MITSUBISHI LASER DIODES

PD8XX3 SERIES

InGaAs AVALANCHE PHOTO DIODES

TYPE NAME PD8933

DESCRIPTION

PD8XX3 series are InGaAs avalanche photodiode which has a sensitive area of Φ35 μm, PD8XX3 is suitable for receiving the light having a wavelength band of 1000 to 1600nm. This photodiode features low noise, a high quantum efficiency and a high speed response is suitable for the light receiving element for long - distance optical communications.

FEATURES

- Φ35 μm active diameter
- Low noise
- High speed response
- Small dark current
- High quantum efficiency

APPLICATION

Receiber for long-distance fiber-optic communication systems

ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Conditions	Ratings	Unit
I_R	Reverse current	—	500	μA
I_F	Forward current	—	2	mA
T_C	Case temperature	—	−40～+85	℃
T_{stg}	Storage temperature	—	−40～+100	℃

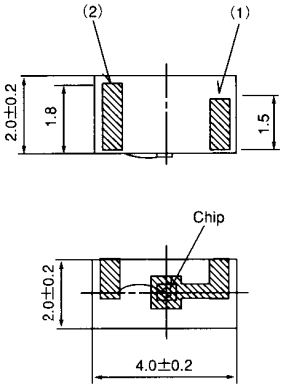
ELECTRICAL/OPTICAL CHARACTERISTICS (T_C = 25℃)

Symbol	parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
$V_{(BR)R}$	Breakdown voltage	I_R = 100 μA	40	60	80	V
C_t	Capacitance	V_R = 0.9V $_{(BR)R}$,f = 1MHz	—	0.3	0.4	pF
I_D	Dark current	V_R = 0.9V $_{(BR)R}$	—	10	30	nA
η	Quantum efficiency	M = 1, λ = 1550nm	—	80	—	%
fc	Cutoff frequency (-3dB)	M = 10,R_L = 50Ω,−3dB	2	3	—	GHz

OUTLINE DRAWINGS

PD8933

Dimension : mm



TIPICAL CHARACTERISTICS

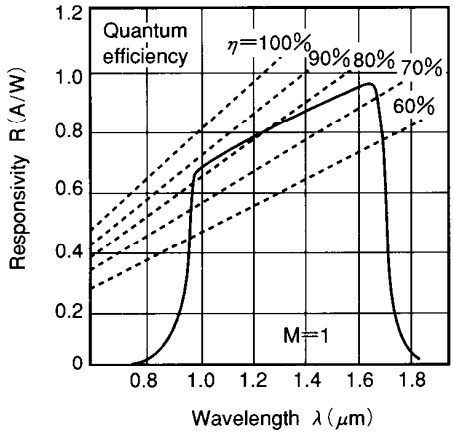


Fig.1 Spectral response

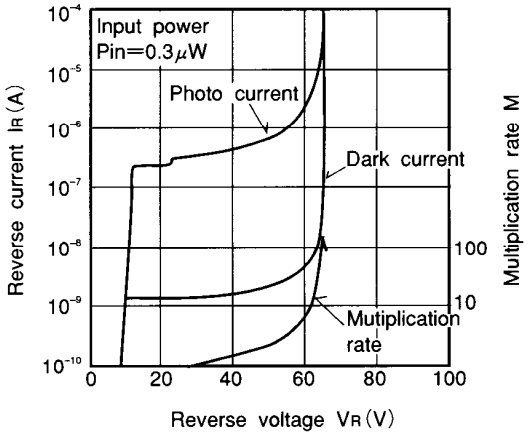


Fig.2 Dark current, photo current, and multiplication rate vs. reverse voltage

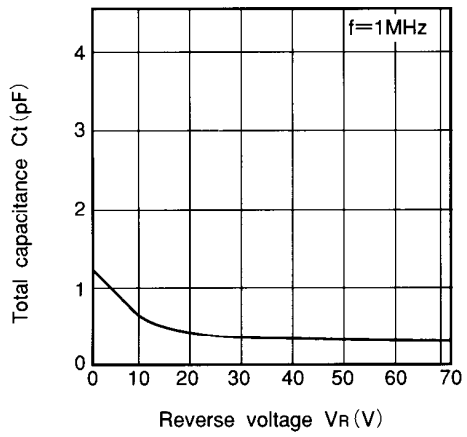


Fig.3 Total capacitance vs. reserve voltage

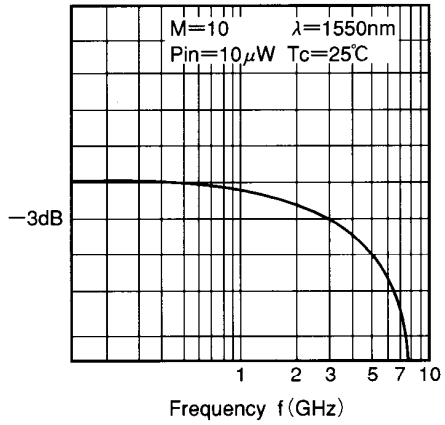


Fig.4 Frequency response

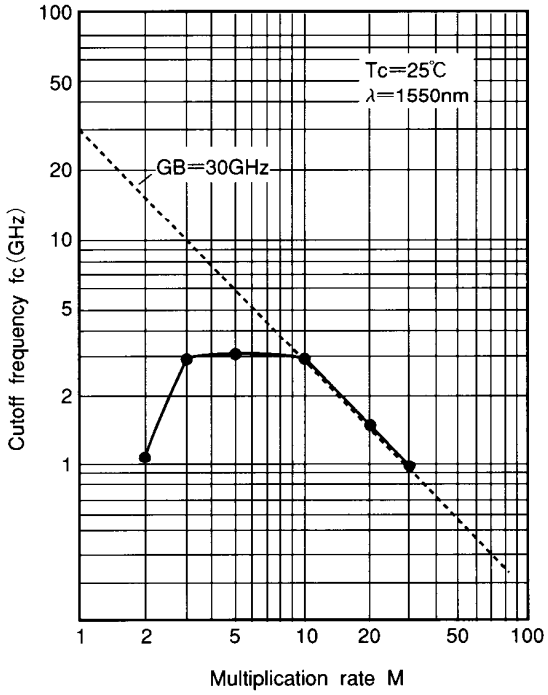


Fig.5 Multiplication rate dependence of cutoff frequency