

HR1103CX

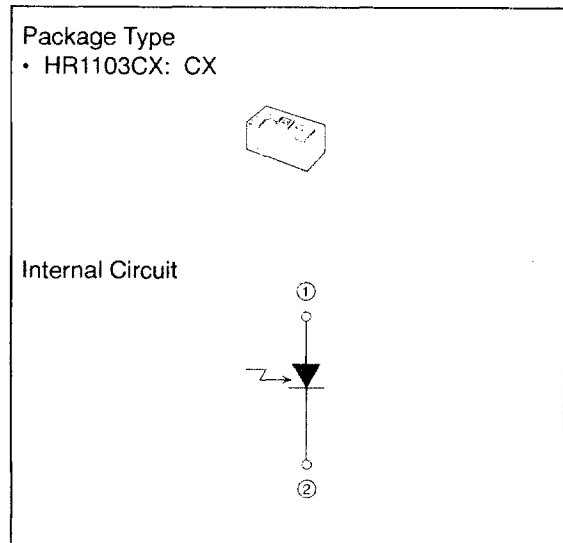
InGaAs PIN Photodiode

Description

The HR1103CX is an InGaAs PIN photodiode which respond to the 1.0 to 1.65 μm band. It has a fast pulse response, and is appropriate as an optical detector in high capacity optical fiber communications systems.

Features

- Fast pulse response: $t_r, t_f = 0.5 \text{ ns typ.}$
- High sensitivity: $S = 0.9 \text{ mA/mW typ.}$
($\lambda_p = 1550 \text{ nm}$)
- Low dark current: $I_{\text{DARK}} = 1 \text{ nA typ.}$
- Effective reception area: $100 \mu\text{m dia.}$
- Low capacitance: $C_t = 1.2 \text{ pF typ.}$



Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Item	Symbol	Rated Value	Units
Reverse voltage	V_R	20	V
Forward current	I_F	1.0	mA
Reverse current	I_R	500	μA
Operating temperature	T_{opr}	-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-45 to +100	$^\circ\text{C}$

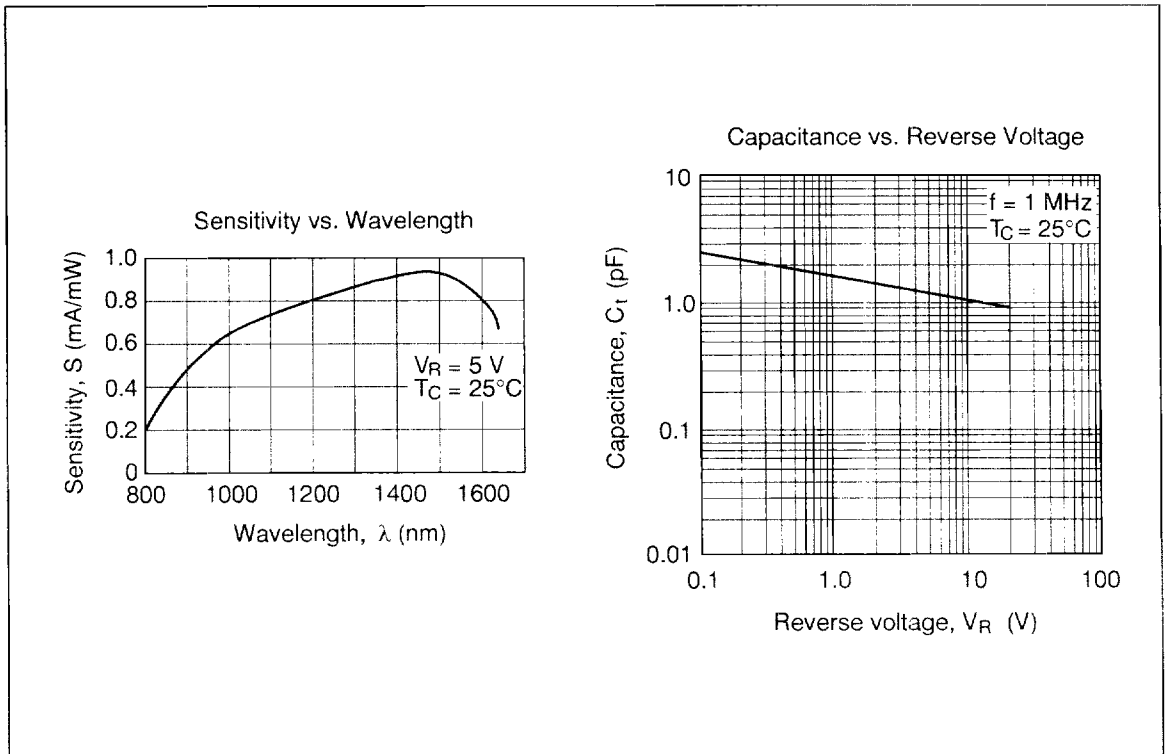
Note: The HR1103CX is designed to be built into optical modules. It is expected that it will be used in hermetically sealed packages. When using this product, be sure to read the "Usage Notes" section.

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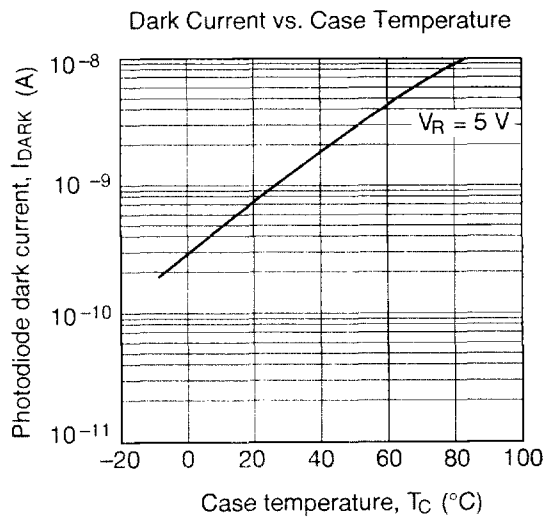
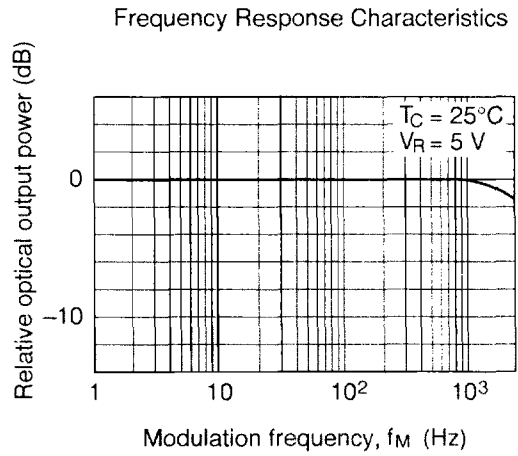
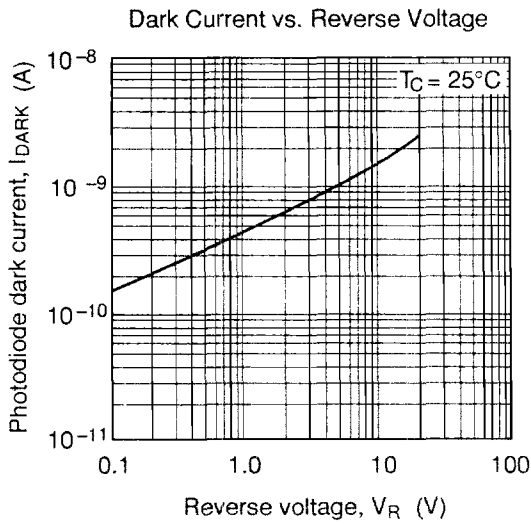
Optical and Electrical Characteristics ($T_C = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Units	Test Conditions
Dark current	I_{DARK}	—	1	50	nA	$V_R = 5\text{ V}$
Capacitance	C_t	—	1.2	2.0	pF	$V_R = 5\text{ V}, f = 1\text{ MHz}$
Sensitivity	S_1	0.73	0.85	—	mA/mW	$V_R = 5\text{ V}, \lambda_p = 1300\text{ nm}$
	S_2	—	0.9	—		$V_R = 5\text{ V}, \lambda_p = 1550\text{ nm}$
Sensitivity saturation bias voltage	$V_{R(S)}$	—	—	2	V	—
Rise time	t_r	—	0.5	—	ns	$V_R = 5\text{ V}, \lambda_p = 1300\text{ nm}$ $R_L = 50\ \Omega$
Fall time	t_f	—	0.5	—	ns	$V_R = 5\text{ V}, \lambda_p = 1300\text{ nm}$ $R_L = 50\ \Omega$

Typical Characteristic Curves



Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)

