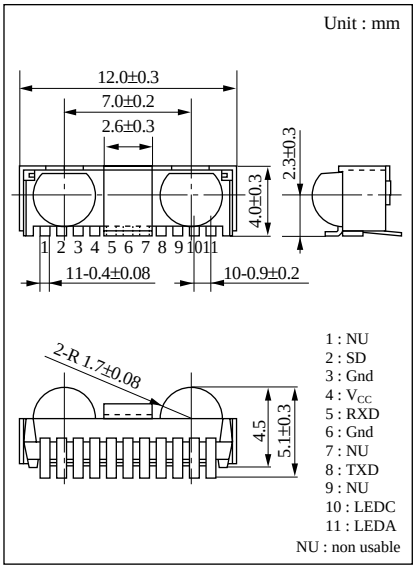
CND0004A

Optical Transceiver Module for IrDA



■ Overview

CND0004A is a high speed response, high reliability infrared data link device. It consists of a high speed GaAlAs infrared light emitting diode, a high speed PIN photodiode and a post processing IC, and they are housed in a single package.

■ Features

- Small size package
- Compatible with reflow soldering process
- Low voltage driving capability, operating source voltage (2.7 to 5.5 V)
- IrDA Ver 1.0 compatible (max. 115.2 kbps)
- Includes shutdown function

■ Absolute Maximum Ratings (Ta = 25˚C)

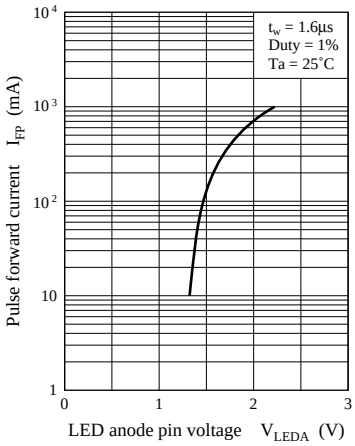
Parameter		Symbol	Ratings	Unit
Transmitter TX	LED peak forward current	I_{FP}*	400	mA
	Data input voltage	V_I	– 0.5 to V_{CC}+0.5	V
Receiver RX	Supply voltage	V_{CC}	– 0.5 to +7	V
	Output sinking current	I_{OL}	10	mA
	Data output voltage	V_O	– 0.5 to V_{CC}+0.5	V
Temperature	Operating ambient temperature	T_{opr}	0 to +70	˚C
	Storage temperature	T_{stg}	–20 to +85	˚C

* Duty ratio ≤ 20 %, pulse width ≤ 90 µs

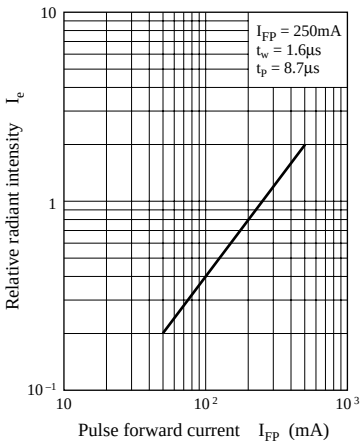
■ Electro-Optical Characteristics (Ta = 25˚C)

Parameter		Symbol	Conditions	min	typ	max	Unit
Operating supply voltage		V_{CC}		2.7	5	5.5	V
Supply current (Receiver)		I_{CC}	V_{CC} = 5V, V_I = 0.5V, V_{SD} ≤ 0.5V (light shut off)			1.2	mA
Data rates				2.4		115.2	kbps
TX	High level input voltage	V_{IH}	V_{CC} = 2.7 to 5.5V, V_{SD} ≤ 0.5V	2.5		V_{CC}	V
	Low level input voltage	V_{IL}	V_{CC} = 2.7 to 5.5V, V_{SD} ≤ 0.5V	0		0.5	V
	Rise time, fall time	t_r, t_f	V_{CC} = 5V, R_{LED} = 12Ω			0.6	µs
RX	Maximum transfer distance	L_{max}	Transmitter side 40mW/sr	1			m
	High level output voltage	V_{OH}	I_{OH} ≤ 20µA (light shut off)	V_{CC} – 0.5			V
	Low level output voltage	V_{OL}	I_{OL} ≤ 4mA (light receiving)			0.5	V

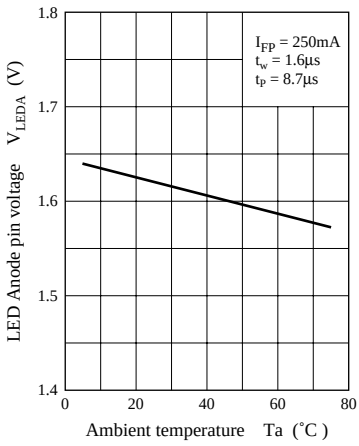
I_{FP} — V_{LEDA}



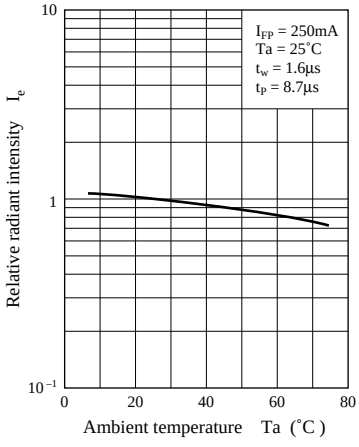
I_e — I_{FP}



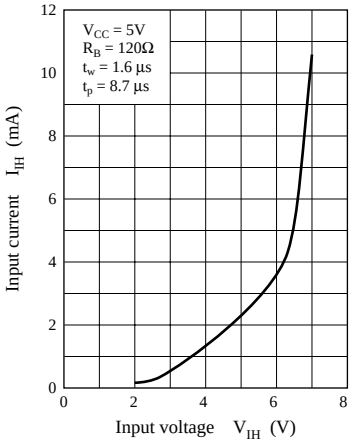
V_{LEDA} — Ta



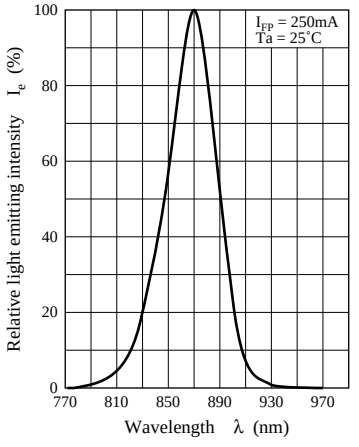
I_e — Ta



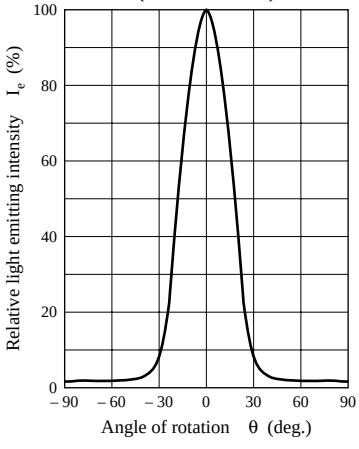
I_{IH} — V_{IH}



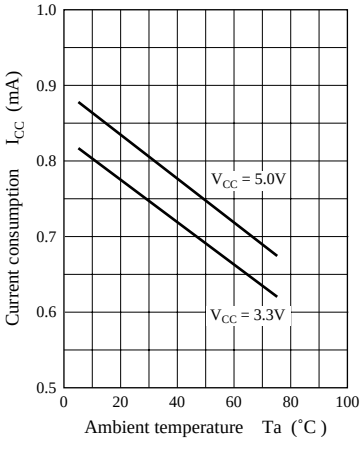
I_e — λ



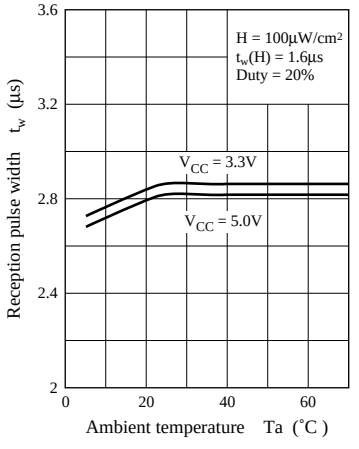
Directivity characteristics (Transmitter)



I_{CC} — Ta



t_w — Ta



Directivity characteristics
(Receiver)