

HR1104CX

InGaAs PIN Photodiode

Description

The HR1104CX is an InGaAs PIN photodiode which respond to the 1.0 to 1.65 μm band. It is appropriate for use in high capacity optical fiber communications systems.

Features

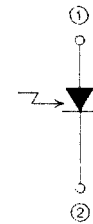
- Fast pulse response: $t_r, t_f = 1.0 \text{ ns typ.}$
- High sensitivity: $S = 0.9 \text{ mA/mW typ. } (\lambda_p=1550 \text{ nm})$
- Low dark current: $I_{\text{DARK}} = 1 \text{ nA typ.}$
- Low capacitance: $C_t = 5 \text{ pF typ.}$
- Effective reception area: $300 \mu\text{m dia.}$

Package Type

- HR1104CX: CX



Internal Circuit



HR1104CX

Note: The HR1104CX 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.

HR1104CX

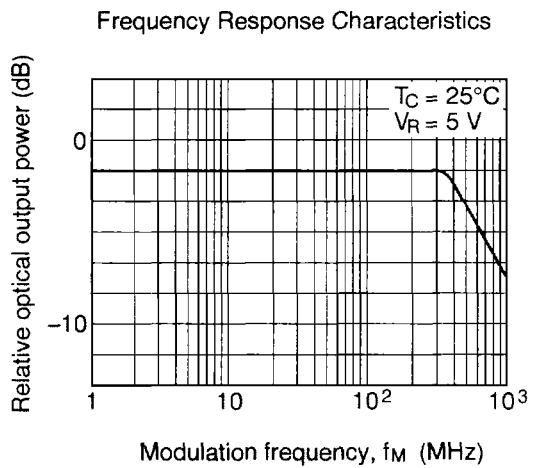
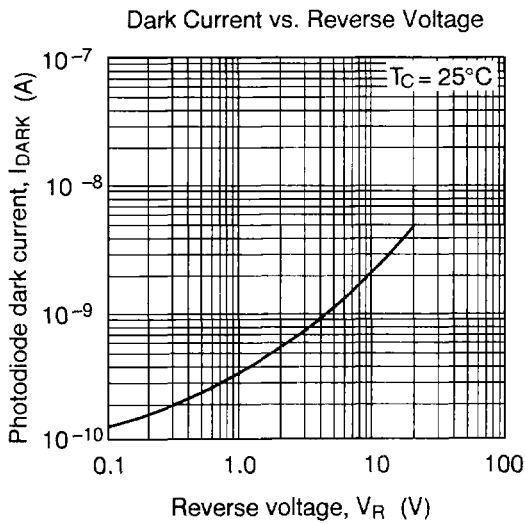
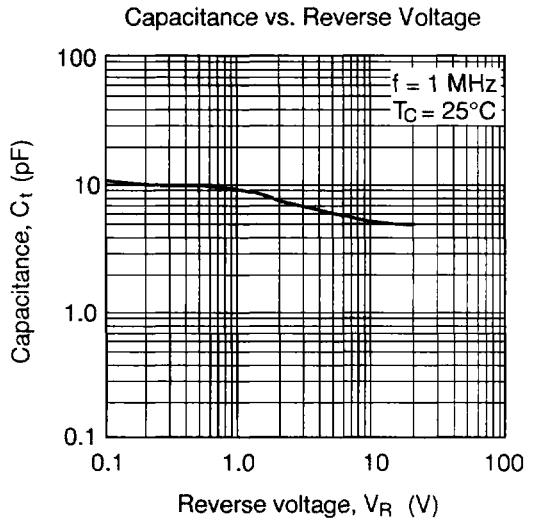
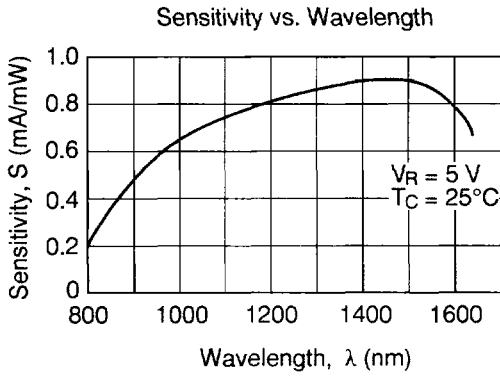
Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Item	Symbol	Rated Value	Units
Reverse voltage	V_R	20	V
Forward current	I_F	4	mA
Reverse current	I_R	2	mA
Operating temperature	T_{opr}	-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-45 to +100	$^\circ\text{C}$

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

Item	Symbol	Min	Typ	Max	Units	Test Conditions
Dark current	I_{DARK}	—	1	30	nA	$V_R = 5\text{ V}$
Capacitance	C_t	—	5	10	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	—	1.0	—	ns	$V_R = 5\text{ V}$, $\lambda_p = 1300\text{ nm}$ $R_L = 50\ \Omega$
Fall time	t_f	—	1.0	—	ns	$V_R = 5\text{ V}$, $\lambda_p = 1300\text{ nm}$ $R_L = 50\ \Omega$

Typical Characteristic Curves



Typical Characteristic Curves (cont)

