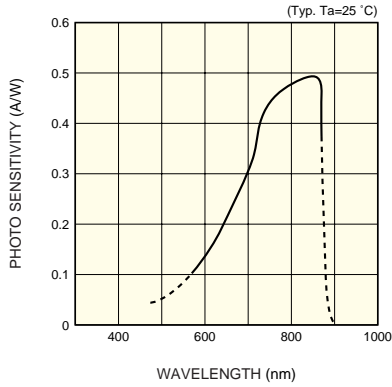
### ■ Absolute maximum ratings ( $T_a=25$ °C)

Parameter	Symbol	Value	Unit
Reverse voltage	$V_R$ Max.	30	V
Operating temperature	$T_{opr}$	-40 to +85	°C
Storage temperature	$T_{stg}$	-55 to +125	°C

### ■ Electrical and optical characteristics ( $T_a=25$ °C)

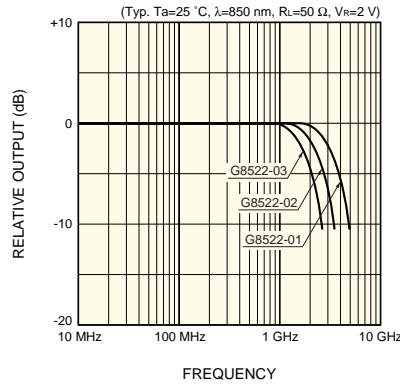
Parameter	Symbol	Condition	G8522-01			G8522-02			G8522-03			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Active area size	-		-	$\phi 40$	-	-	$\phi 80$	-	-	$\phi 120$	-	$\mu\text{m}$
Spectral response range	$\lambda$		-	570 to 870	-	-	570 to 870	-	-	570 to 870	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	850	-	-	850	-	-	850	-	nm
Photo sensitivity	S	$\lambda=850$ nm	0.45	0.5	-	0.45	0.5	-	0.45	0.5	-	A/W
Dark current	$I_D$	$V_R=5$ V	-	2	50	-	8	200	-	20	500	pA
Terminal capacitance	$C_t$	$V_R=2$ V, $f=1$ MHz	-	0.3	0.45	-	0.45	0.65	-	0.8	1.2	pF
Cut-off frequency	$f_c$	$V_R=2$ V, $R_L=50$ $\Omega$ $\lambda=850$ nm, -3 dB	3	-	-	1.9	-	-	1.5	-	-	GHz

■ Spectral response



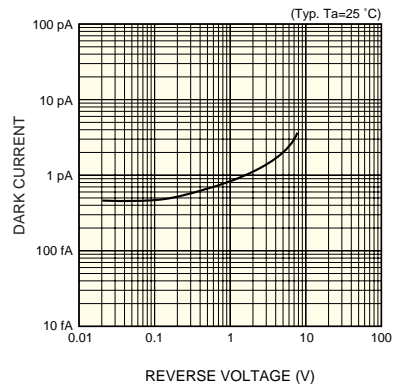
KGPD0044EB

■ Frequency response



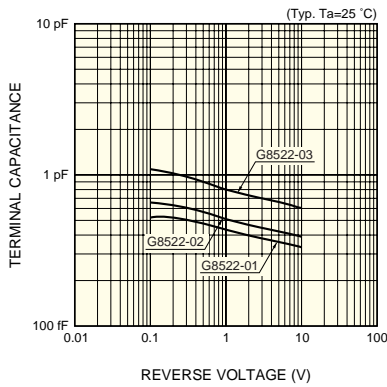
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■ Dark current vs. reverse voltage



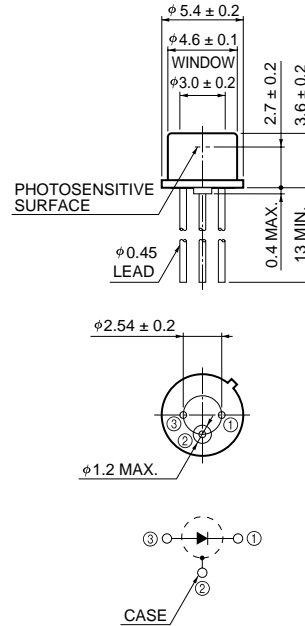
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■ Terminal capacitance vs. reverse voltage



KGPD0046EA

■ Dimensional outline (unit: mm)



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