LELO_EX_SKY130A

Who

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Why

Current Mirror

How

Followed the tutorial

What

What	Cell/Name
Schematic	design/LELO_EX_SKY130A/LELO_EX.sch
Layout	design/LELO_EX_SKY130A/LELO_EX.mag

Signal interface

Signal	Direction	Domain	Description
IBPS_5U	Input	VDD_1V8	Input current, nominally 5 uA
IBNS_20U	Output	VDD_1V8	Output current, nominally 20 uA
VSS	Input	Ground	

Key parameters

Parameter	Min	Typ	Max	Unit
Technology		Skywater 130 nm		
AVDD	1.7	1.8	1.9	V
Temperature	-40	27	125	C

Install

Clone LELO_EX_SKY130A

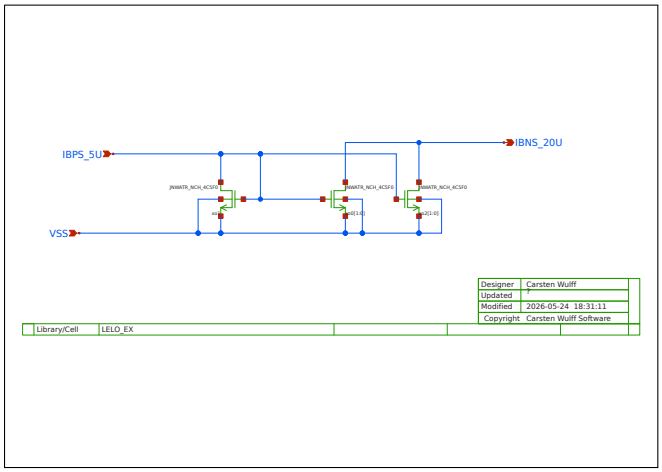
To install, do the following

```
python3 -m pip install cicconf
git clone --recursive https://github.com/wulffern/lelo_ex_sky130a lelo_ex_sky130a
cicconf --rundir ./ --config lelo_ex_sky130a/config.yaml clone --https
```

Schematics

LELO_EX_SKY130A

LELO_EX: A current mirror



Simulations

LELO_EX_SKY130A

LELO_EX: README.md: “5d6a37b Sat Jan 17 22:15:16 2026 +0100”

TB_NCM

Transient analysis (tran): Check transient operation

Name	Parameter	Description		Min	Typ	Max	Unit
Output current	**ibns_20u**		**Spec**	**19.000**	**20.000**	**21.000**	**uA**
			Sch_typ		20.592		
			Sch_etc	20.469	20.600	20.728	
			Sch_3std	**17.423**	20.293	**23.164**	
			Lay_typ		20.628		
			Lay_etc	20.514	20.638	20.758	
			Lay_3std	**17.805**	20.796	**23.787**	
Gate-Source voltage	**vgs_m1**		**Spec**	**0.300**	**0.600**	**0.800**	**V**
			Sch_typ		0.686		
			Sch_etc	0.604	0.685	0.758	
			Sch_3std	0.677	0.685	0.694	
			Lay_typ		0.686		
			Lay_etc	0.604	0.685	0.758	
			Lay_3std	0.678	0.686	0.694	