

# GaAs PIN photodiode with preamp G9843 series

## Receptacle type, 0.85 $\mu\text{m}$ , 2.5 Gbps



G9843 series is a family of high-speed receivers specifically developed for 0.85  $\mu\text{m}$  band optical fiber communications. These devices incorporate a high-speed, high-sensitivity GaAs PIN photodiode integrated with a high-speed preamp and integrated in a receptacle module. Packages are available with various connectors and mounting styles.

### Features

- High-speed response
- High gain with AGC (Auto Gain Control)
- Low power supply voltage: 3.3 V
- Differential output
- Wide dynamic range: -24 to 0 dBm

### Applications

- Optical fiber communications
- Fiber channel
- Gigabit Ethernet

### ■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Supply voltage	Vcc	-0.5 Min., +5.0 Max.	V
Operating temperature *1	Topr	-40 to +85	°C
Storage temperature *1	Tstg	-40 to +85	°C

\*1: No condensation

### ■ Electrical and optical characteristics

(Typ. Ta=25 °C, Vcc=3.3 V, Vee=0 V, RL=50  $\Omega$  \*2,  $\lambda$ =850 nm, unless otherwise noted)

Parameter	Symbol	condition	Min.	Typ.	Max.	Unit
Photo sensitivity	S	Pin= -20 dBm *2, *3	0.7	1.0	-	V/mW
Supply current	Icc	Dark state, RL= $\infty$	-	45	60	mA
Output bias voltage	Vo	Dark state, RL= $\infty$	-	3.0	-	V
Cut-off frequency	fc	Pin= -20 dBm, -3 dB *2	1.7	2.1	-	GHz
low cut-off frequency	fc-L	Pin= -20 dBm, -3 dB	-	3.0	-	kHz
Noise equivalent power	NEP	Dark state fc-L to 1875 MHz *2, *3	-	440	710	nWrms
Minimum receivable sensitivity	Pmin	2.5 Gbps PRBS=2 <sup>23</sup> -1, BER=10 <sup>-10</sup> Extinction ratio=10 dB	-	-24	-22	dBm
Maximum receivable sensitivity	Pmax		0	-	-	
Optical return loss	ORL		12	14	-	dB

\*2: Output: capacitive coupling

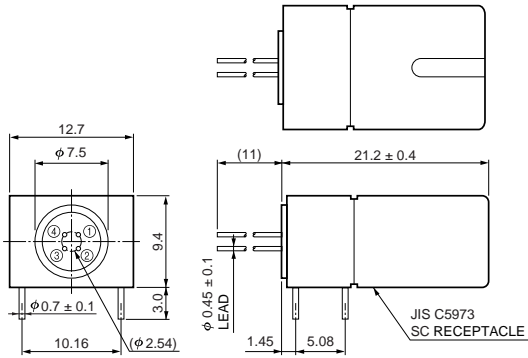
\*3: Single-ended (Vout+) measurement

### ■ Package lineup

Parameter	G9843-21	G9843-22	G9843-32
Mounting style	Board		Panel
Connector	SC	FC	FC
Dimensional outline	①	②	③

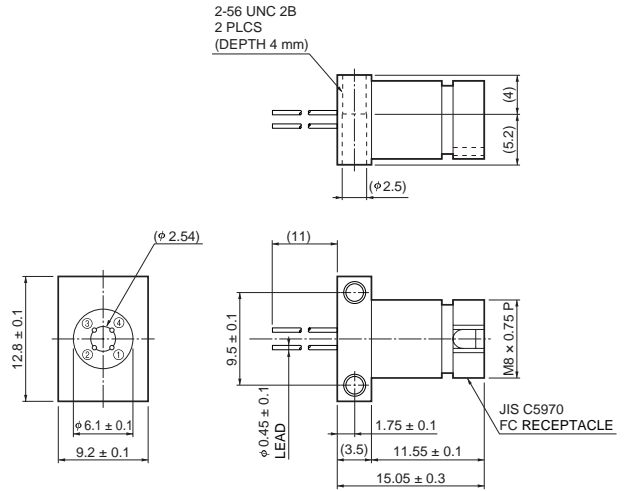
■ Dimensional outlines (unit: mm, tolerance unless otherwise noted:  $\pm 0.2$ )

## ① G9843-21



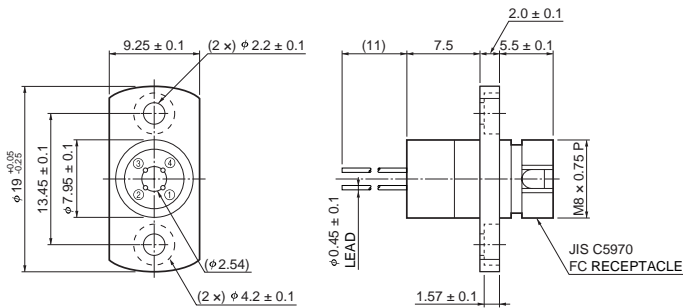
KPINA0068EA

## ② G9843-22



KPINA0069EB

## ③ G9843-32



KIRDA0081EB

### ■ Pin connection

Pin No.	G9843 series
①	Vcc
②	Vout -
③	Vee
④	Vout +