MITSUBISHI (OPTICAL DEVICES)

FU-311SPP-CV3

InGaAs PD PREAMP MODULE FOR THE 1.31 μm AND 1.55 μm WAVELENGTH RANGE

DESCRIPTION

FU-311SPP-CV3 is InGaAs pin photodiode module with Si preamplifier, designed for use in high-speed, long haul optical communication systems.
The coaxial package contains InGaAs pin photodiode coupled with single-mode fiber pigtail and Si preamplifier.

FEATURES

- High-sensitivity (-37dBm typ)
- 4pin coaxial package
- Single power supply (+3.3V)
- Si preamplifier with AGC function
- Single ended output

APPLICATION

155Mbps.optical receiver (OC-3, STM-1)
Extended reach datacom and telecom applications
Long haul optical communication systems

ABSOLUTE MAXIMUM RATINGS (Tc=25°C)

Parameter	Symbol	Conditions	Rating	Unit
PD Reverse voltage	VPD	VCC=0V	15	V
PD Reverse current (CW)	Ir	-	0.7	mA
PD Forward current (CW)	If	-	2	mA
Power supply voltage	VCC	VEE=0V	0~4	V
Operating case temperature	Tc	-	-20~+85	°C
Storage temperature	Tstg	-	-40~+85	°C

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ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C,λ=1.3μm,VCC=3.3V,VEE=0V unless otherwise noted)

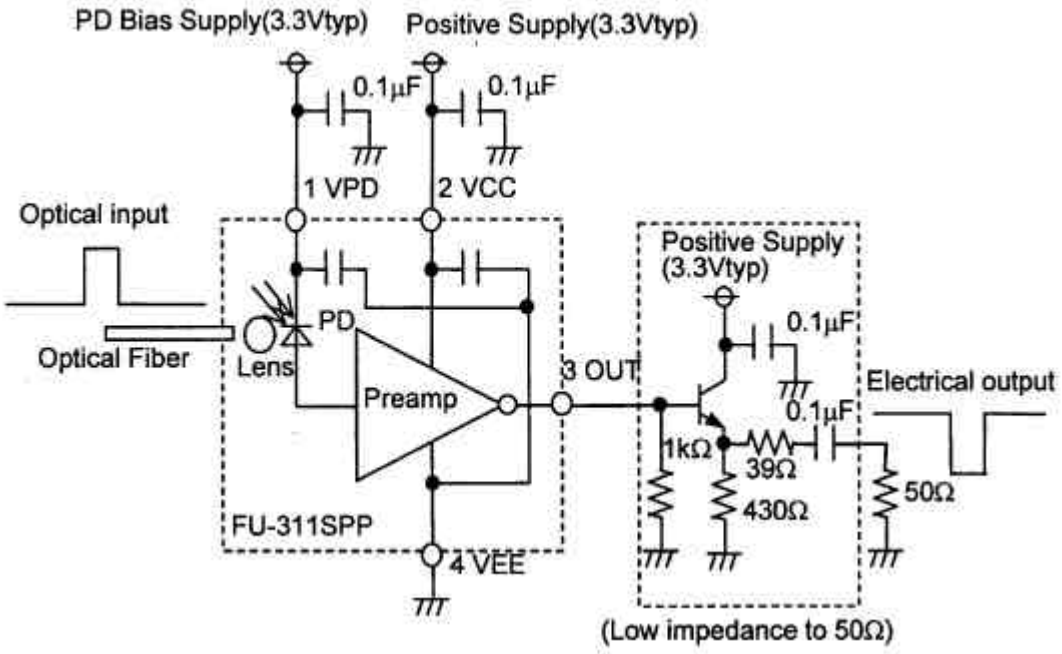
Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Detection range	-	-	1000	-	1600	nm
Responsivity(Note 1)	R	CW	0.75	0.85	-	A/W
Transimpedance	Zt	AC,f=1MHz AGC_off (Note 1)	-	18	-	kΩ
Cutoff frequency	fc	AC,RL=50Ω (Note 2)	110	-	-	MHz
Average input equivalent noise current density	in	AC,RL=50Ω,100kHz~110MHz (Note 2)	-	1.5	-	pA/√Hz
Output impedance	Zo	(Emitter follower) (Note 3)	-	Low	-	Ω
Sensitivity	Pr	AC,RL=50Ω, NRZ,155.52Mbps., PRBS=2^23-1,BER=10^-10, VPD=3.3V (Note 2)	-	-37	-34	dBm
Over load power	Po		-8	-5	-	
Power supply voltage	VCC	VEE=0V	3.135	3.3	3.465	V
Power supply current	ICC	VCC=3.3V	-	15	20	mA
Optical return loss	Prtn	-	25	-	-	dB

Note 1. Transimpedance value apply when AGC function is fully off.
Note 2. Impedance changer (Emitter follower to 50Ω) used.
Note 3. Preamp output buffer can not drive of the 50Ω load. Please connect to the high impedance circuit.

OPTICAL FIBER SPECIFICATION

Parameter	Limits	Unit
Fiber type	Single mode	-
Mode filed dia.	9.5±1	μm
Cladding dia.	125±2	μm
Jacket dia.	0.9 typ.	mm
Connector type	FC	-
Connector return loss	40(min)	dB

BLOCK DIAGRAM



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OUTLINE DIAGRAM

(Unit : mm)