



Wide Dynamic Range High Sensitivity PIN-FET Receiver

PFWM93 Series

Features

- *InGaAs Planar pin Detector*
- *Transimpedance amplifier with AGC*
- *High sensitivity*
- *Wide Dynamic Range*
- *Response wavelength range 1100~1650nm*
- *Standard 14pin DIP with multi-mode or single-mode pigtail package*

Application

- *Fiber optical transmission systems or access networks from 2Mb/s to 280Mb/s*

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-40	85
Relative Humidity	RH	%	-	85
Positive Power Supply Voltage	Vcc/Vee	V	-	7
Negative Power Supply voltage	Vcc/Vee	V		-7
Reverse Detector Bias Voltage	-	V	-	-15
Forward Current	If	mA	-	2
Reverse photoCurrent	Ir	mA	-	5
Fiber coupled power	Pin	mW		5
Lead Solder Temperature	-	°C	-	260
Lead Soldering Time	-	s	-	10

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Case Operating Temperature Range	Tc	°C	-20	-	70
Operating Voltage	VOP		-	±5	-

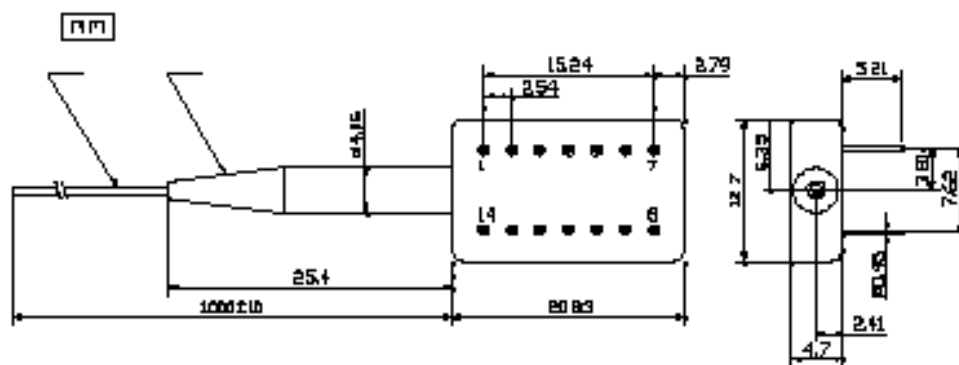
Specifications (T=25°C, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
Rate	-	Mb/s	2	-	280	
Transimpedance	-	KΩ	30		8000	
Detector dark current	Id	nA	-	-	5	
Output impedance	Ro	Ω	-	50	-	
-3dB Bandwidth	BW	MHz	1	-	180	
Output voltage	Vout	mVp-p	-	1000	1200	RL=50Ω
Optical Characteristics						
Sensitivity	S	dBm	-56	-	-39	NRZ BER=10 ⁻⁹
Sensitivity vs temperature	-	dB	-	1	1.5	20°C~65°C
Overload	Pin-max	dBm	-3	-		
Responsivity	R	A/W	0.8	-	-	λ=1310nm, Vr=-5V
Wavelength range	λ	nm	1100	-	1650	

Pin Description

Pin	Description	Pin	Description	Pin connection
1	Detector bias (Typ, -5V)	7	Output	See "Package Outline"
3	GND	8	GND	
4	-5V power supply	10	+5V power supply	
5	GND	others	NC	

Package Outline



Ordering Information

Part No.	Specification						
	Package	Datarate	Bandwidth	Detector	Sensitivity	Temp	Transimpedance
PFWM931	14pin DIP	8.4~10Mb/s	7MHz	PIN+FET	-52 (Typ)	-20~+70°C	1000 KΩ
PFWM932	14pin DIP	16Mb/s	13MHz	PIN+FET	-51 (Typ)	-20~+70°C	650 KΩ
PFWM933	14pin DIP	34 Mb/s	33 MHz	PIN+FET	-48 (Typ)	-20~+70°C	250 KΩ
PFWM934	14pin DIP	68 Mb/s	50 MHz	PIN+FET	-47 (Typ)	-20~+70°C	150 KΩ
PFWM935	14pin DIP	168 Mb/s	120 MHz	PIN+FET	-43 (Typ)	-20~+70°C	70 KΩ
PFWM936	14pin DIP	280 Mb/s	180 MHz	PIN+FET	-40 (Typ)	-20~+70°C	30 KΩ

*The sensitivity is calculated by using the PINFET transimpedance, the noise voltage (which is RMS of no light input) and the PIN responsivity. And it is at the conditions of room temperature and NRZ code Bit Error Rate better than 10⁻⁹.

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