Science Vision
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CIRCUIT ANALYSIS REPORT

Part Number

——Device Type (RF, DDR, Sensor, etc.)

Science Vision
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Part No.	XXXX
Date	2013-03-20

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- DEVICE SUMMARY
- DEVICE DEFINITION
- ARCHITE CTURE & GENERAL OVERVIEW
- SCHEMATIC

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Chapter 1

PROJECT INTRODUCTION

1. PROJECT INTRODUCTION

1.1 Chip Description

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XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX.

1.2 Chip Features

- XXXXXXXXXXXXXXXX
- XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
- XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
- XXXXXXXXXXXXXXXXXXXXX
- XXXXXXXXXXX
- XXXXXXXXXXXXXXXXX
- XXXXXXXXXX XXXX XXXXXXX
- XXXXXXXXXXXX
- XXXXXXXXXXXXXXXXX
- XXXXXX
- XXXXX XXXXXXXX

1.3 Applications

- XXXXXXXXXXXXXXXXX

1.4 ScienceVision Work Description

1.According to the given requests, all circuits have been extracted from the target chip.

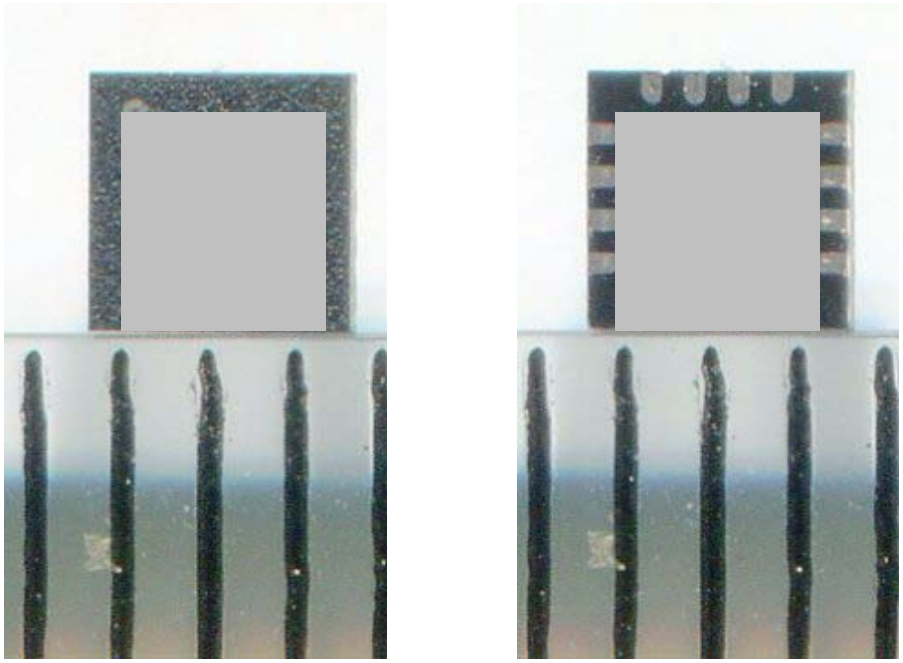
2.It mainly includes the following modules: OUTP1 Boost Converter, OUTP2 Boost Converter, OUTN Buck Boost Converter, Reference, Programming Vneg, Protection and Detector, Control and Logic, and so on. Each block is hierarchically constructed in "Top" schematic view, which helps the client to understand in an efficient way.

Chapter 2

DEVICE SUMMARY

2. DEVICE SUMMARY

2.1 Package Marking



Top View Bottom View

Figure 2.1 Package Marking

2.2 Die Marking

Die Marking Picture1

Die Marking Picture2

Figure 2.2 Die Markings

2.3 Die Image

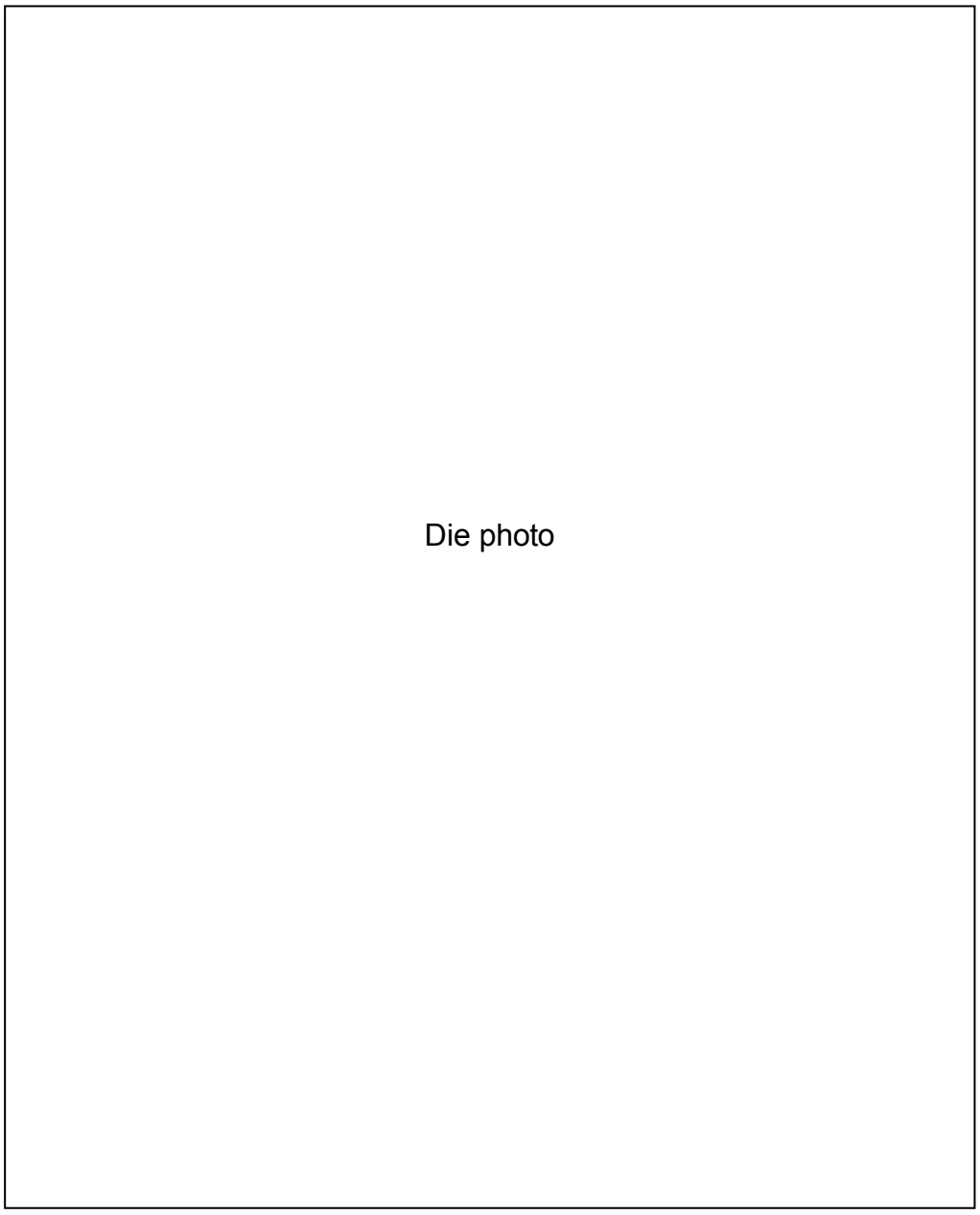


Figure 2.3.1 Metal4 Image

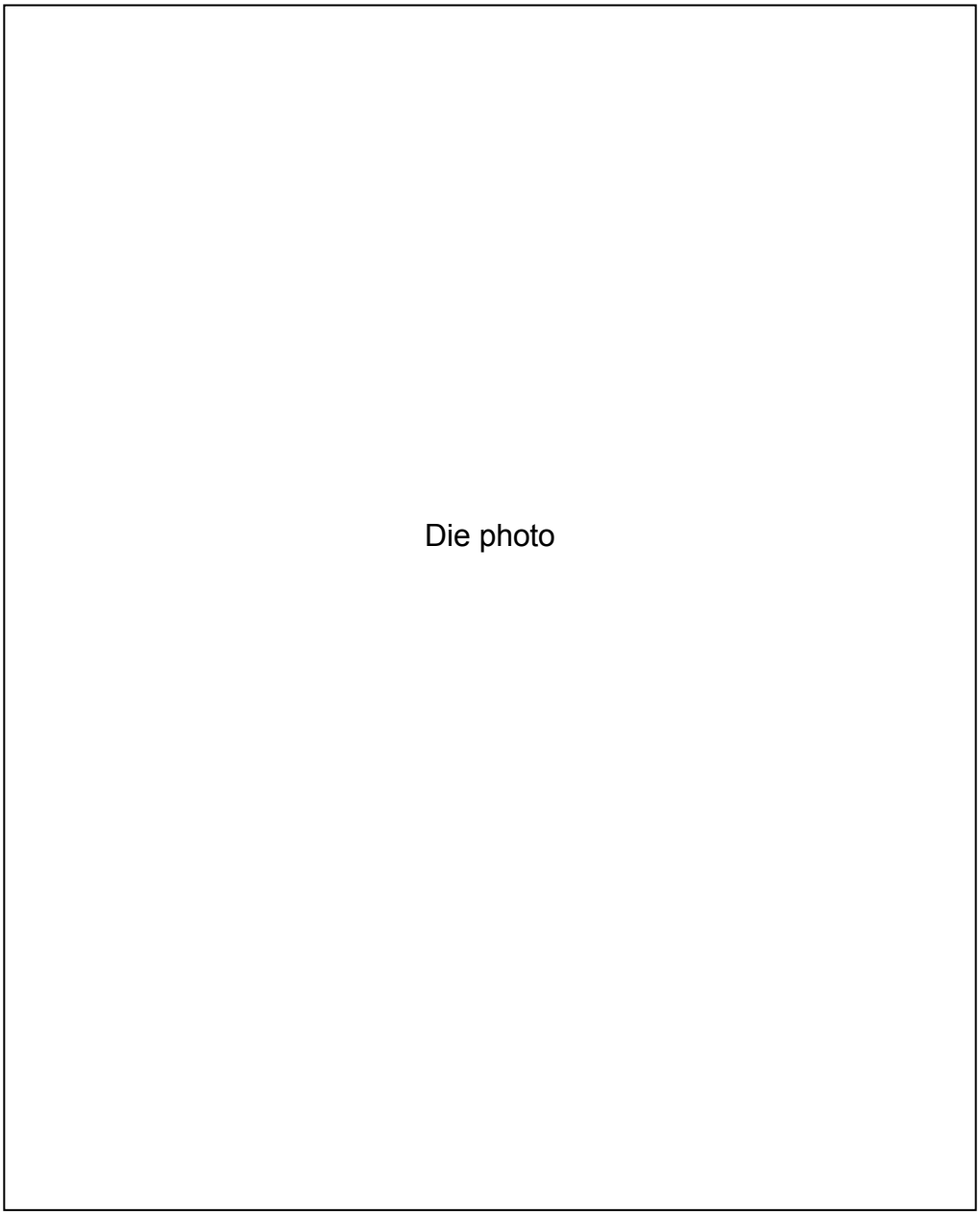


Figure 2.3.2 Metal3 Image

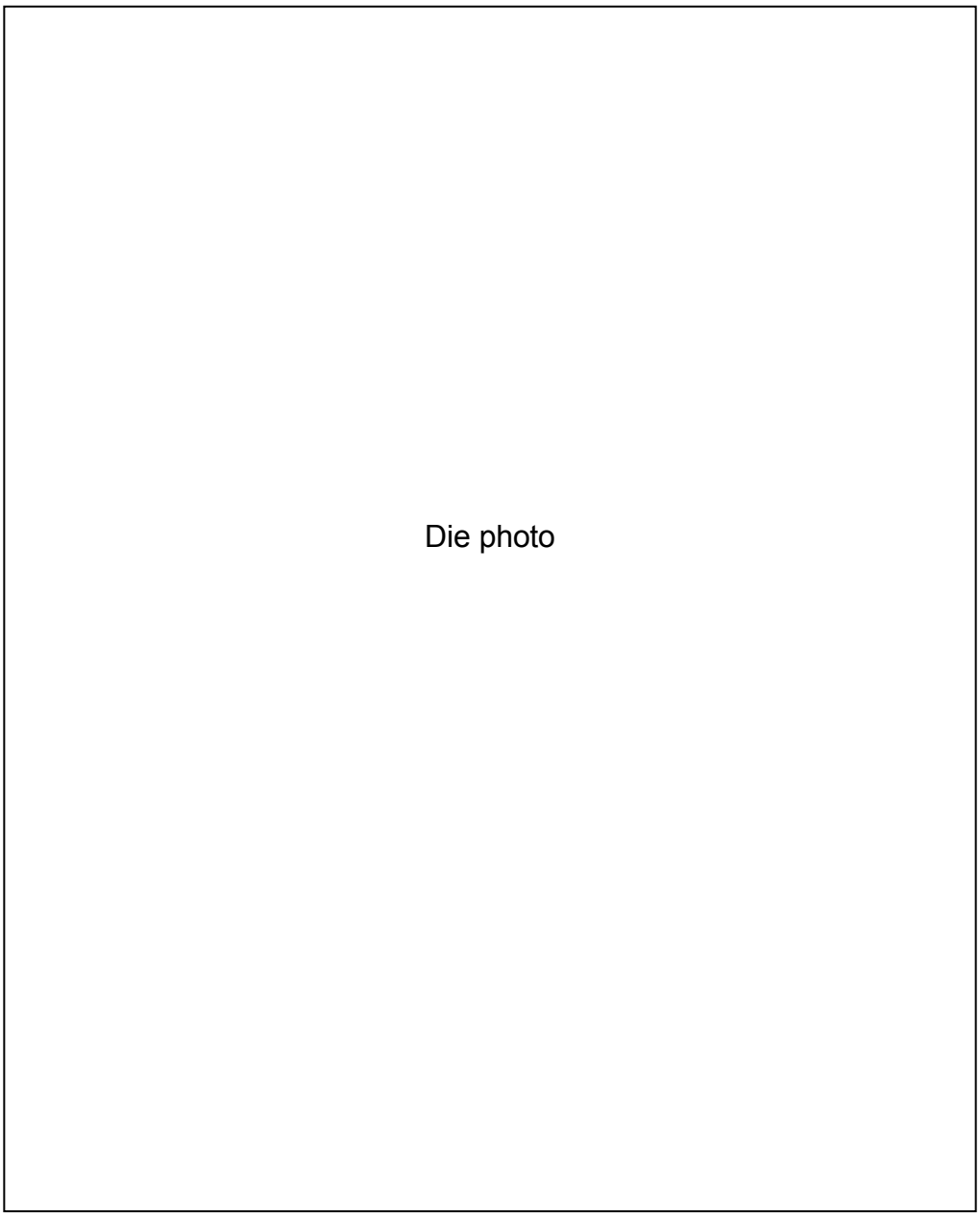


Figure 2.3.3 Metal2 Image

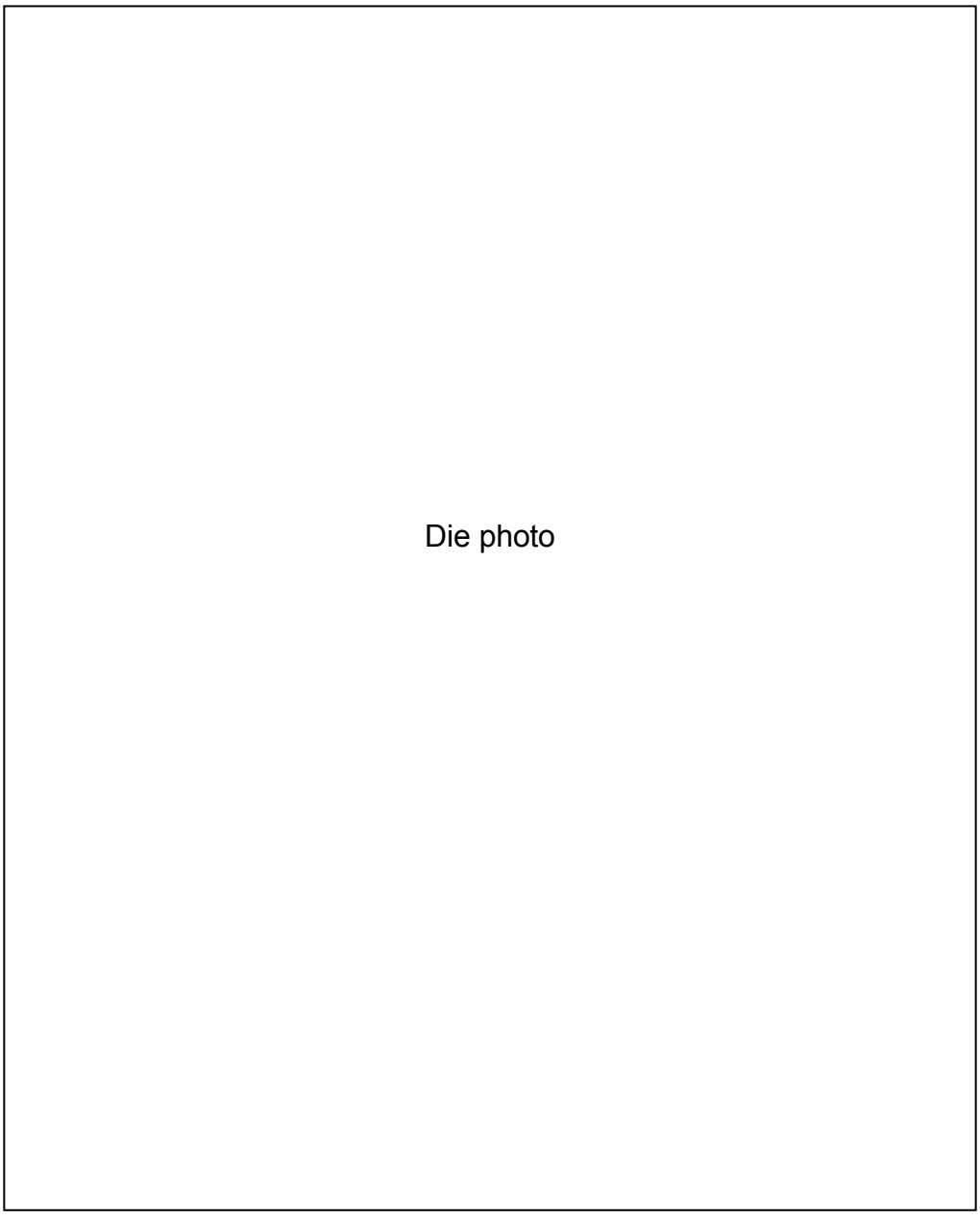


Figure 2.3.4 Metal1 Image

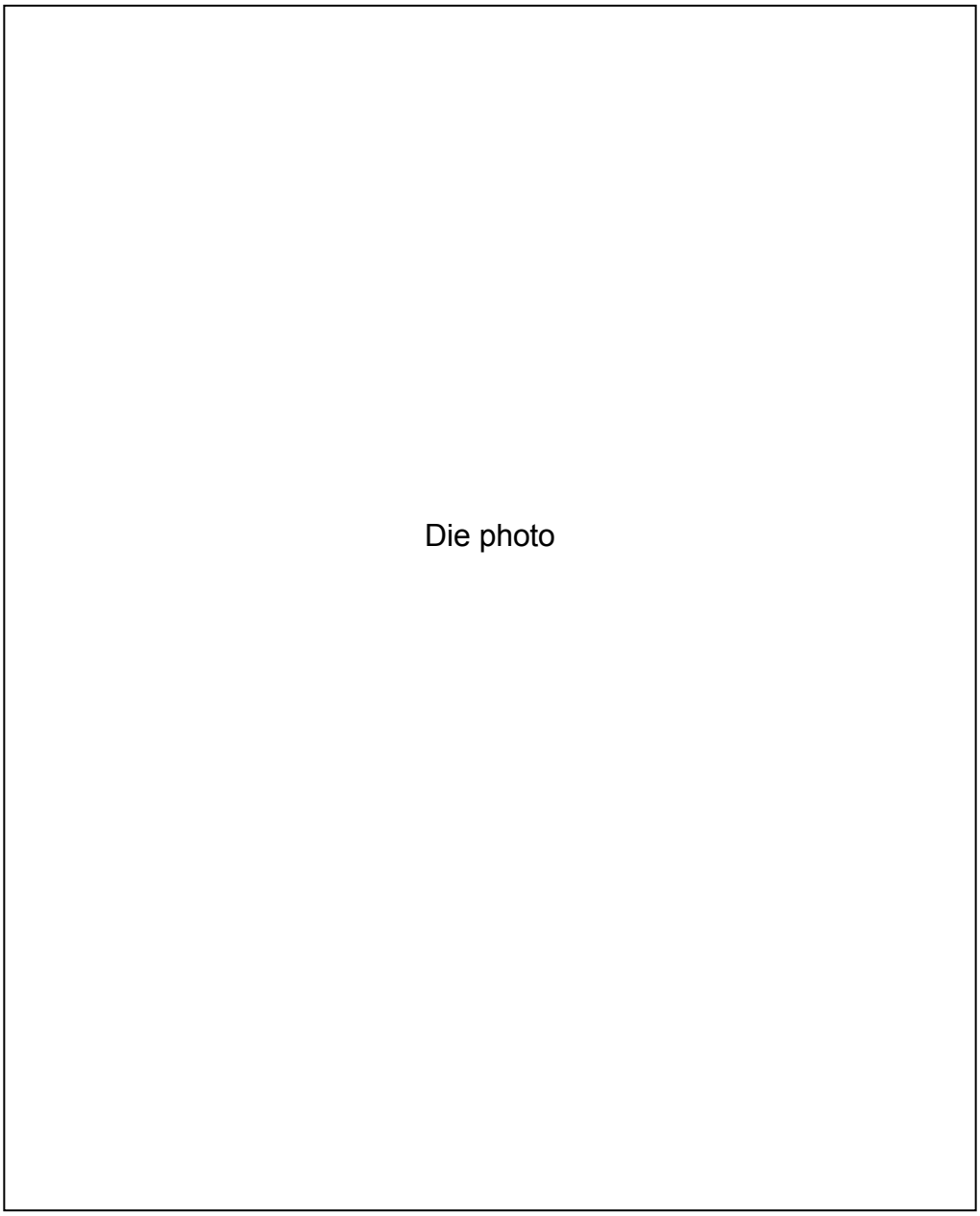


Figure 2.3.5 PL Image

2.4 Pad Definition

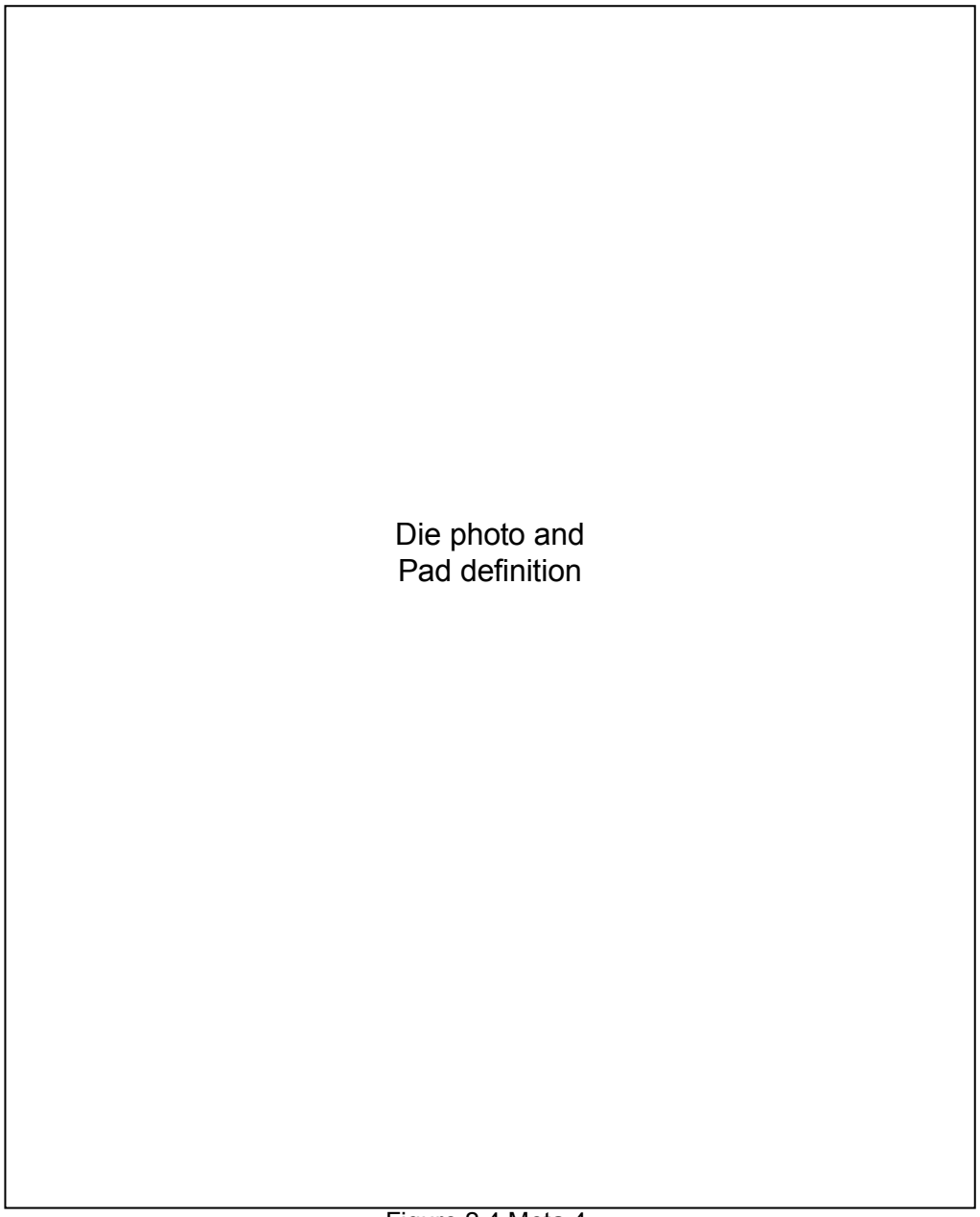


Figure 2.4 Meta 4

2.5 Part Identification

Item	Content
Manufacture	XXXX XXXX
Part Number	XXXXX
Type	XXXX XXXXXX
Package Type	XXXXX
Die Marking	XX; XXXX; XXXX
Die Size	X.XXX mm × X.XXX mm

2.6 Process

Item	Content
Technology	XXXXX
Ploy Interconnect Layers	X
Metal Interconnect Layers	X
Resistor Type	XXX, XXXX, XXXX, XXXX
Capacitor Type	XXXX, XXXX, XXXX, XXXX

Chapter 3

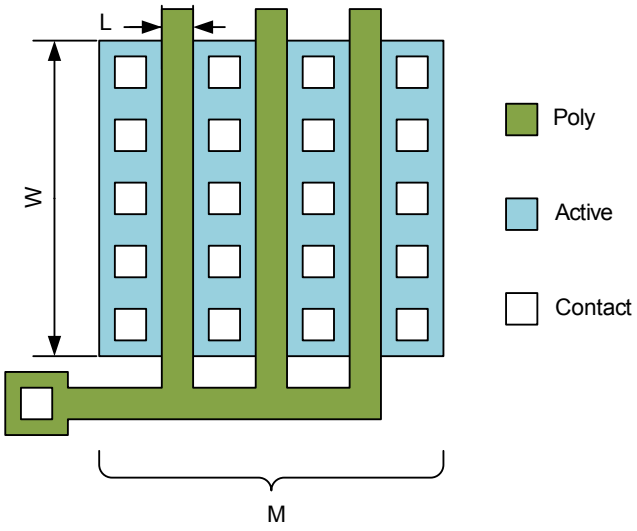
DEVICE DEFINITION

3. DEVICE DEFINITION

3.1 Parameter Definition

Name	Definition	Used in
W	Width	NMOS, PMOS, PMOS4, HVNMOS, HVNMOS4, HVPMOS, HVPMOS4, DNMOS, DPMOS, DPMOS4, NMOSCAP, PMOSCAP, PIPCAP, IDCAP_VSP, RES_NIDIFF, RES_PDIFF, RES_POLY
L	Length	NMOS, PMOS, PMOS4, HVNMOS, HVNMOS4, HVPMOS, HVPMOS4,DNMOS,DPMOS,DPMOS4, NMOSCAP, PMOSCAP, PIPCAP, IDCAP_VSP, RES_NIDIFF, RES_PDIFF, RES_POLY
SE	Square of Emitter	VNPN
PE	Perimeter of Emitter	VNPN
S	Square	DIODE

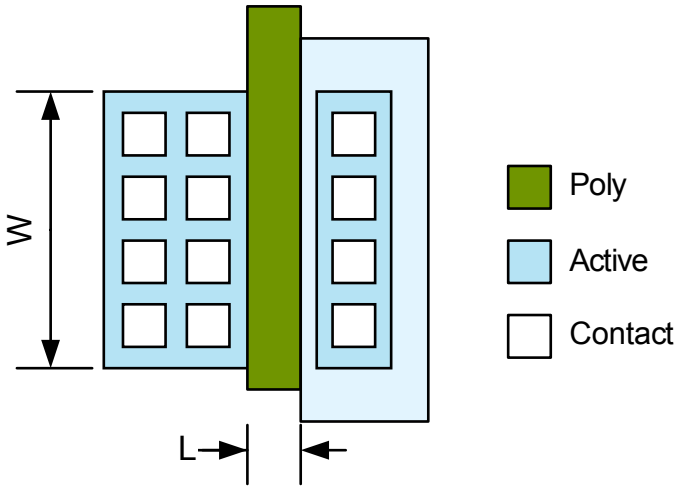
3.1.1 MOS Transistor



MOS Transistor

Figure 3.1.1 MOS Transisitor

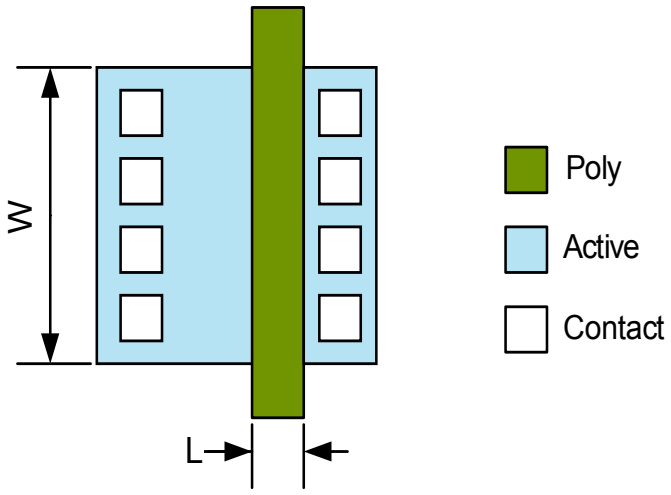
3.1.2 DMOS Transistor



DMOS

Figure 3.1.2 DMOS Transisitor

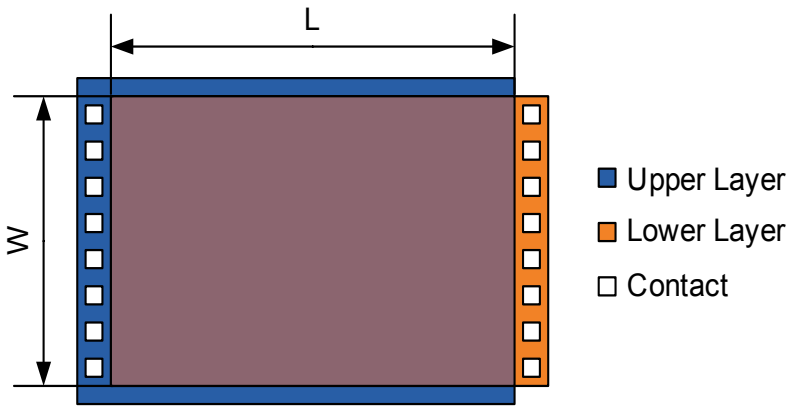
3.1.3 HVMOS Transistor



HVMOS

Figure 3.1.3 HVMOS Transisitor

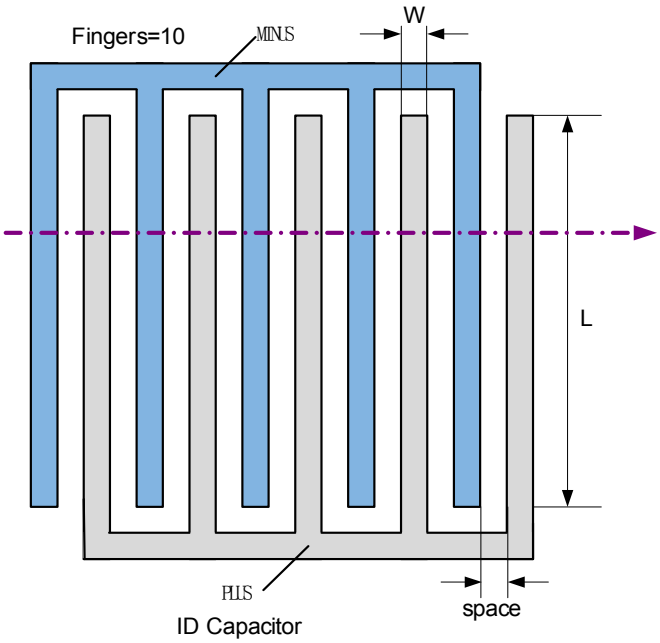
3.1.4 Capacitor



Capacitor

Figure 3.1.4.1 PIP Capacitor

Figure 3.1.4.2 MOS Capacitor



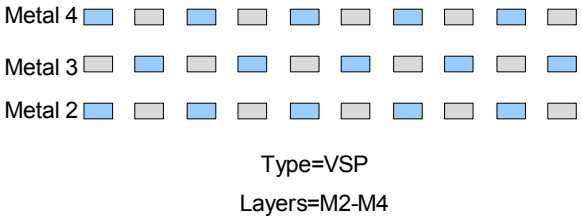
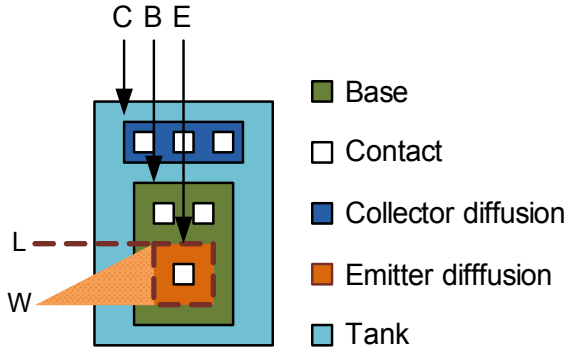


Figure 3.1.4.3 Interdigital Capacitor

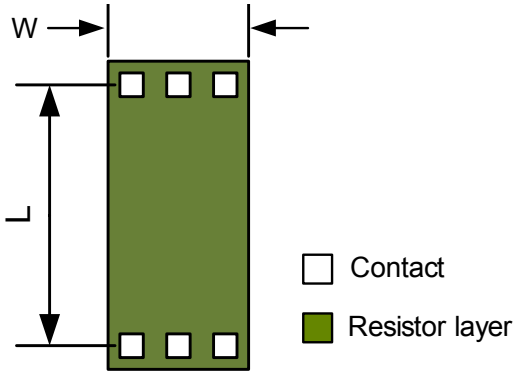
3.1.5 Bipolar Junction Transistor



Bipolar Transistor

Figure 3.1.5 VNPN

3.1.6 Resistor



Resistor

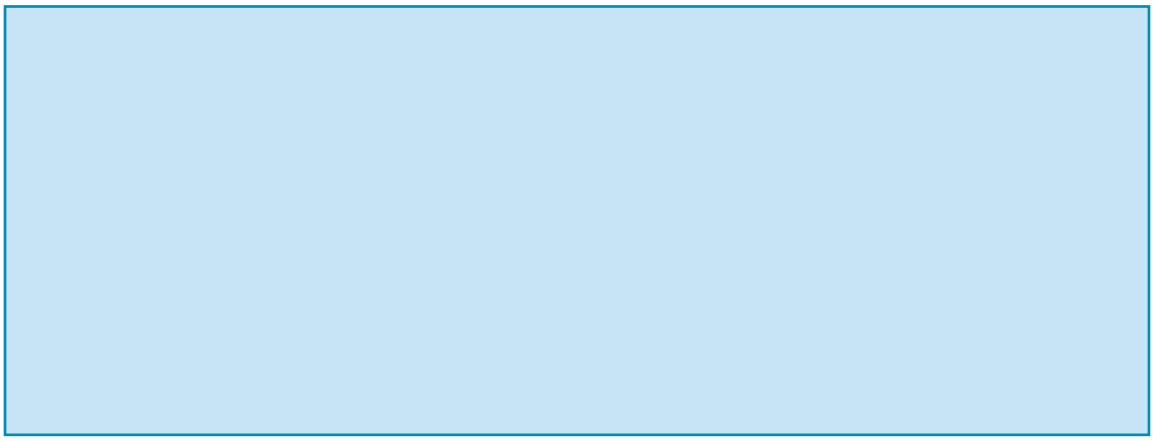


Figure 3.1.6.1 Poly Resistor

Figure 3.1.6.2 NDIFF Resistor

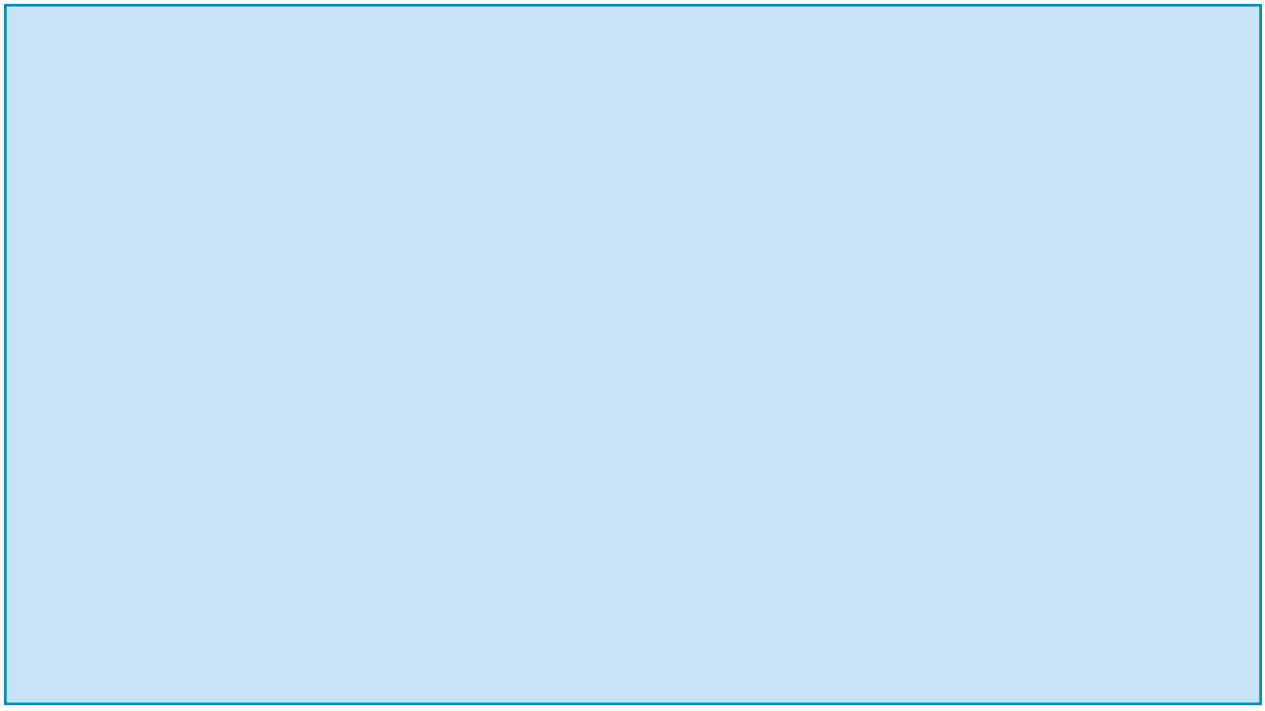
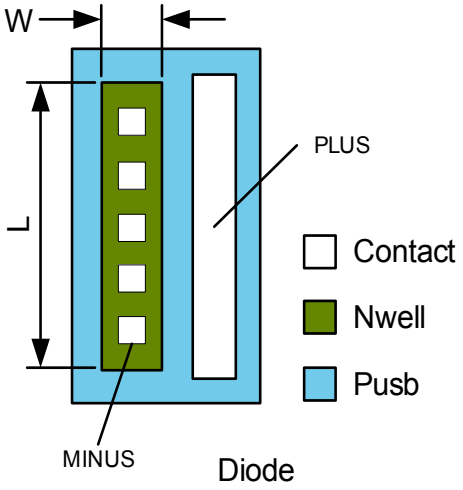


Figure 3.1.6.3 PDIFF Resistor

3.1.7 Diode



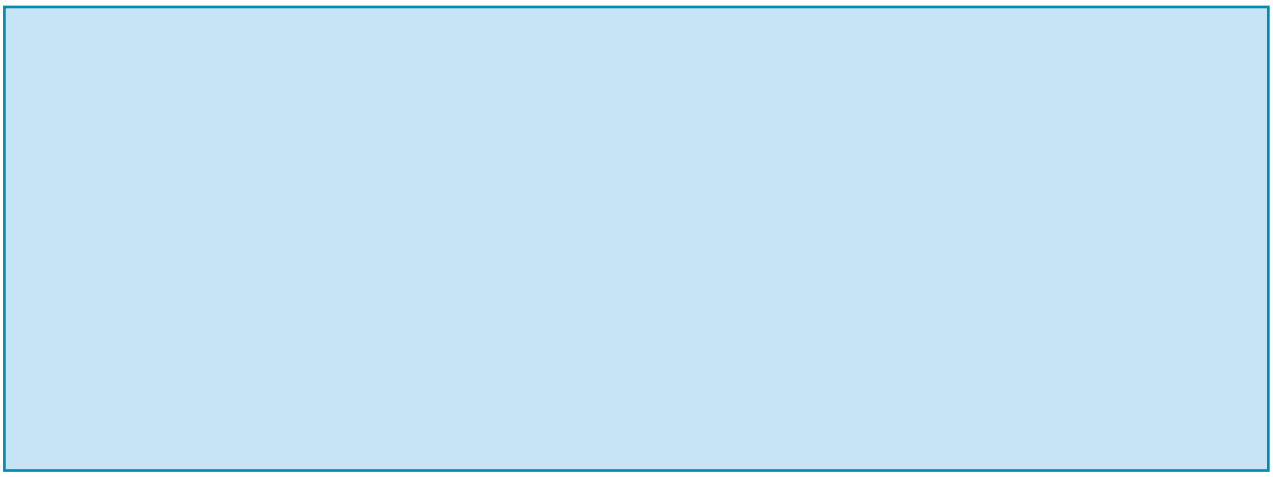
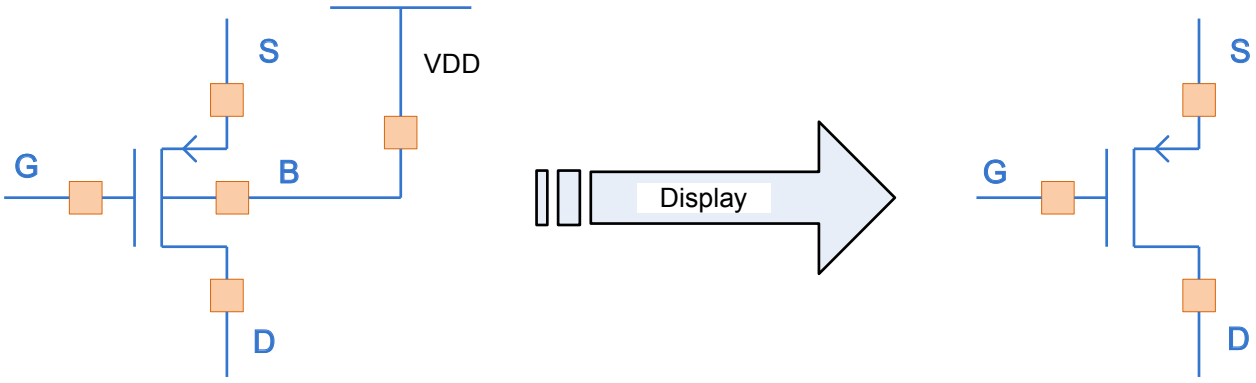
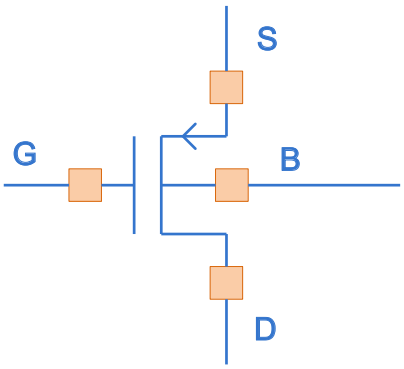


Figure 3.1.7 Diode

3.2 Three-port and Four-port MOSFET Definition

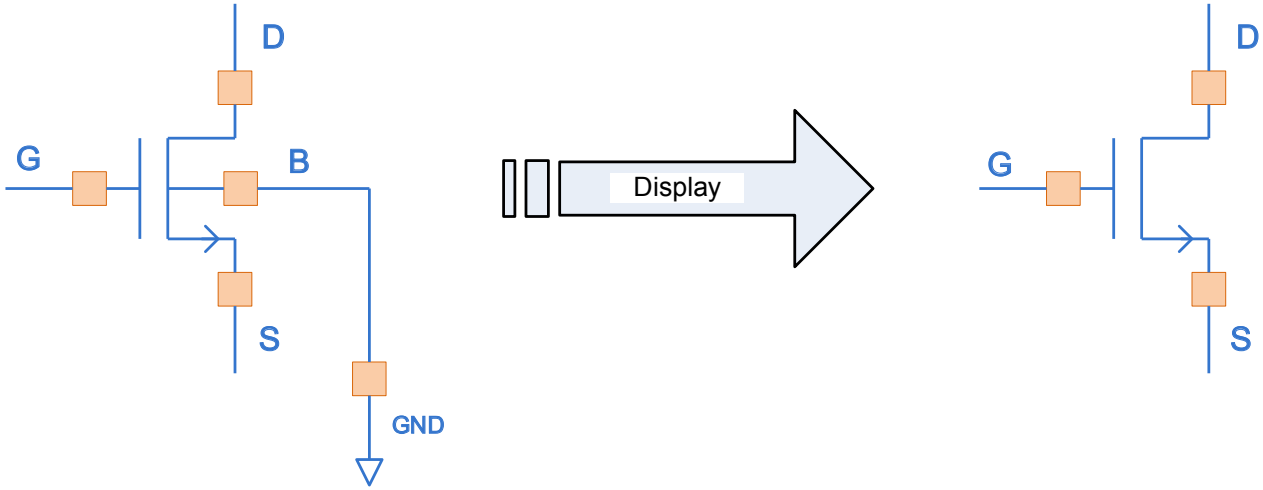


Three-port Model

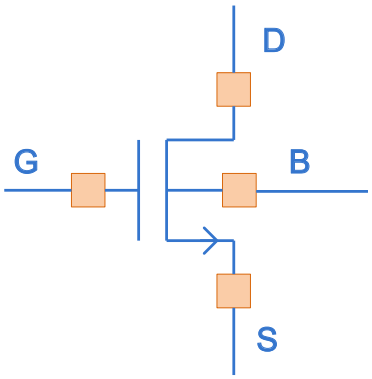


Four-port Model

PMOS transistor whose bulk connected to the power (VDD) is simplified to three-port.
Otherwise four-port model will be used to show the bulk connection.



Three-port Model



Four-port Model

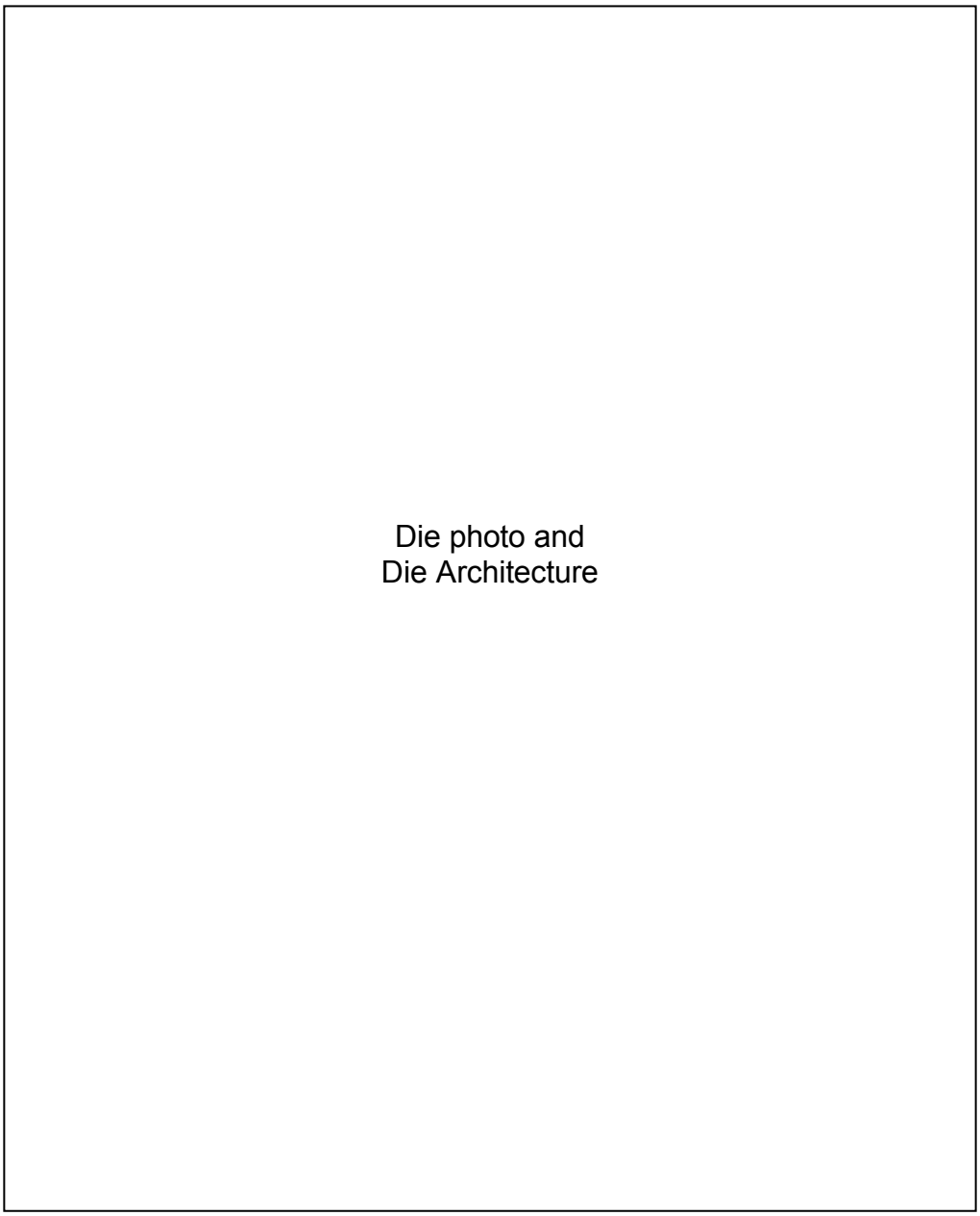
NMOS transistor whose bulk connected to the ground (GND) is simplified to three-port. Otherwise four-port model will be used to show the bulk connection.

Chapter 4

ARCHITECTURE & GENERAL OVERVIEW

4. ARCHITECTURE & GENERAL OVERVIEW

4.1 Die Architecture

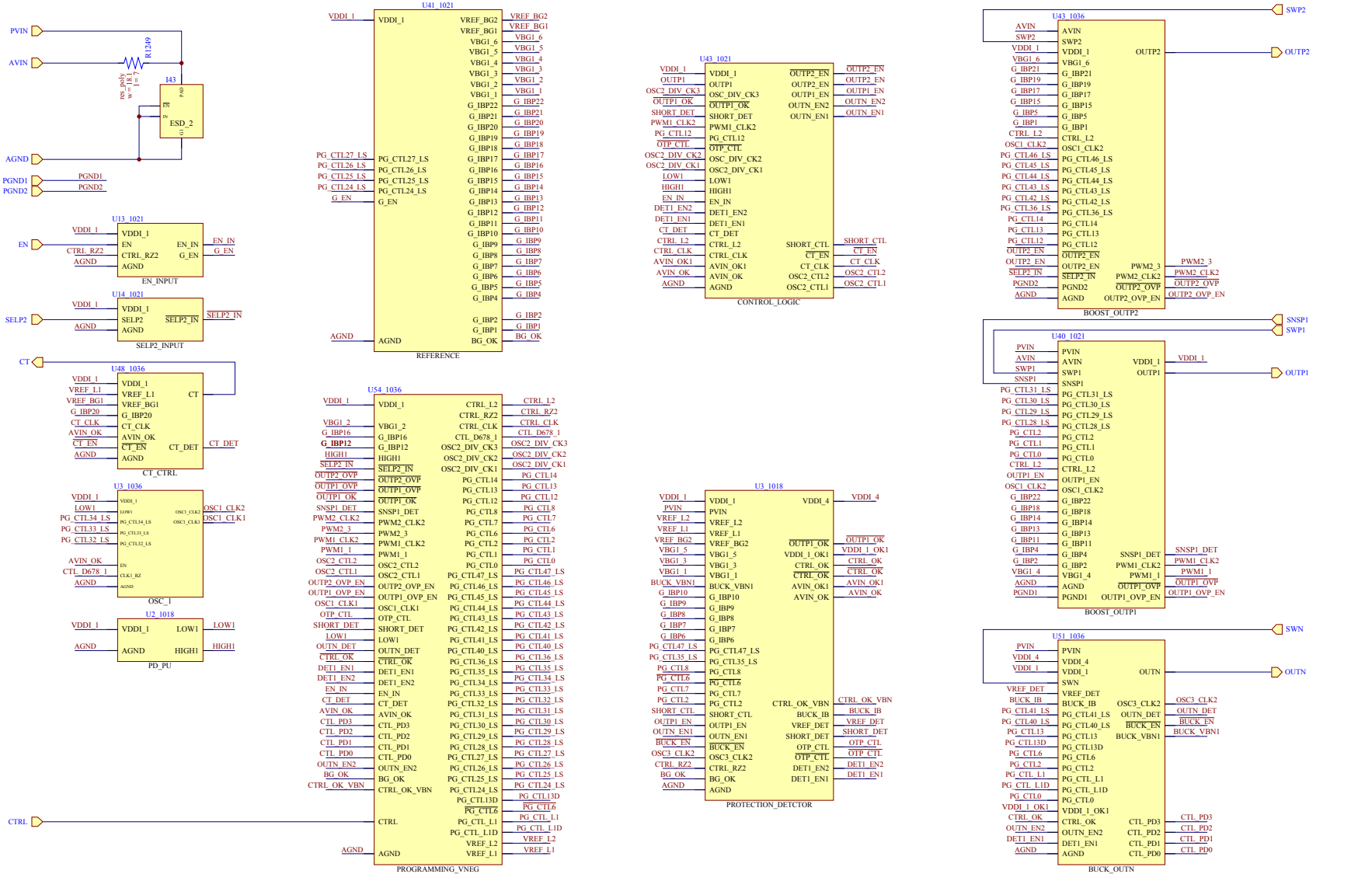


PL Image

Figure 4.1 Die Architecture

Chapter 5

SCHEMATIC



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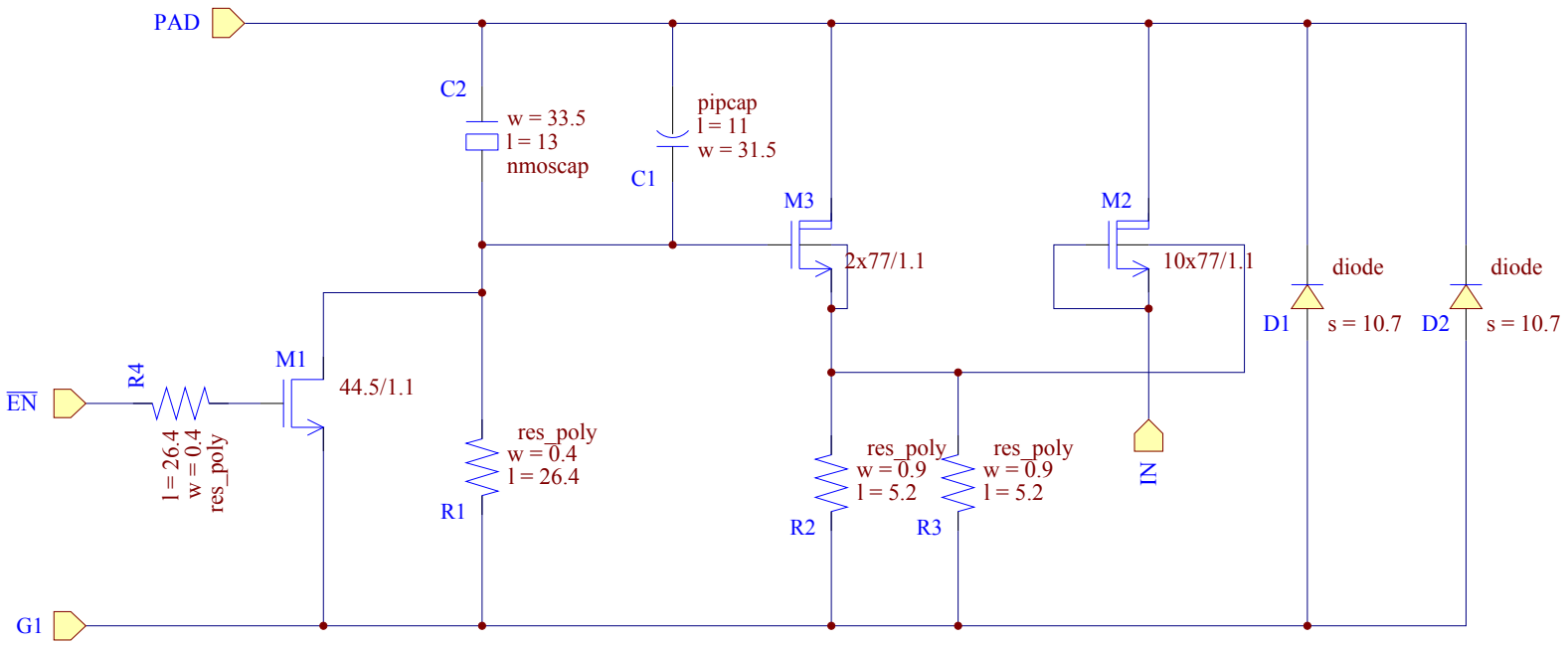
♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”. Device sizes are in microns (as measured from photographs).

5. TOP	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



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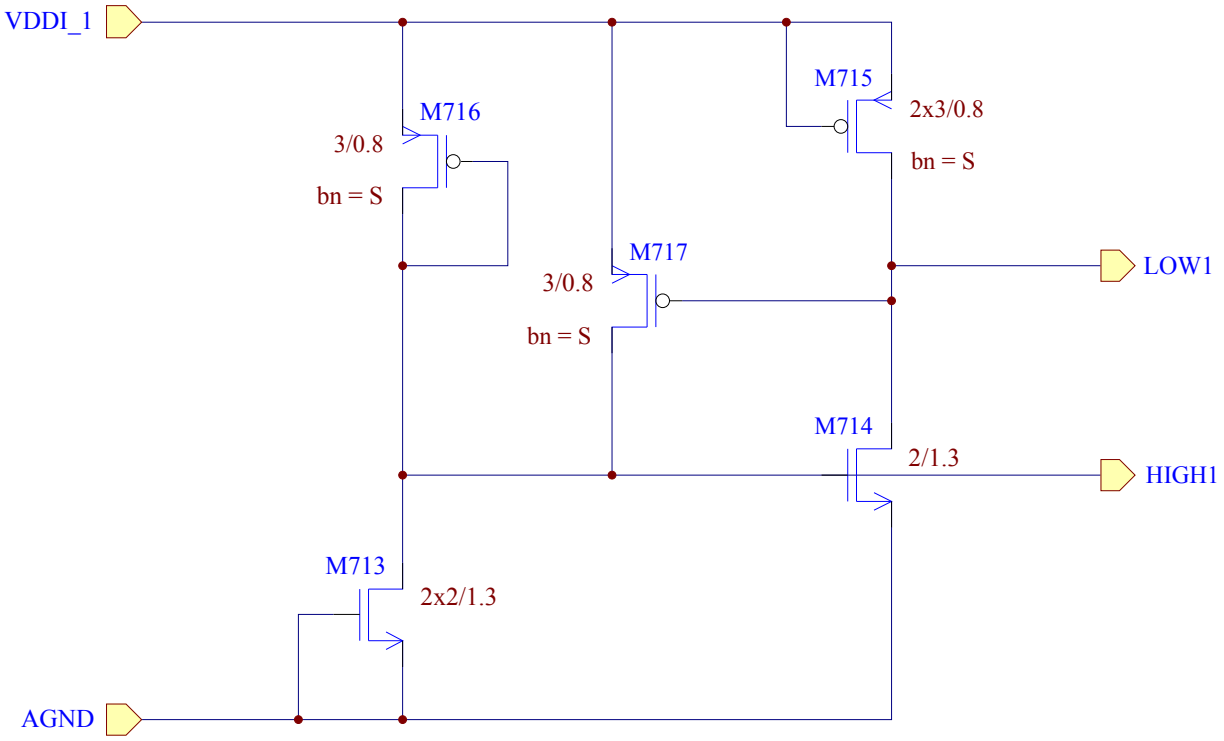
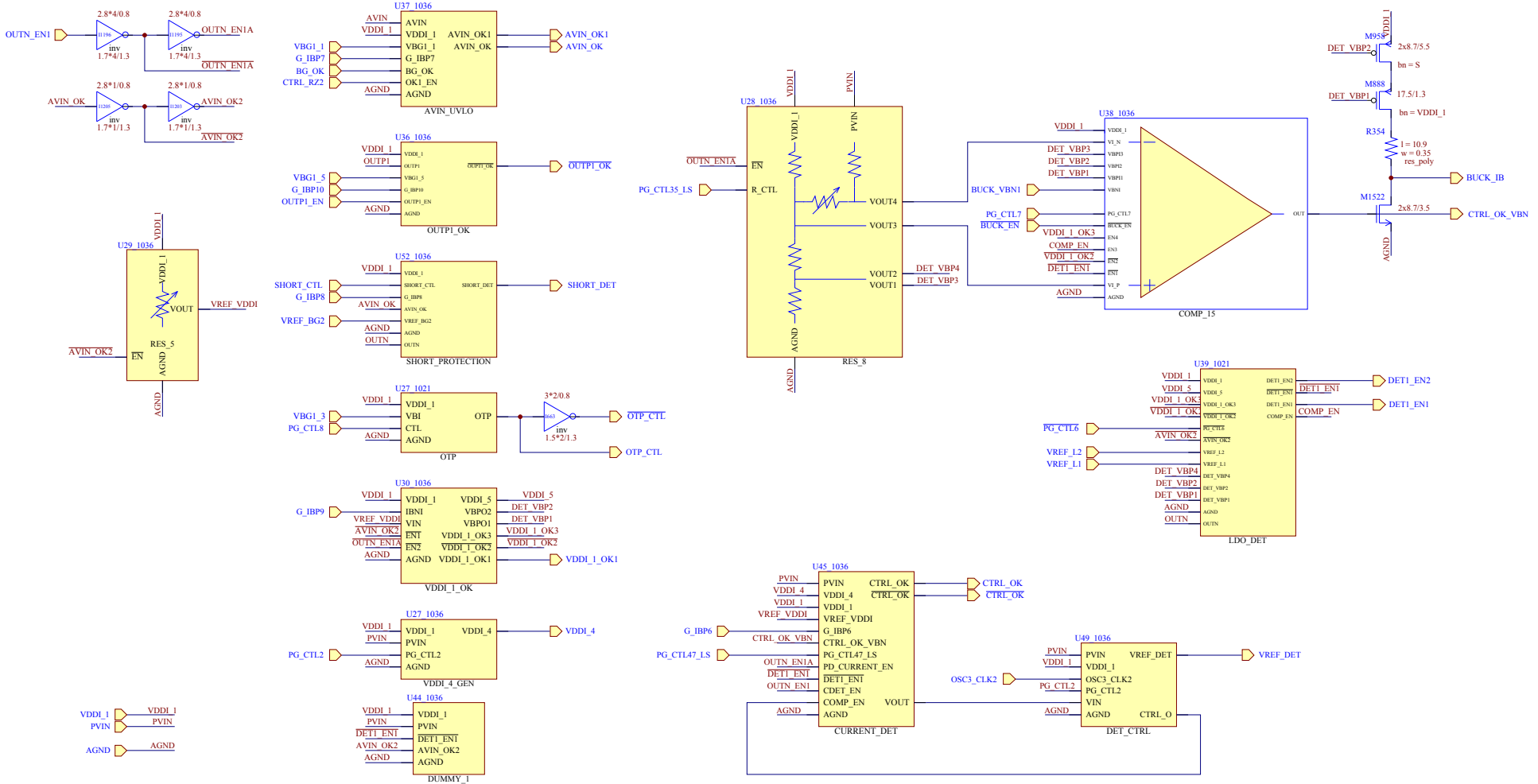
♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.1 ESD_2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm



5.2 PD_PU	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



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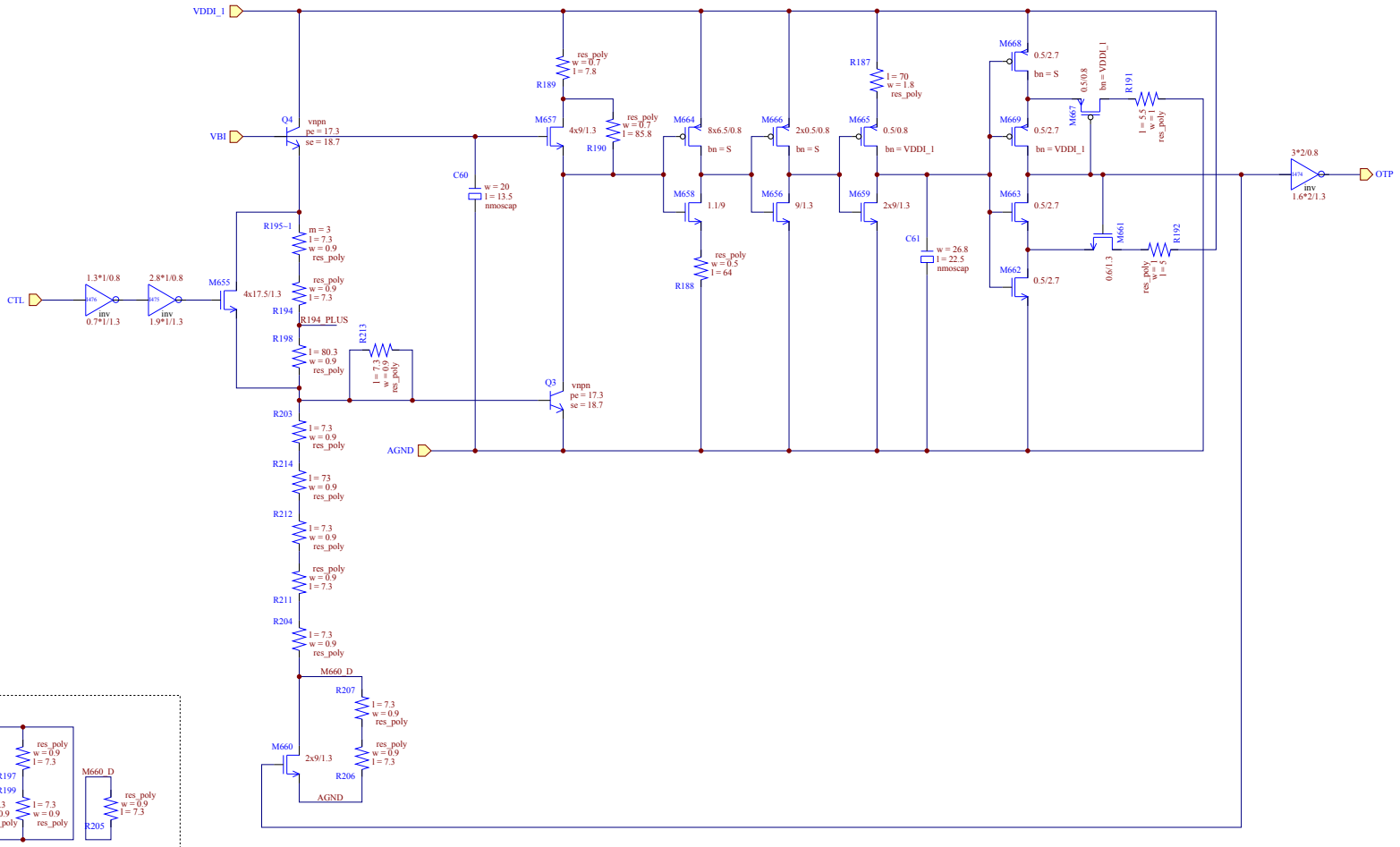
♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.

Device sizes are in microns (as measured from photographs).

5.3 PROTECTION_DETECTOR	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm



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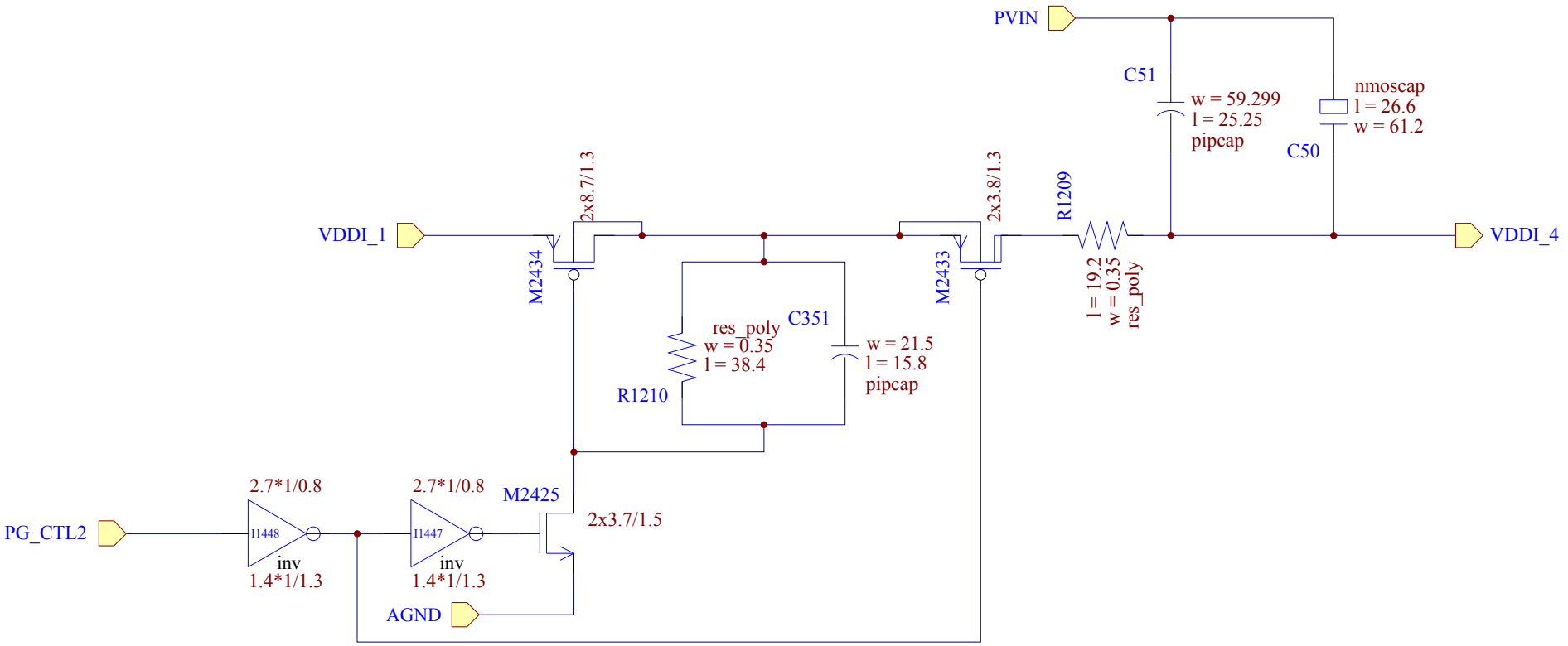
♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.

Device sizes are in microns (as measured from photographs).

5.3.1 OTP	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



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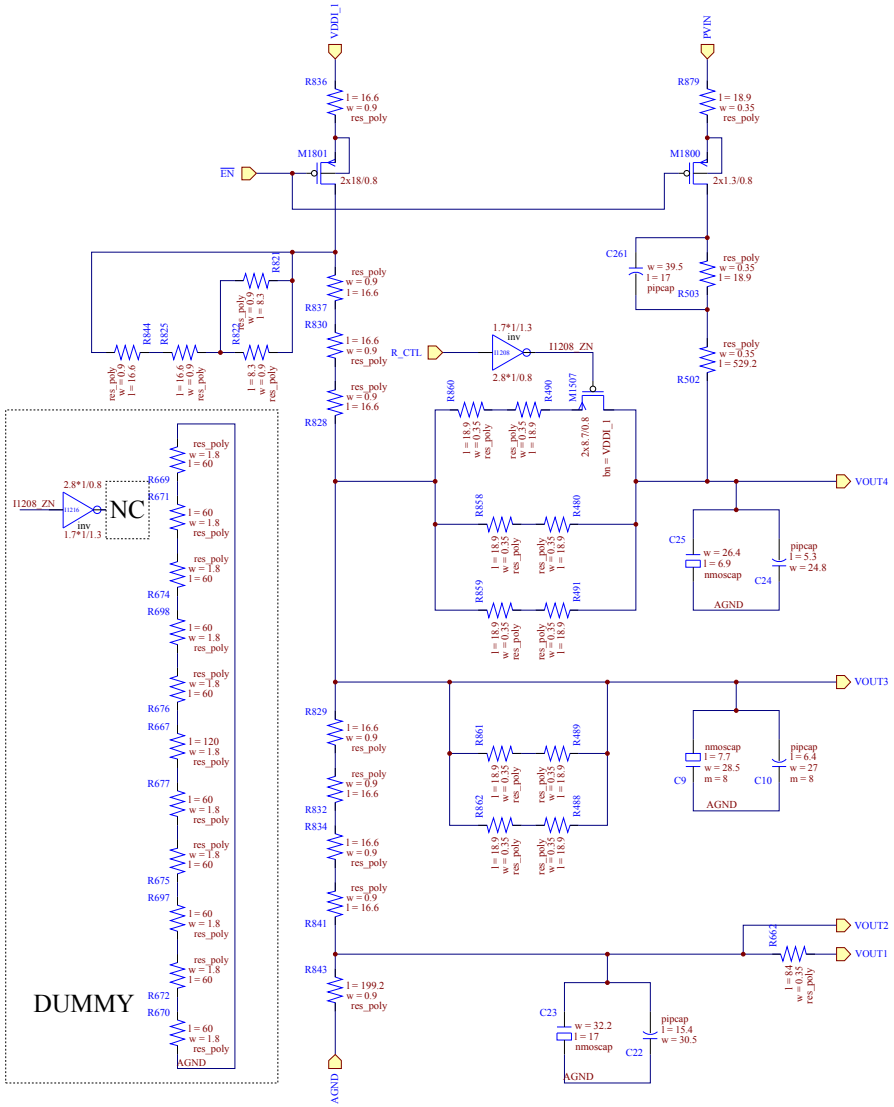
♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.2 VDDI_4_GEN	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm



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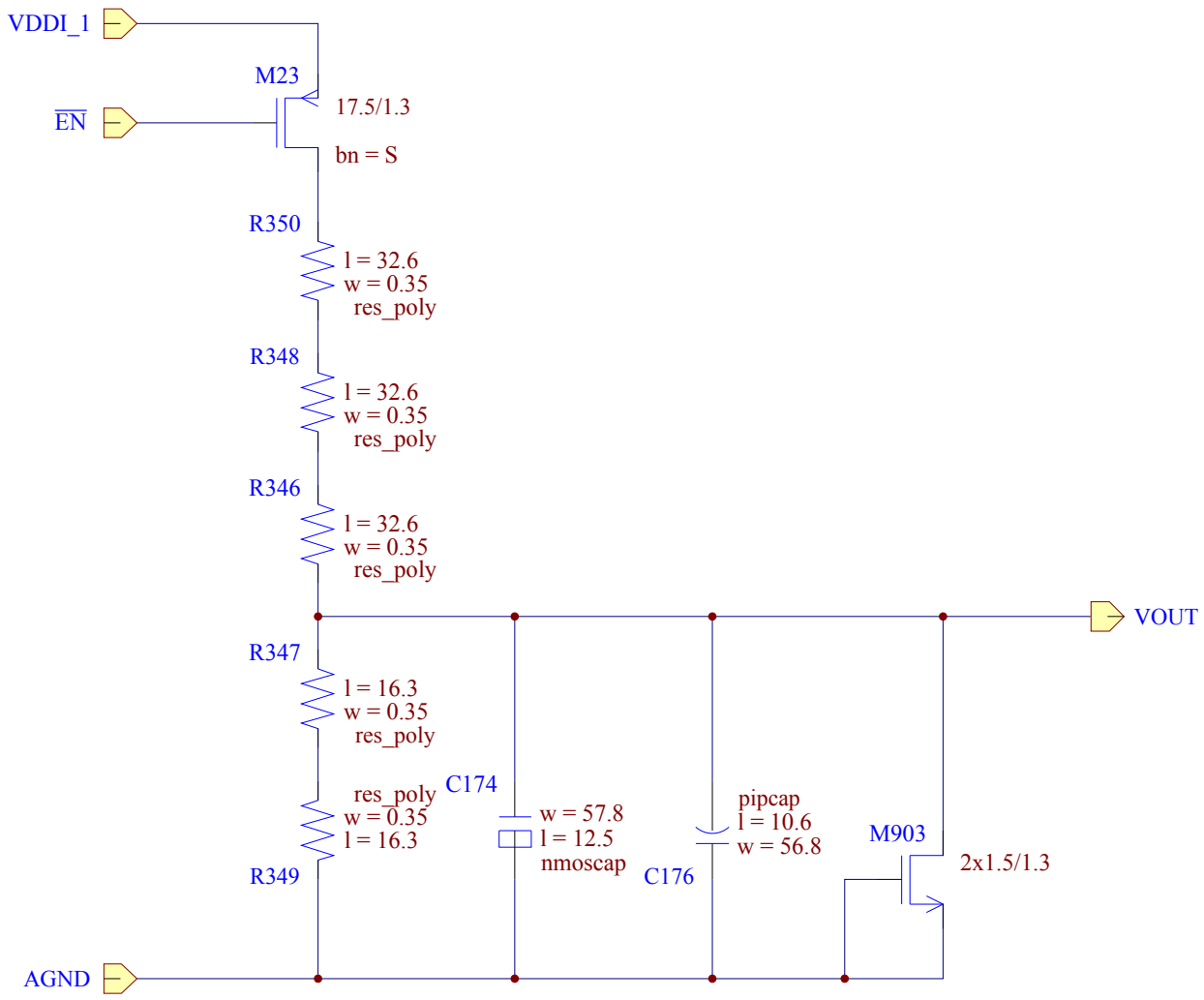
♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.

Device sizes are in microns (as measured from photographs).

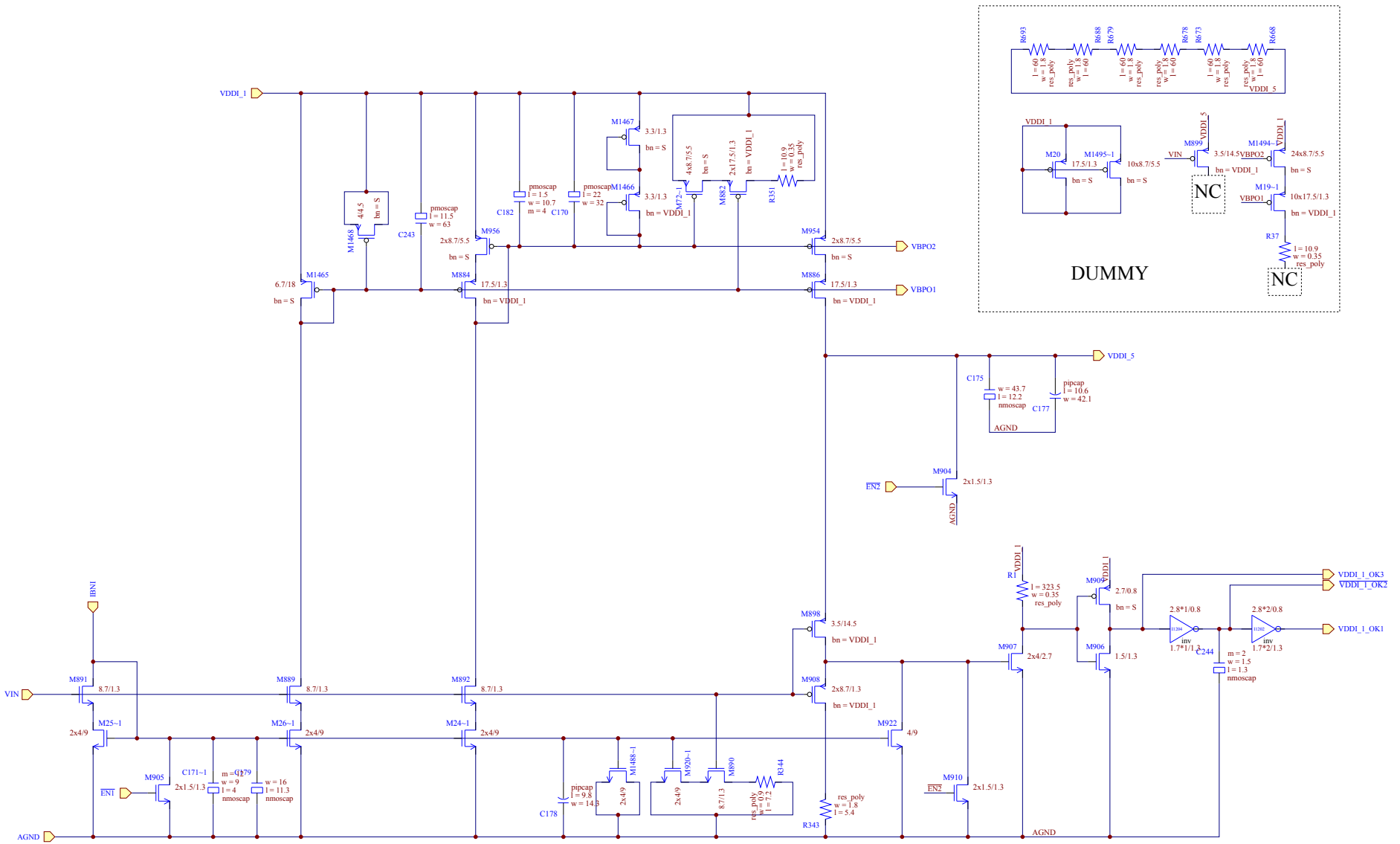
5.3.3 RES_8	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



Science Vision
Visualized Fact Utmost Science

♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.4 RES_5	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm



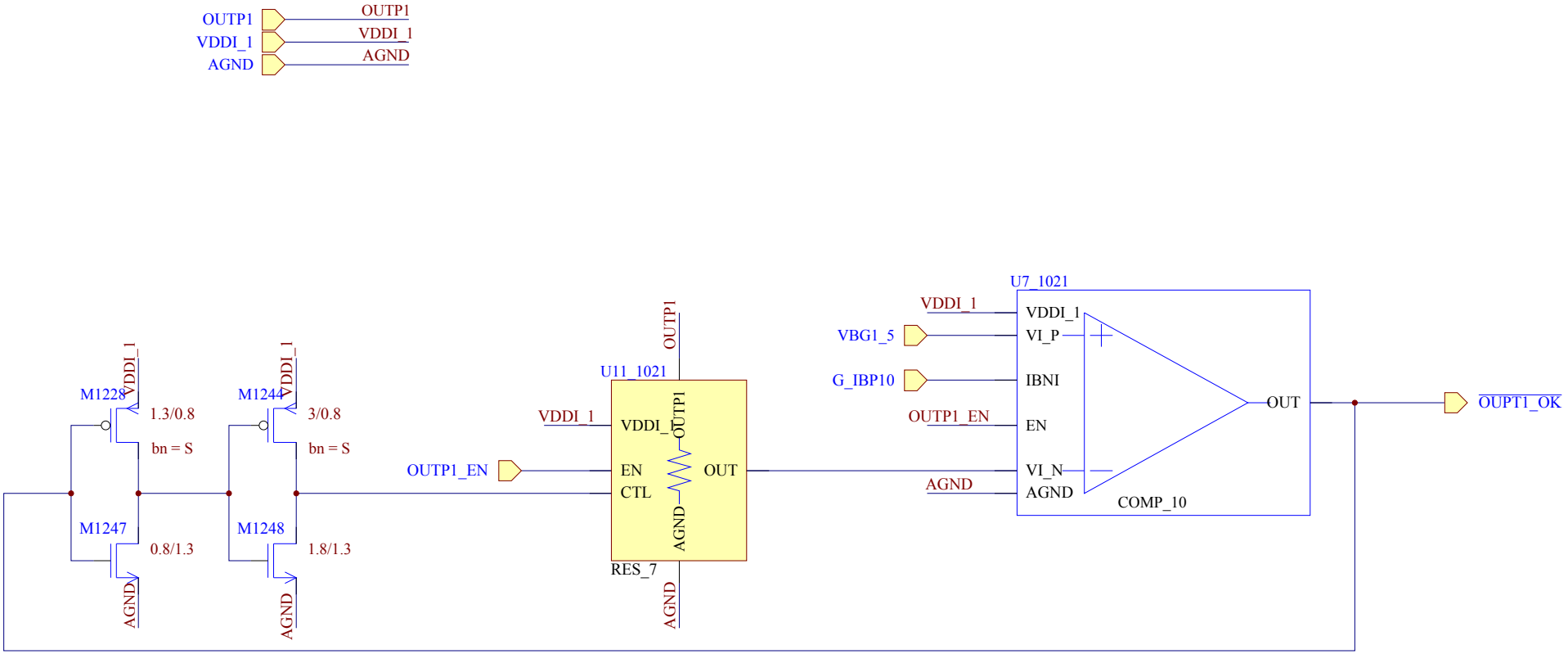
Science Vision
Visualized Fact Utmost Science

♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.

Device sizes are in microns (as measured from photographs).

5.3.5 VDDI_1_OK	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



When OUTP1 is OK, _OUTP1_OK is low.

Science Vision
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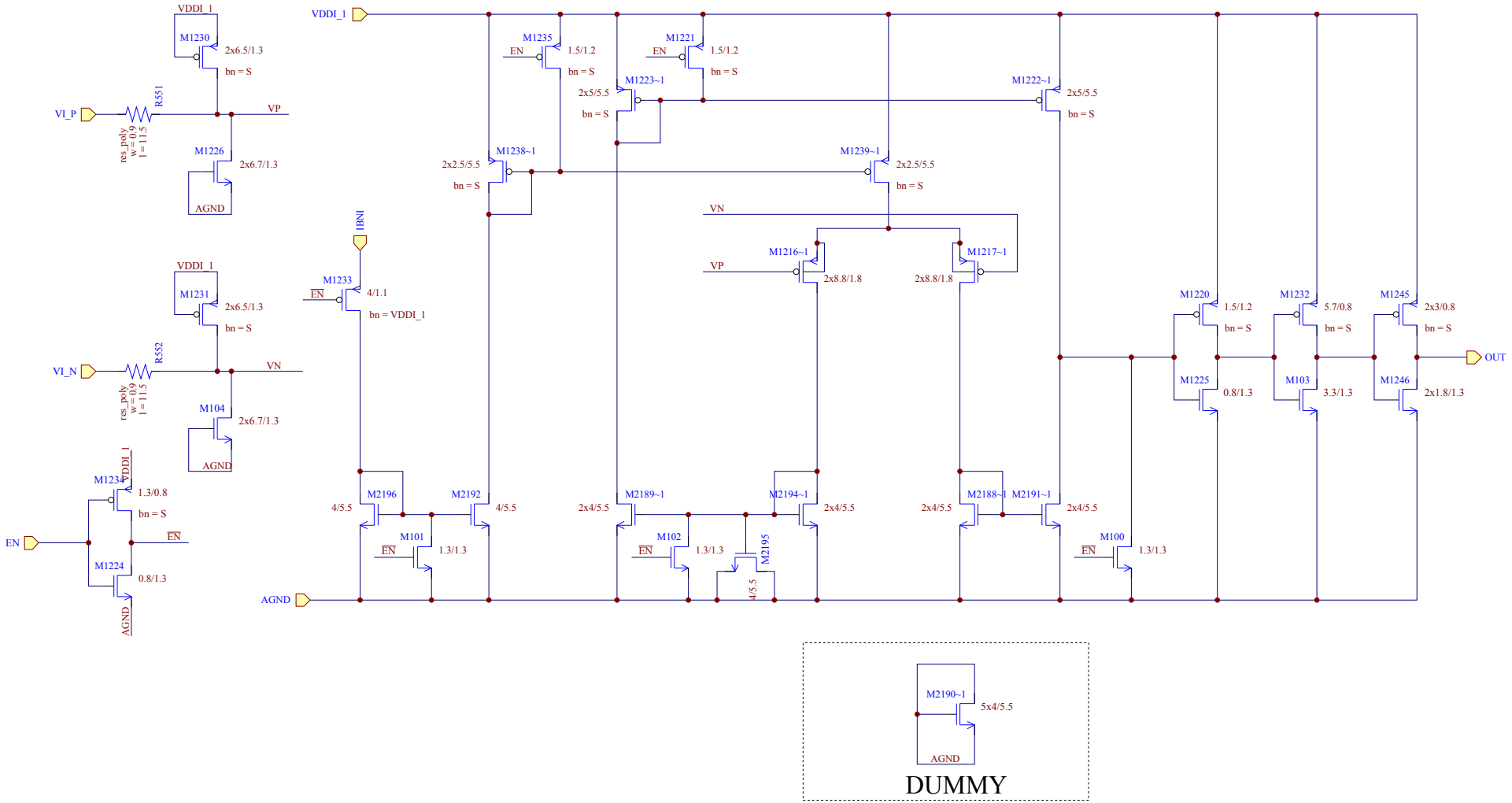
♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.6 OUTP1_OK	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

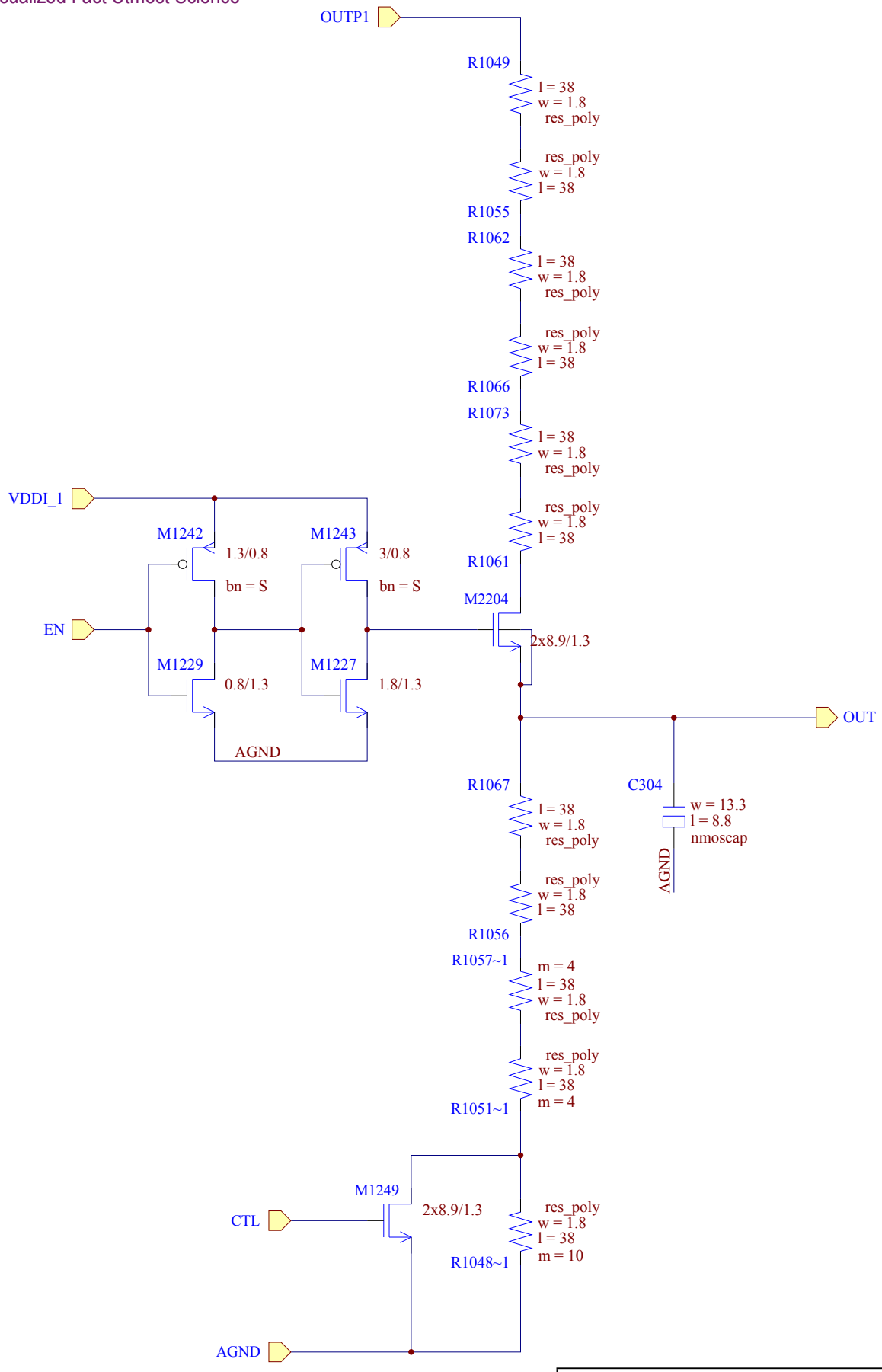


Science Vision
Visualized Fact Utmost Science

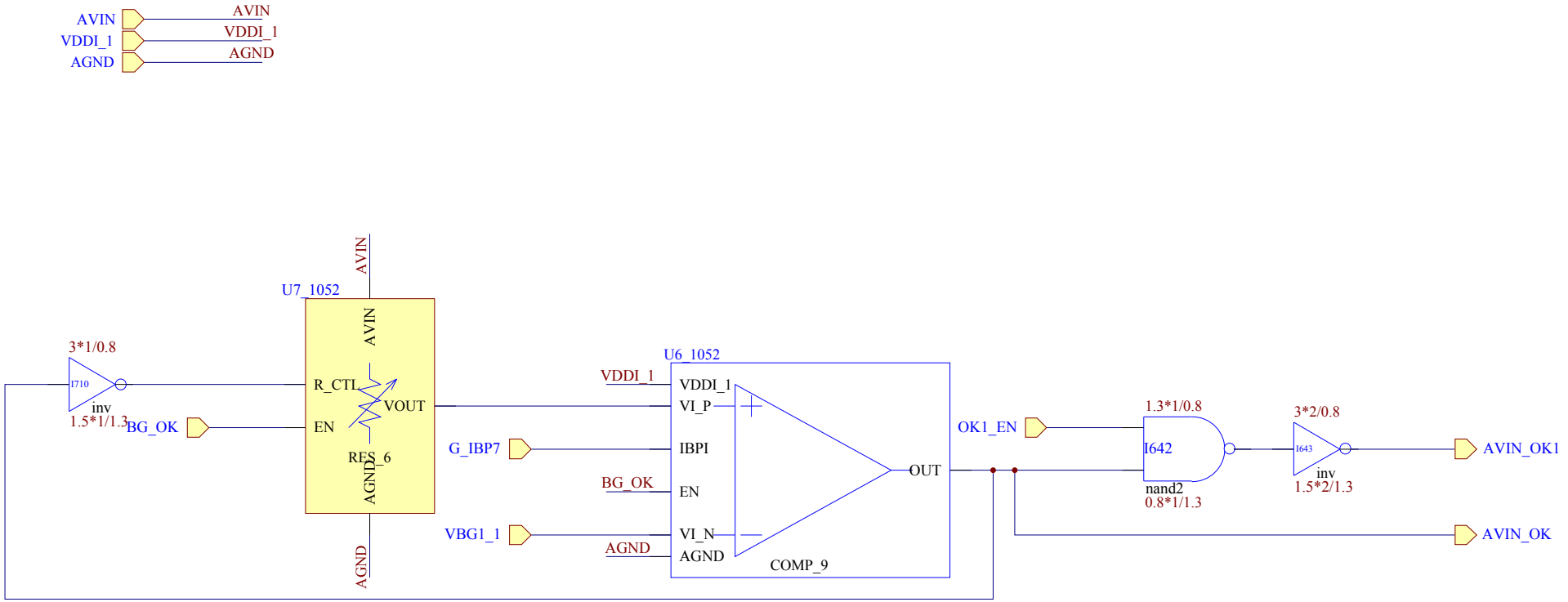
♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.6.1 COMP_10	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



5.3.6.2 RES_7	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



When AVIN is OK, AVIN_OK is high.

Science Vision
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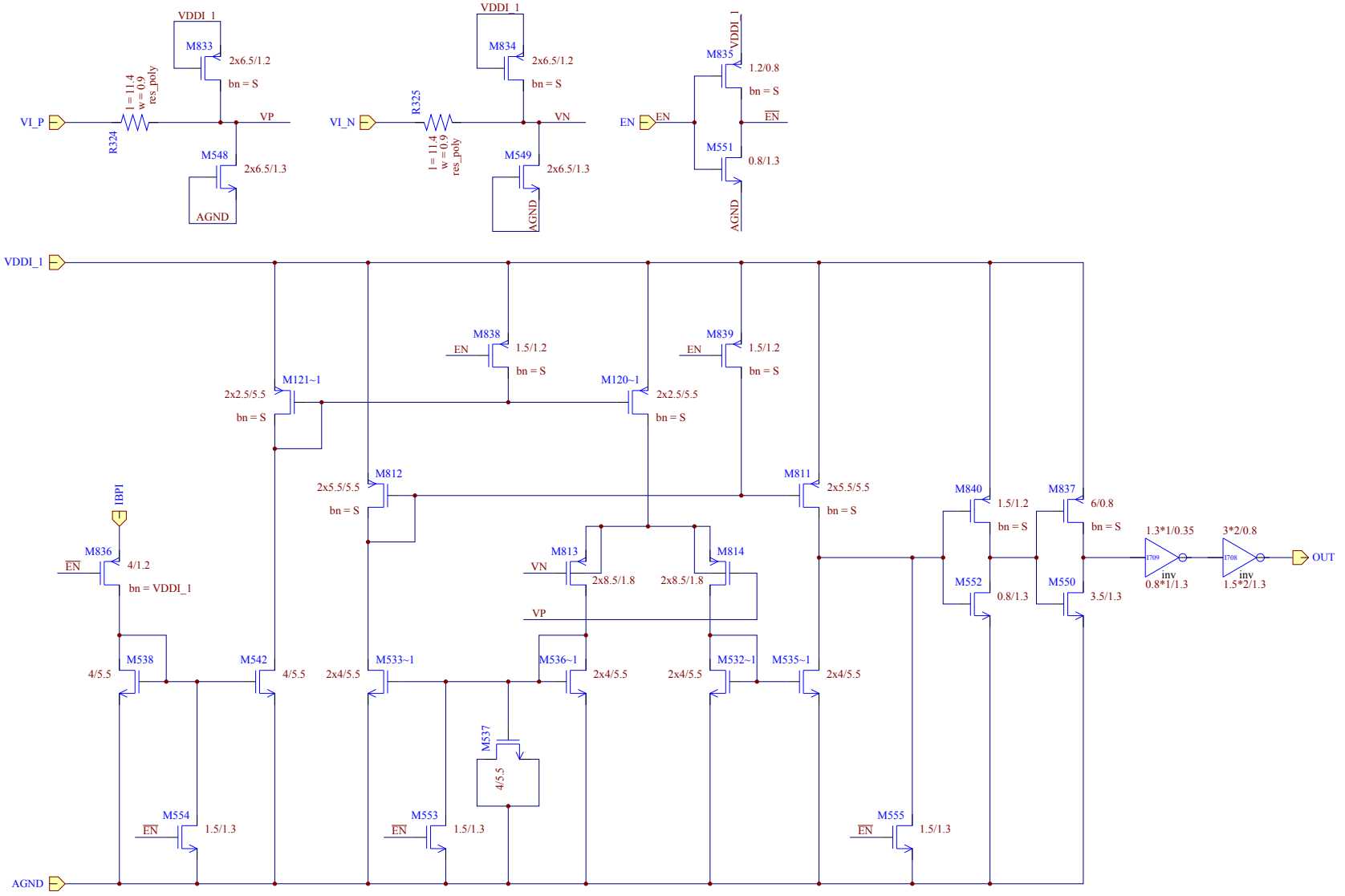
♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.7 AVIN_UVLO	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



Science Vision
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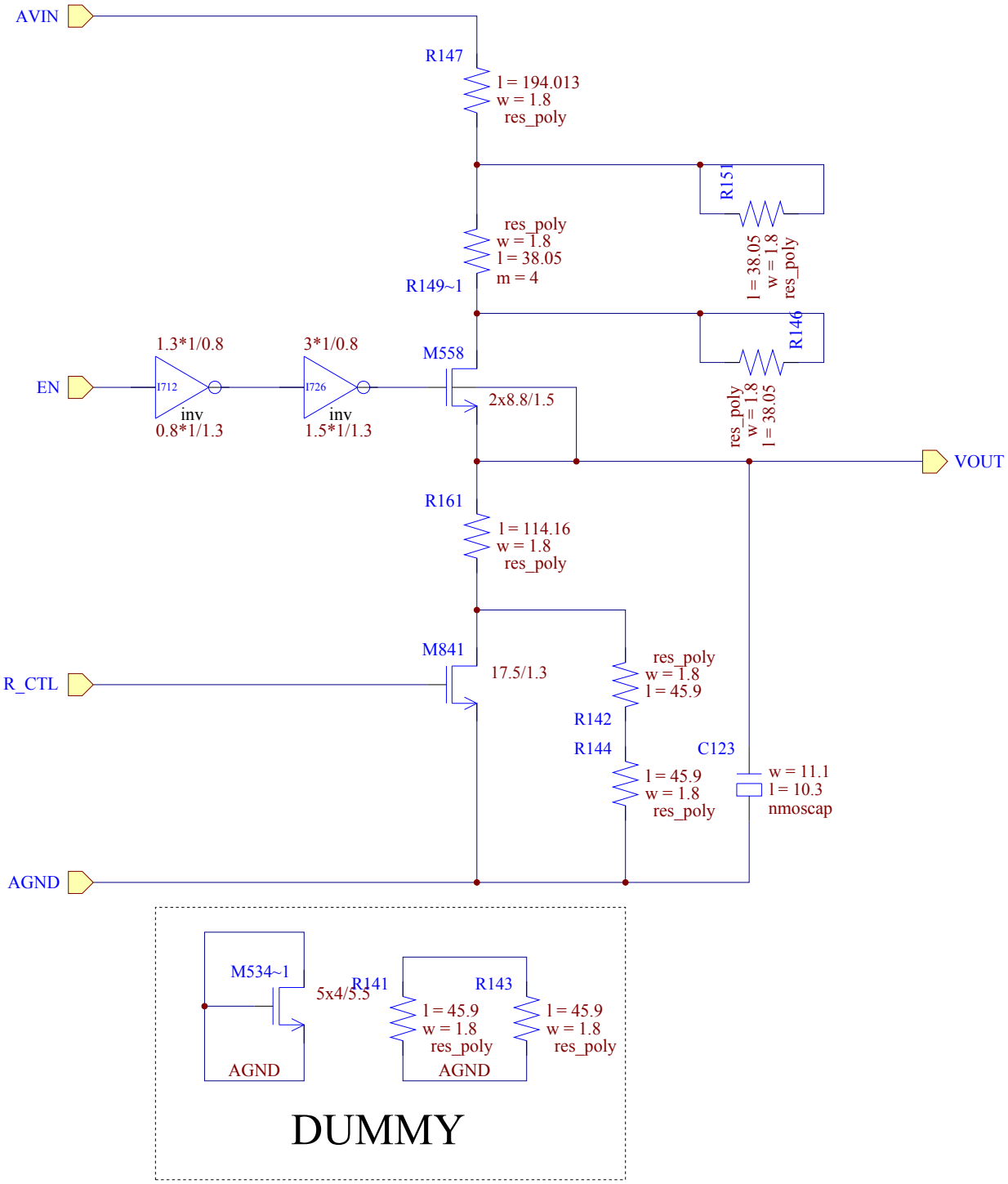
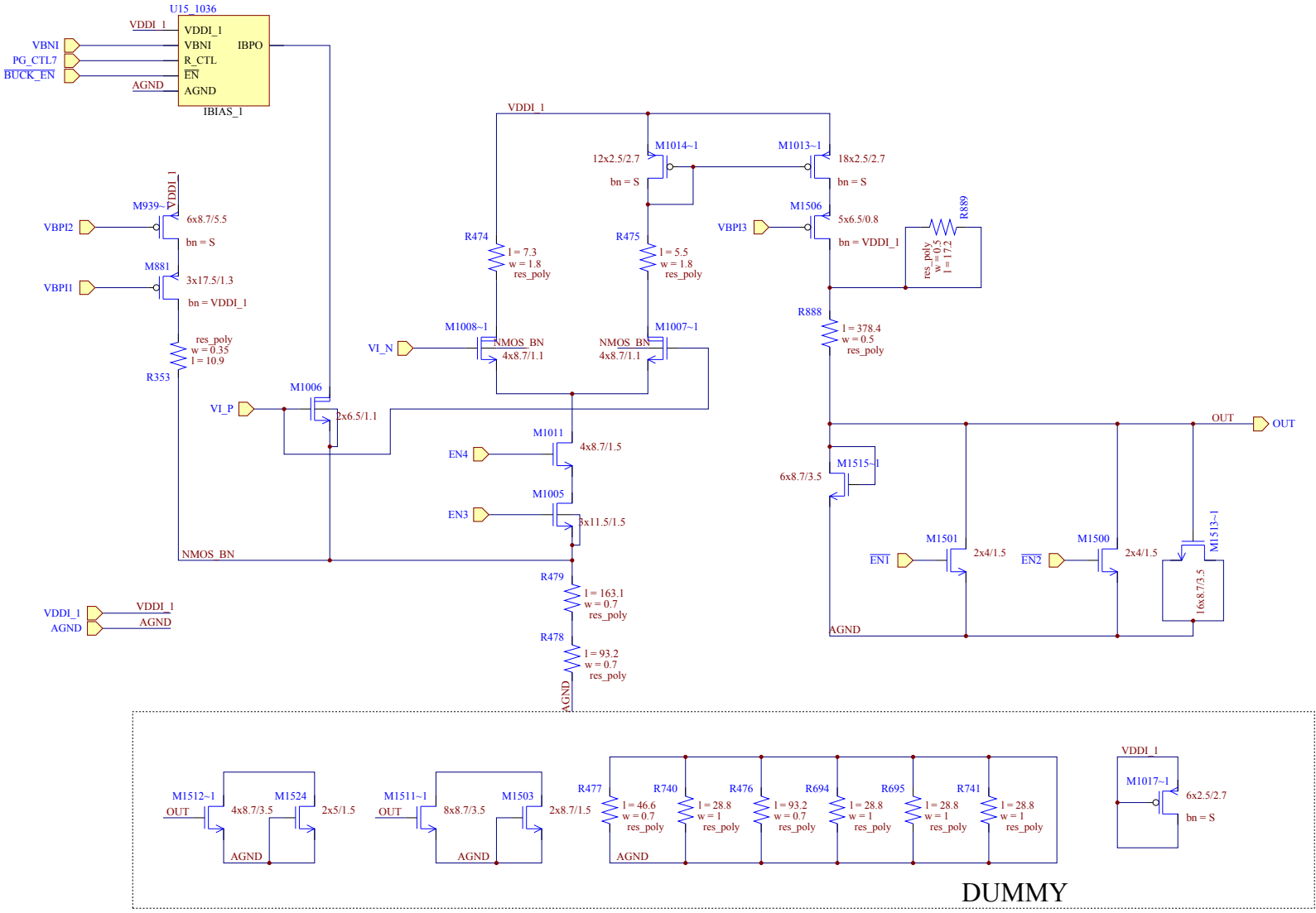
♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.7.1 COMP_9	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm



5.3.7.2 RES_6	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm



Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.

Device sizes are in microns (as measured from photographs).

5.3.8 COMP_15	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.8.1 IBIAS_1	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.9 LDO_DET	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.9.1 LPF	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”. Device sizes are in microns (as measured from photographs).

5.3.9.2 RES_10	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.9.3 COMP_13	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.9.4 SCHMITT_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.9.5 SCHMITT_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.9.6 RES_9	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.10 DUMMY_1	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.11 CURRENT_DET	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.11.1 VBIAS_1	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.11.2 COMP_12	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.11.3 PD_CURRENT	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

5.3.11.4 PU_CURRENT	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.12 DET_CTRL	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.13 SHORT_PROTECTION	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.3.13.1 COMP_11	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.4 OSC_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.5 EN_INPUT	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.5.1 ESD_2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.6 SELP2_INPUT	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.6.1 ESD_2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7 BOOST_OUTP1	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.1 ESD_2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.2 PWM1_LOGIC	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.3 ERROR_AMP1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.4 COMP_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.5 COMP_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

5.7.6 RES_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.7 VOLTAGE_SEL1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.8 TRIANGULAR_GEN1	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.9 CAP_RES_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.10 ESD_1	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

5.7.11 OUTP1_DRV	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.11.1 OUTP1_DRV_LOGIC	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.11.2 DUMMY_3	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.12 OUTP1_OVP	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.12.1 COMP_3	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.7.12.2 COMP_4	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.8 REFERENCE	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.8.1 PTAT_1	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.8.2 BANDGAP_OK	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.8.3 BANDGAP	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
Visualized Fact Utmost Science

♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.8.3.1 RES_11	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.8.4 PTAT_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.9 CONTROL_LOGIC	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.9.1 DUMMY_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10 BOOST_OUTP2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.1 ERROR_AMP2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

5.10.2 RES_2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.3 COMP_5	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.4 TRIANGULAR_GEN2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.5 CAP_RES_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.6 OUTP2_SW	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.6.1 ESD_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.7 OUTP2_OVP	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.7.1 COMP_7	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.7.2 COMP_6	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.7.3 OUTP2_SWP2_DET	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”. Device sizes are in microns (as measured from photographs).

5.10.8 PWM2_DRV2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.8.1 PWM2_LOGIC	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.8.2 OUTP2_SWN_CTL	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.8.3 OUTP2_SWP_CTL	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.8.4 VOLTAGE_SEL2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.10.8.5 OUTP2_DRV	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
Visualized Fact Utmost Science

♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.11 CT_CTRL	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.11.1 ESD_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.11.2 COMP_14	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.11.3 FOLLOWER	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.11.4 VBIAS_2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12 BUCK_OUTN	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.1 OUTN_ESD	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.2 RES_3	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.3 ERROR_AMP3	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.4 RES_4	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.5 TRIANGULAR_GEN3	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

5.12.6 OUTN_DRV	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.6.1 VOLTAGE_GEN	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.7 PWM3_LOGIC	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.7.1 STATE_MACHINE	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.7.2 BUF_DLY	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.7.3 OSC_3	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.8 CTRL_PD_CTRL	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.9 OUTN_DET	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.9.1 VBIAS_3	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.12.9.2 COMP_8	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13 PROGRAMMING_VNEG	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.1 LDO_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

5.13.1.1 RES_12	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

5.13.2 COUNTER_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.3 CTRL_PD	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.4 CTRL_INPUT_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.5 DECODER_3TO8	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.6 REGISTER6	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.7 REGISTER8	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.8 DECODER_42	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.9 ALGORITHM_LOGIC	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

5.13.9.1 ADD_FUNCTION	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.10 LEVEL_SHIFTERS	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”. Device sizes are in microns (as measured from photographs).

5.13.10.1 LEVEL_SHIFTER_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”. Device sizes are in microns (as measured from photographs).

5.13.10.2 CHG_PUMP_CELL	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

5.13.11 ENCODER	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.12 CTRL_INPUT_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.13 OSC2_DIV	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.13.1 OSC_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

5.13.13.2 COUNTER_2	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.14 CTRL_LOGIC	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.14.1 LATCH_1	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.14.2 LATCH_2	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:

bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.14.3 LATCH_3	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.14.4 CTRL_INPUT_3	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

5.13.15 MULTIPLEXER	
Part Number	XXXX
Manufacturer	XXXX XXXX
Device Type	XXX XXX
Die Size	X.XXX mm × X.XXX mm

Science Vision
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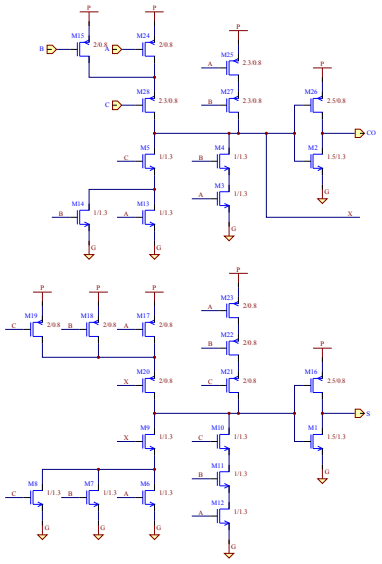
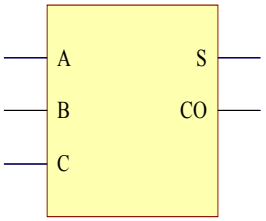
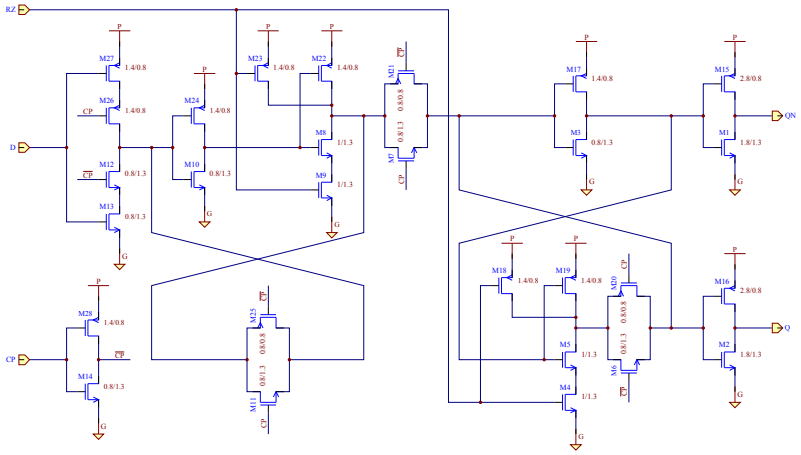
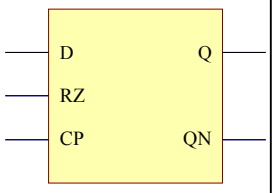
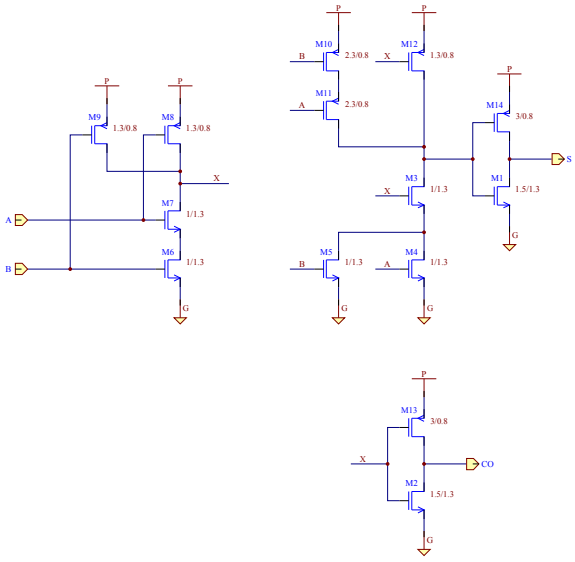
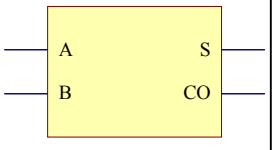
♦ NOTES:
bn represents MOS transistor bulk.Power and Ground represent digital cell power supply. For the digital cell list please refer to “Digital library”.
Device sizes are in microns (as measured from photographs).

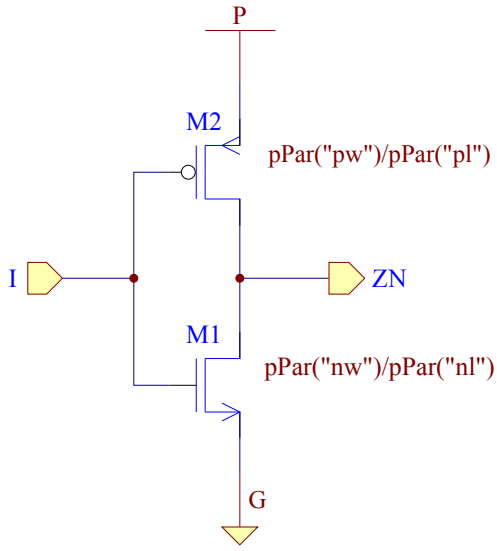
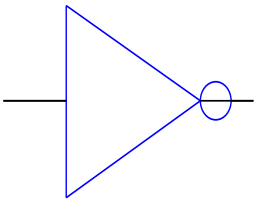
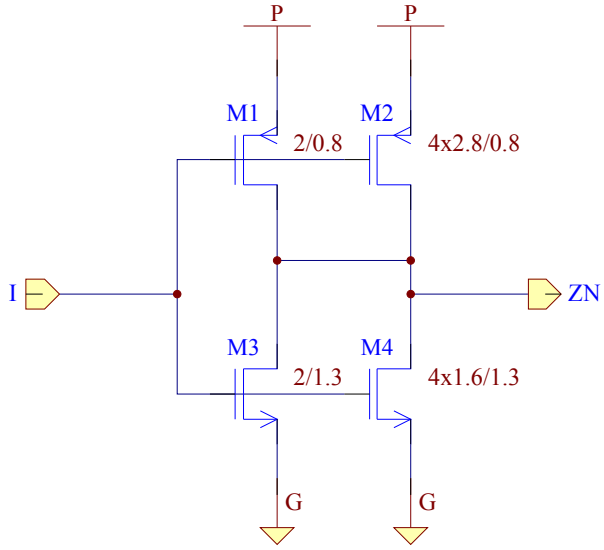
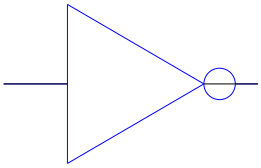
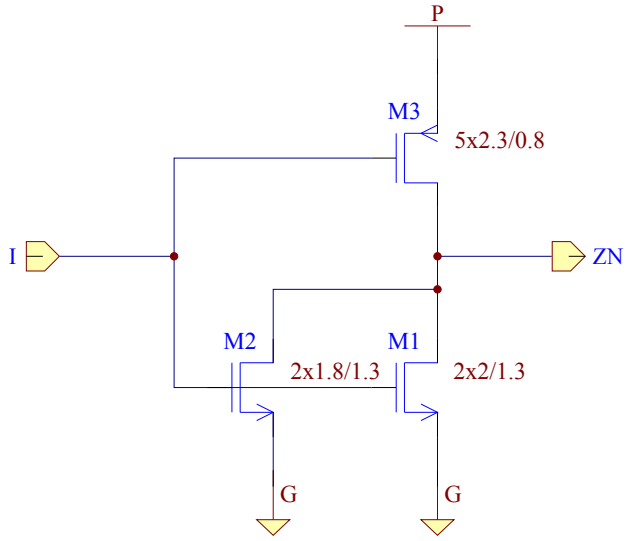
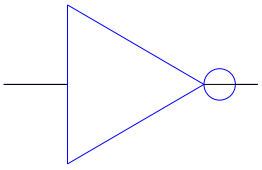
5.13.16 PG_CTL_DLY	
Part Number	XXXX
Manufacturer	XXXX XXXXX
Device Type	XXX XXXX
Die Size	X.XXX mm × X.XXX mm

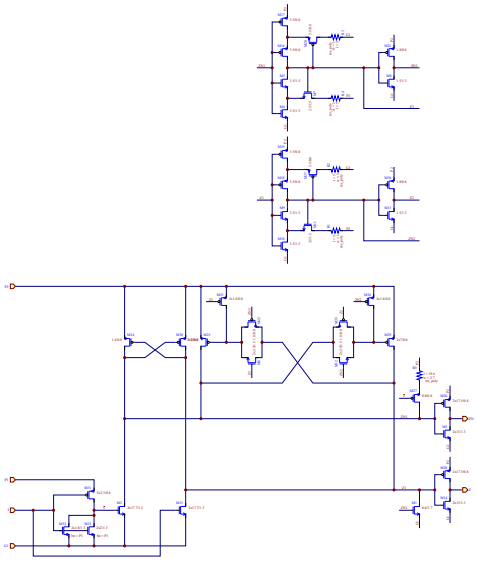
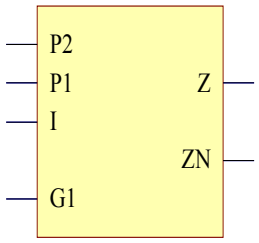
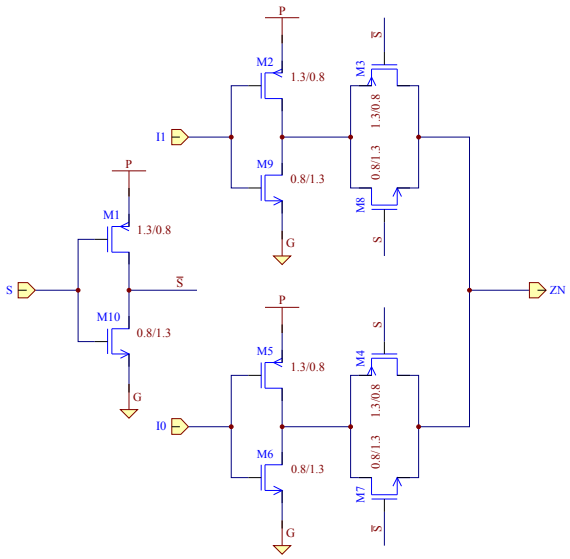
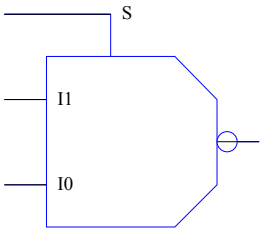
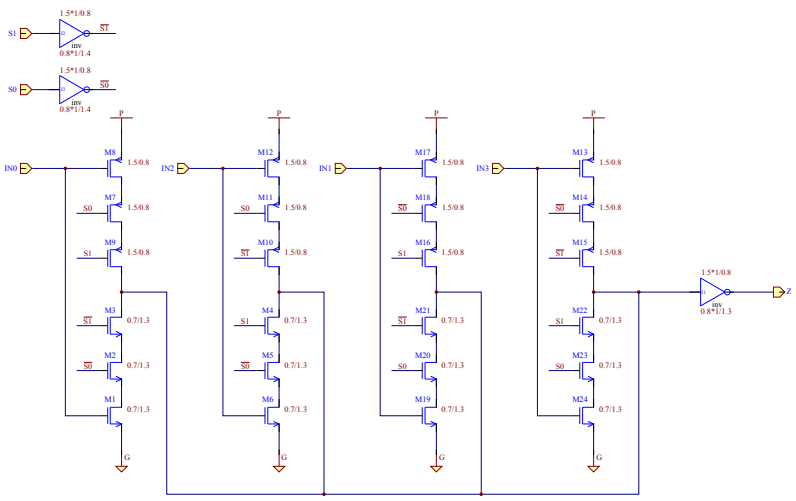
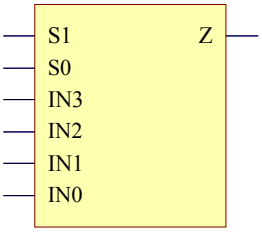
Chapter 6

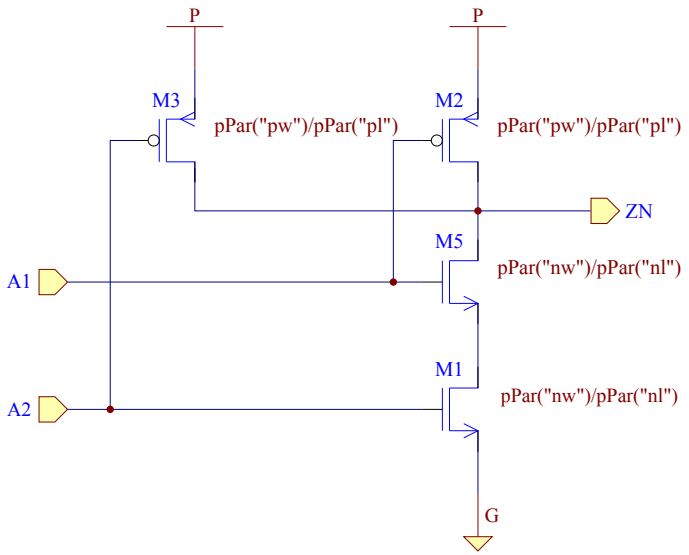
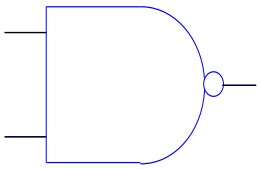
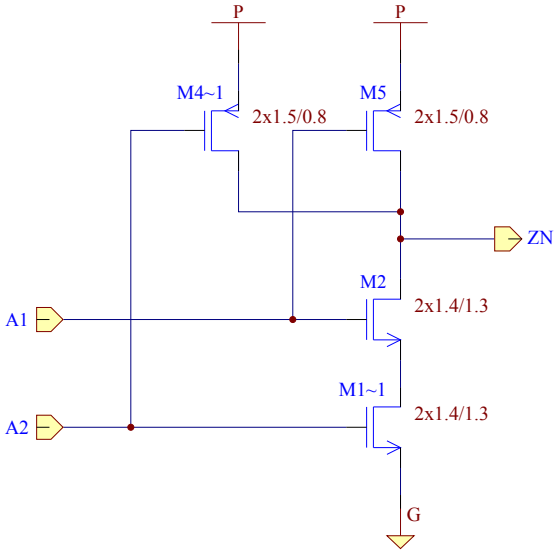
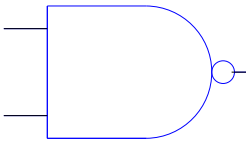
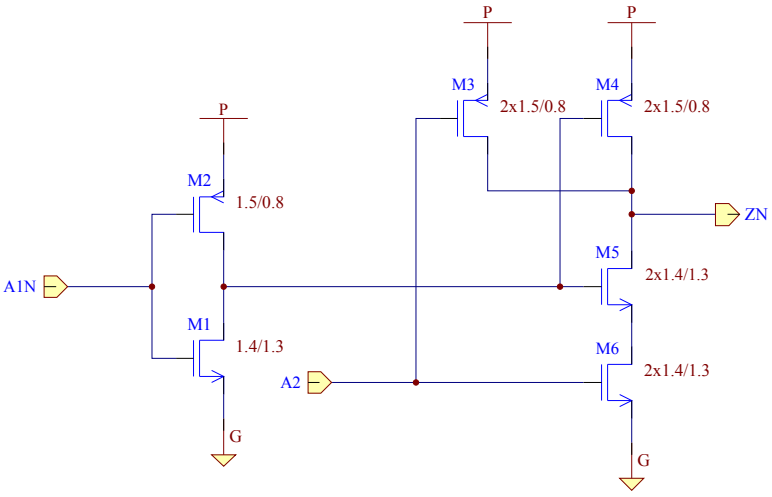
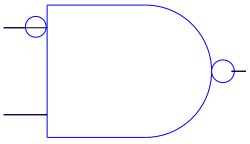
CELL DEFINITION

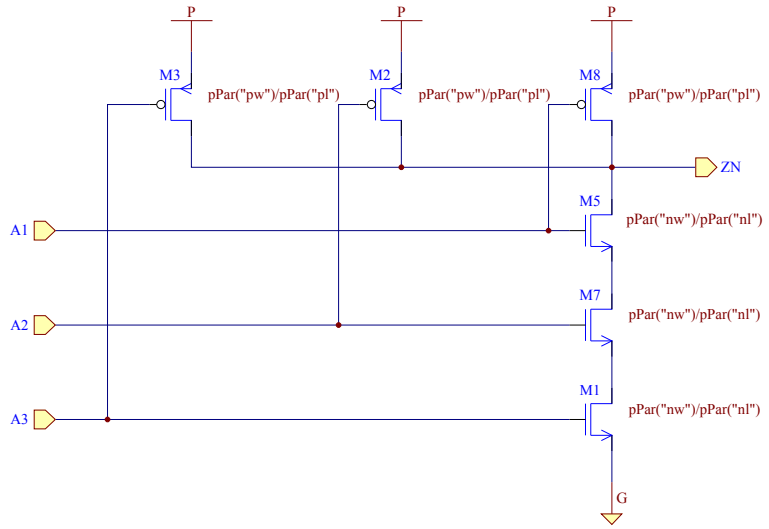
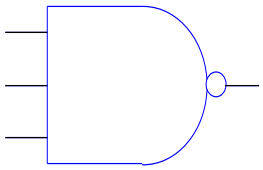
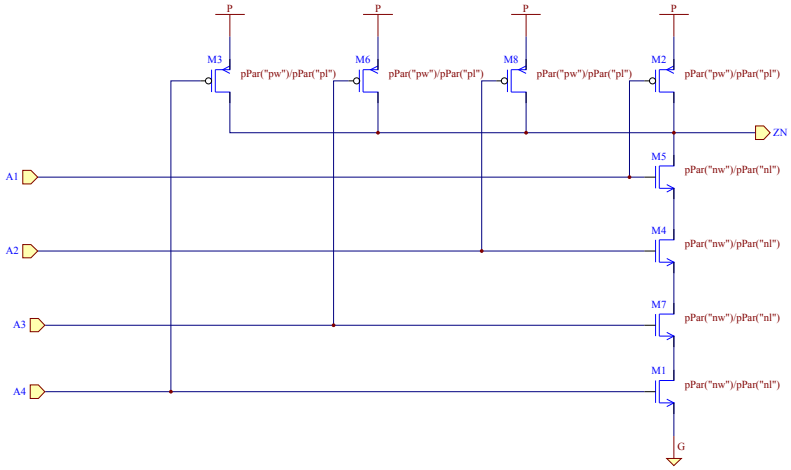
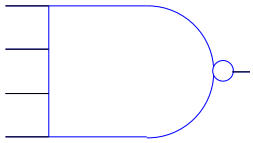
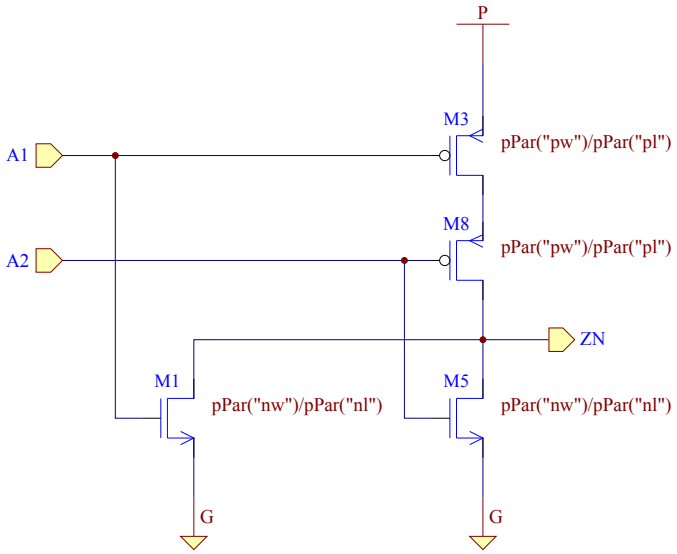
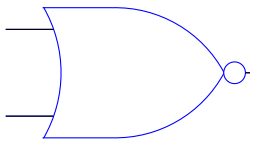
6. CELL DEFINITION

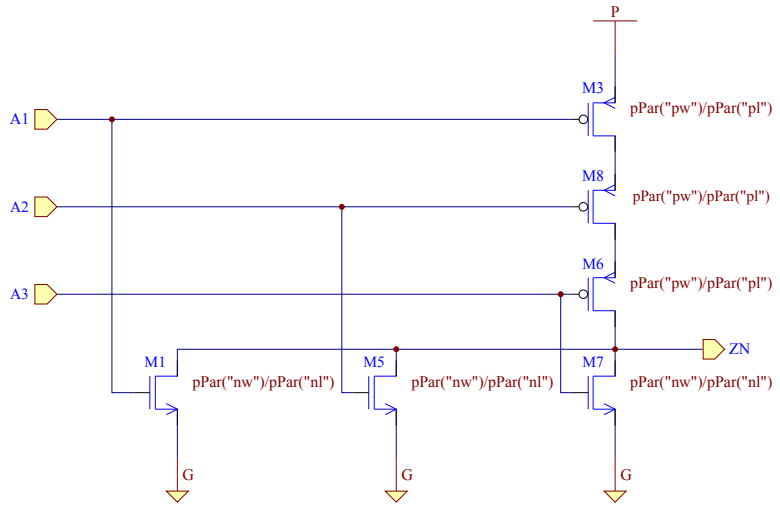
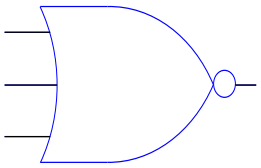
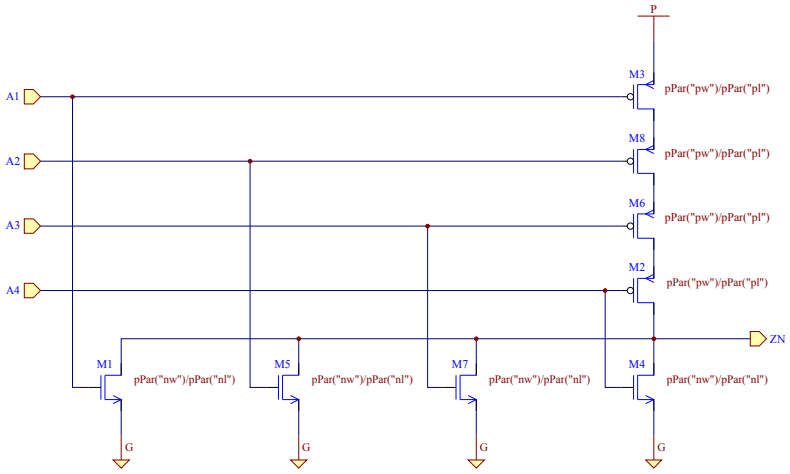
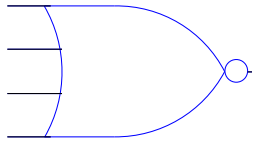
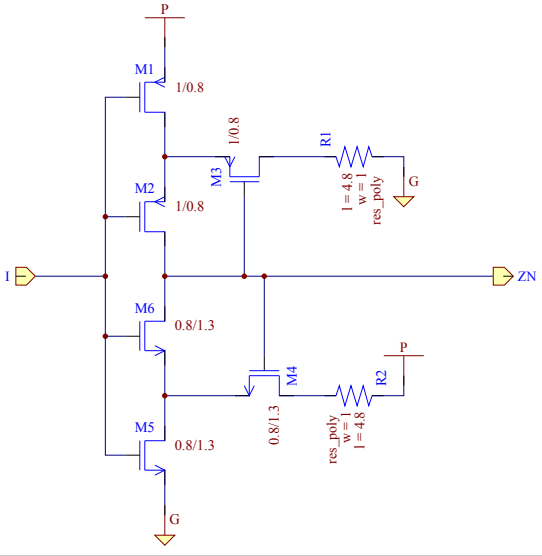
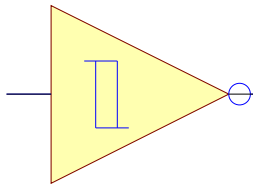
Cell	Schematic	Symbol
adder_s0_1		
dfcprz_s0_1		
half_adder_s0_1		

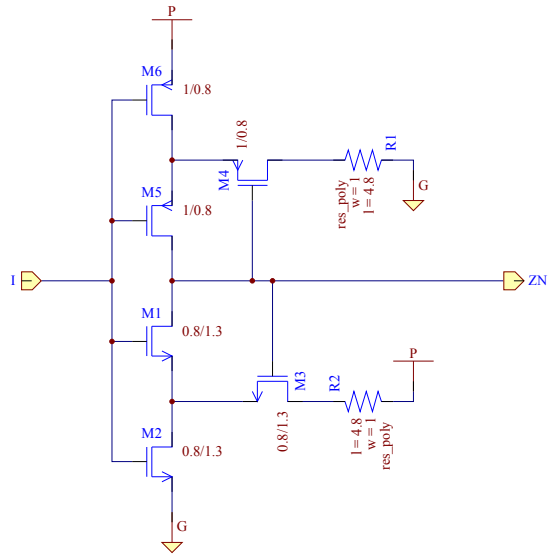
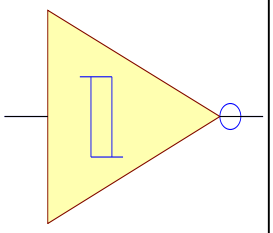
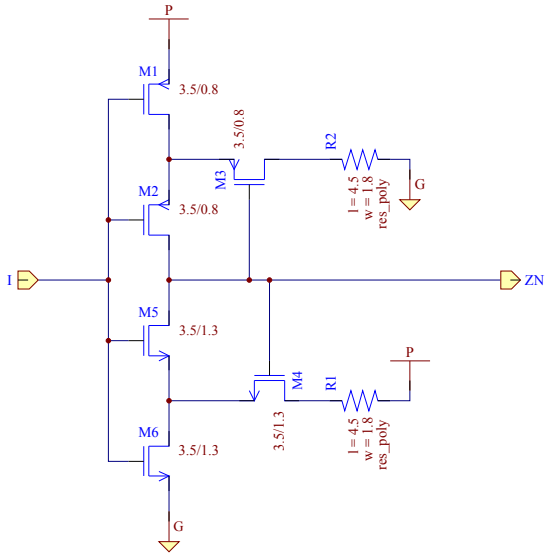
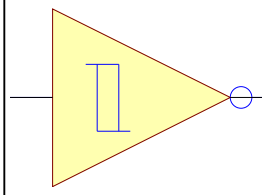
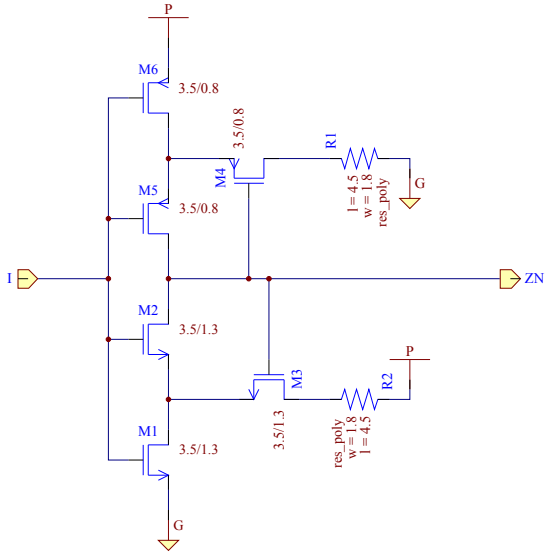
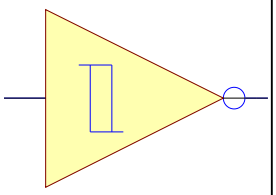
Cell	Schematic	Symbol
inv		
inv_s2_1		
inv_s2_2		

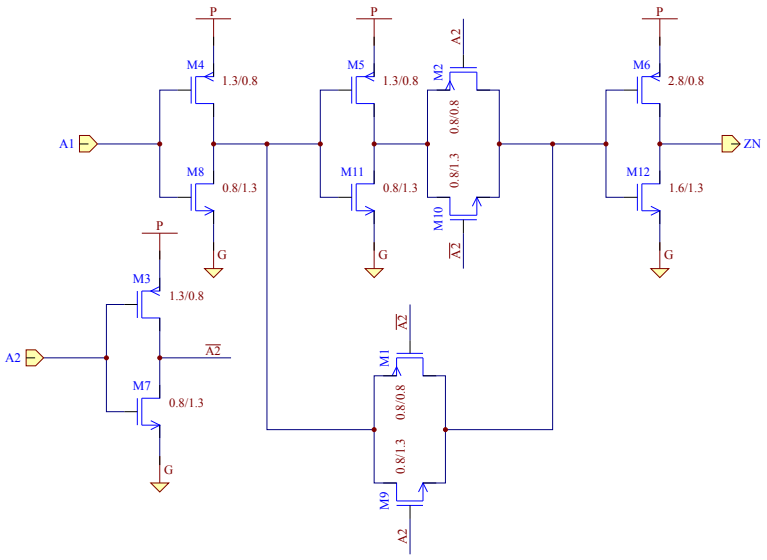
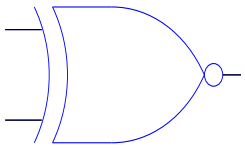
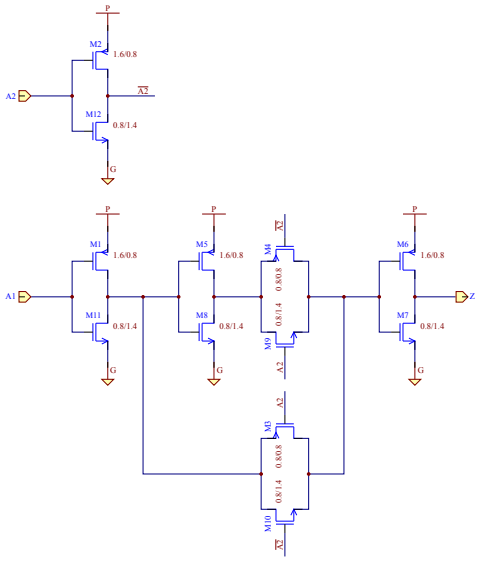
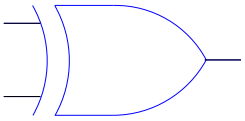
Cell	Schematic	Symbol
level_shift_s4		
mux21_s0_1		
mux41_s1_1		

Cell	Schematic	Symbol
nand2		
nand2_s1_1		
nand2b_s1_1		

Cell	Schematic	Symbol
nand3		
nand4		
nor2		

Cell	Schematic	Symbol
nor3		
nor4		
schmitt_s0_1		

Cell	Schematic	Symbol
schmitt_s0_2		
schmitt_s1_1		
schmitt_s1_2		

Cell	Schematic	Symbol
xnor2_s0_1		
xor2_s0_1		

Appendix: Signal Description

Signal Name	Signal Description
[AGND]	Analog Ground
[AVIN]	Input Voltage Supply for Internal Analog Circuits
[CT]	Sets the settling time for the voltage on VNEG when programmed to a new value.
[CTRL]	Enable VPOS Boost Converter and VNEG Inverting Buck Boost Converter. Programming VNEG Input.
[EN]	Enable AVDD Boost Input
[OUTN]	Output of the VNEG Inverting Buck Boost Converter
[OUTP1]	Output of the VPOS Boost Converter
[OUTP2]	Output of the AVDD Boost Converter
[PGND1]	Ground of VPOS Boost Converter
[PGND2]	Power Ground of AVDD Boost Converter
[PVIN]	Input Supply for VNEG Inverting Buck Boost Converter
[SELP2]	Selection Pin for AVDD Voltage. Low:5.8V, High: 7.7V
[SNSP1]	Vpos Sense Input
[SWN]	Switch Input Pin of VNEG Inverting Buck Boost Convertter
[SWP1]	Switch Input Pin of VPOS Boost Converter
[SWP2]	Switch Input Pin of the AVDD Boost Converter
_AV_P1_SEL	Select Signal for AVIN and OUTP1, Active Low
_BUCK_EN	Enable Signal for Buck OUTN, Active Low
_CT_EN	Enable Signal for CT_CTRL, Active Low
_CTL_IN2	CTRL Pin Input, Active Low
_CTRL_OK	CTRL Pin Signal is OK, Active low
_DET1_EN1	Enable Signal from LDO_DET1, Active low
_OSC_CLK1	Clock Signal from Oscillator, Active Low
_OTP_CTL	Over Temperature Protection Control, Active Low
_OUTN_EN1	Enable Signal for Buck OUTN, Active Low
_OUTP1_OK	When OUTP1 is OK, _OUTP1_OK is low.
_OUTP1_OVP	When OUTP1 is over voltage, _OUTP1_OVP is low.
_OUTP2_EN	Enable Signal for Boost OUTP2, Active Low
_OUTP2_OVP	When OUTP2 is over voltage, _OUTP2_OVP is low.
_PG_CTL6	CTRL Pin Programming Bit 6, Active Low
_PWM1_CLK1	Clock Signal for Boost OUTP1, Active Low
_PWM1_CLK2	Clock Signal for Boost OUTP1, Active Low
_PWM2_CLK1	Clock Signal for Boost OUTP2, Active Low
_PWM2_CLK2	Clock Signal for Boost OUTP2, Active Low
_PWM2_DRV1	PWM Driver Signal for Boost OUTP2, Active Low
_PWM2_DRV5	PWM Driver Signal for Boost OUTP2, Active Low
_PWM2_EN1	Enable Signal for PWM2, Active Low
_PWM2_EN3	Enable Signal for PWM2, Active Low
_PWM2_EN4	Enable Signal for PWM2, Active Low
_PWM3_CLK	Clock Signal for Buck OUTN, Active Low
_SELP2_IN	SELP2 Pin Input, Active Low
_SWN_N2	Switch Signal for Buck OUTN NMOS, Active Low
AV_P1_SEL	Select Signal for AVIN AND OUTP1
AV_P1_SEL	Select Signal for AVIN AND OUTP1
AVIN_OK	When AVIN is OK, AVIN_OK is high.
AVIN_OK1	When AVIN is OK, AVIN_OK1 is high.
BG_OK	When Bandgap is OK, BG_OK is high.
BUCK_EN	Enable Signal for Buck OUTN

Signal Name	Signal Description
BUCK_IB	Current Bias for Buck OUTN
BUCK_VBN1	Voltage Bias of NMOS for Buck OUTN
BUCK_VBN2	Voltage Bias of NMOS for Buck OUTN
BUCK_VBN3	Voltage Bias of NMOS for Buck OUTN
BUCK_VBP1	Voltage Bias of PMOS for Buck OUTN
BUCK_VBP2	Voltage Bias of PMOS for Buck OUTN
CT_CLK	Clock Signal for CT_CTRL
CT_DET	Detect Signal for CT Pin
CTL_D678_0	CTRL Pin D[6:8] Decoder Bit 0
CTL_D678_1	CTRL Pin D[6:8] Decoder Bit 1
CTL_D678_2	CTRL Pin D[6:8] Decoder Bit 2
CTL_D678_3	CTRL Pin D[6:8] Decoder Bit 3
CTL_D678_4	CTRL Pin D[6:8] Decoder Bit 4
CTL_D678_5	CTRL Pin D[6:8] Decoder Bit 5
CTL_D678_6	CTRL Pin D[6:8] Decoder Bit 6
CTL_D678_7	CTRL Pin D[6:8] Decoder Bit 7
CTL_IN1	CTRL Pin Input
CTL_PD0	Pull Down Signal for CTRL Pin
CTL_PD1	Pull Down Signal for CTRL Pin
CTL_PD2	Pull Down Signal for CTRL Pin
CTL_PD3	Pull Down Signal for CTRL Pin
CTRL_CLK	Clock Signal for CTRL Programming
CTRL_L1	CTRL Pin Logic Signal
CTRL_L2	CTRL Pin Logic Signal
CTRL_OK	CTRL Pin OK
CTRL_OK_VBN	When CTRL Pin Signal is OK, Voltage Bias of NMOS is high.
CTRL_RZ1	Reset Signal for CTRL Programming
CTRL_RZ2	Reset Signal for CTRL Programming
CTRL_RZ2D	Reset Signal after Delay for CTRL Programming
DET1_EN1	Enable Signal from LDO_DET1
DET1_EN2	Enable Signal from LDO_DET1
EN_IN	EN Pin Input
G_EN	Global Enable
G_IBP1	Global Current Bias from PMOS
G_IBP10	Global Current Bias from PMOS
G_IBP11	Global Current Bias from PMOS
G_IBP12	Global Current Bias from PMOS
G_IBP13	Global Current Bias from PMOS
G_IBP14	Global Current Bias from PMOS
G_IBP15	Global Current Bias from PMOS
G_IBP16	Global Current Bias from PMOS
G_IBP17	Global Current Bias from PMOS
G_IBP18	Global Current Bias from PMOS
G_IBP19	Global Current Bias from PMOS
G_IBP2	Global Current Bias from PMOS
G_IBP20	Global Current Bias from PMOS
G_IBP21	Global Current Bias from PMOS
G_IBP22	Global Current Bias from PMOS
G_IBP3	Global Current Bias from PMOS
G_IBP4	Global Current Bias from PMOS
G_IBP5	Global Current Bias from PMOS
G_IBP6	Global Current Bias from PMOS

Signal Name	Signal Description
G_IBP7	Global Current Bias from PMOS
G_IBP8	Global Current Bias from PMOS
G_IBP9	Global Current Bias from PMOS
OSC_CLK1	Clock Signal from Oscillator
OSC_CLK2	Clock Signal from Oscillator
OSC1_CLK1	Clock Signal from Oscillator1
OSC1_CLK2	Clock Signal from Oscillator1
OSC2_CTL1	Control Signal for Oscillator2 and Divider
OSC2_CTL2	Control Signal for Oscillator2 and Divider
OSC2_DIV_CK1	Clock Signal from Oscillator2 and Divider
OSC2_DIV_CK2	Clock Signal from Oscillator2 and Divider
OSC2_DIV_CK3	Clock Signal from Oscillator2 and Divider
OSC3_CLK2	Clock Signal from Oscillator3
OTP_CTL	Over Temperature Protection Control
OUTN_DET	Detect Signal for Buck OUTN
OUTN_EN1	Enable Signal for Buck OUTN
OUTN_EN2	Enable Signal for Buck OUTN
OUTP1_BN	PMOS Buck for Boost OUTP1
OUTP1_BN	PMOS Buck for Boost OUTP1
OUTP1_DRV_L1	Driver Logic Signal for Boost OUTP1
OUTP1_DRV_L1	Driver Logic Signal for Boost OUTP1
OUTP1_DRV_L2	Driver Logic Signal for Boost OUTP1
OUTP1_DRV_L2	Driver Logic Signal for Boost OUTP1
OUTP1_DRV_L3	Driver Logic Signal for Boost OUTP1
OUTP1_DRV_L3	Driver Logic Signal for Boost OUTP1
OUTP1_EN	Enable Signal for Boost OUTP1
OUTP1_OVP_EN	Enable Signal for OUTP1 Over Voltage Protecton
OUTP2_BN	PMOS Buck for Boost OUTP2
OUTP2_EN	Enable Signal for Boost OUTP2
OUTP2_OVP_EN	Enable Signal for OUTP2 Over Voltage Protecton
PG_CTL_EC1	Encoder Signal of CTRL Pin Programming
PG_CTL_EC2	Encoder Signal of CTRL Pin Programming
PG_CTL_L1	CTRL Pin Programming Logic Signal
PG_CTL_L1D	CTRL Pin Programming Logic Signal after Delay
PG_CTL0	CTRL Pin Programming Bit 0
PG_CTL1	CTRL Pin Programming Bit 1
PG_CTL10	CTRL Pin Programming Bit 10
PG_CTL11	CTRL Pin Programming Bit 11
PG_CTL12	CTRL Pin Programming Bit 12
PG_CTL13	CTRL Pin Programming Bit 13
PG_CTL13D	CTRL Pin Programming Bit 13 after Delay
PG_CTL14	CTRL Pin Programming Bit 14
PG_CTL15	CTRL Pin Programming Bit 15
PG_CTL16	CTRL Pin Programming Bit 16
PG_CTL17	CTRL Pin Programming Bit 17
PG_CTL2	CTRL Pin Programming Bit 2
PG_CTL24	CTRL Pin Programming Bit 24
PG_CTL24_LS	CTRL Pin Programming Bit 24 after Level Shifter
PG_CTL25	CTRL Pin Programming Bit 25
PG_CTL25_LS	CTRL Pin Programming Bit 25 after Level Shifter
PG_CTL26	CTRL Pin Programming Bit 26
PG_CTL26_LS	CTRL Pin Programming Bit 26 after Level Shifter

Signal Name	Signal Description
PG_CTL27	CTRL Pin Programming Bit 27
PG_CTL27_LS	CTRL Pin Programming Bit 27 after Level Shifter
PG_CTL28	CTRL Pin Programming Bit 28
PG_CTL28_LS	CTRL Pin Programming Bit 28 after Level Shifter
PG_CTL29	CTRL Pin Programming Bit 29
PG_CTL29_LS	CTRL Pin Programming Bit 29 after Level Shifter
PG_CTL3	CTRL Pin Programming Bit 3
PG_CTL30	CTRL Pin Programming Bit 30
PG_CTL30_LS	CTRL Pin Programming Bit 30 after Level Shifter
PG_CTL31	CTRL Pin Programming Bit 31
PG_CTL31_LS	CTRL Pin Programming Bit 31 after Level Shifter
PG_CTL32	CTRL Pin Programming Bit 32
PG_CTL32_LS	CTRL Pin Programming Bit 32 after Level Shifter
PG_CTL33	CTRL Pin Programming Bit 33
PG_CTL33_LS	CTRL Pin Programming Bit 33 after Level Shifter
PG_CTL34	CTRL Pin Programming Bit 34
PG_CTL34_LS	CTRL Pin Programming Bit 34 after Level Shifter
PG_CTL35	CTRL Pin Programming Bit 35
PG_CTL35_LS	CTRL Pin Programming Bit 35 after Level Shifter
PG_CTL36	CTRL Pin Programming Bit 36
PG_CTL36_LS	CTRL Pin Programming Bit 36 after Level Shifter
PG_CTL37	CTRL Pin Programming Bit 37
PG_CTL37_LS	CTRL Pin Programming Bit 37 after Level Shifter
PG_CTL38	CTRL Pin Programming Bit 38
PG_CTL38_LS	CTRL Pin Programming Bit 38 after Level Shifter
PG_CTL39	CTRL Pin Programming Bit 39
PG_CTL39_LS	CTRL Pin Programming Bit 39 after Level Shifter
PG_CTL4	CTRL Pin Programming Bit 4
PG_CTL40	CTRL Pin Programming Bit 40
PG_CTL40_LS	CTRL Pin Programming Bit 40 after Level Shifter
PG_CTL41	CTRL Pin Programming Bit 41
PG_CTL41_LS	CTRL Pin Programming Bit 41 after Level Shifter
PG_CTL42	CTRL Pin Programming Bit 42
PG_CTL42_LS	CTRL Pin Programming Bit 42 after Level Shifter
PG_CTL43	CTRL Pin Programming Bit 43
PG_CTL43_LS	CTRL Pin Programming Bit 43 after Level Shifter
PG_CTL44	CTRL Pin Programming Bit 44
PG_CTL44_LS	CTRL Pin Programming Bit 44 after Level Shifter
PG_CTL45	CTRL Pin Programming Bit 45
PG_CTL45_LS	CTRL Pin Programming Bit 45 after Level Shifter
PG_CTL46	CTRL Pin Programming Bit 46
PG_CTL46_LS	CTRL Pin Programming Bit 46 after Level Shifter
PG_CTL47	CTRL Pin Programming Bit 47
PG_CTL47_LS	CTRL Pin Programming Bit 47 after Level Shifter
PG_CTL5	CTRL Pin Programming Bit 5
PG_CTL6	CTRL Pin Programming Bit 6
PG_CTL6D	CTRL Pin Programming Bit 6 after Delay
PG_CTL7	CTRL Pin Programming Bit 7
PG_CTL8	CTRL Pin Programming Bit 8
PG_CTL8D	CTRL Pin Programming Bit 8 after Delay
PG_CTL9	CTRL Pin Programming Bit 9
PWM1_1	PWM Signal for Boost OUTP1

Signal Name	Signal Description
PWM1_CLK2	Clock Signal for Boost OUTP1
PWM1_EN	Enable Signal for PWM1
PWM1_L1	PWM Logic Signal for Boost OUTP1
PWM1_L2	PWM Logic Signal for Boost OUTP1
PWM2_1	PWM Signal for Boost OUTP2
PWM2_1L	PWM Logic Signal for Boost OUTP2
PWM2_2L	PWM Logic Signal for Boost OUTP2
PWM2_CLK2	Clock Signal for Boost OUTP2
PWM2_DRV1	PWM Driver Signal for Boost OUTP2
PWM2_DRV2	PWM Driver Signal for Boost OUTP2
PWM2_DRV3	PWM Driver Signal for Boost OUTP2
PWM2_DRV4	PWM Driver Signal for Boost OUTP2
PWM2_EN	Enable Signal for PWM2
PWM3_CLK	Clock Signal for Buck OUTN
PWM3_IN	PWM Signal for Buck OUTN
PWM3_L	PWM Logic Signal for Buck OUTN
SHORT_CTL	Short Protection Control
SHORT_DET	Detect for Short Protection
SNSP1_DET	Detect for SNSP1 Pin
SNSP1_DET	Detect for SNSP1 Pin
SWN_N1	Switch Signal for Buck OUTN NMOS
SWP1N	Switch Signal for Boost OUTP1 NMOS
SWP1P	Switch Signal for Boost OUTP1 PMOS
SWP2N	Switch Signal for Boost OUTP2 NMOS
SWP2P	Switch Signal for Boost OUTP2 PMOS
VBG1_1	Bandgap Voltage
VBG1_2	Bandgap Voltage
VBG1_3	Bandgap Voltage
VBG1_4	Bandgap Voltage
VBG1_5	Bandgap Voltage
VBG1_6	Bandgap Voltage
VDDI_1	Internal Power
VDDI_1_OK1	When VDDI_1 is OK, VDDI_1_OK1 is high.
VDDI_2	Internal Power
VDDI_3	Internal Power
VDDI_4	Internal Power
VDDI_5	Internal Power
VREF_BG1	Reference Voltage from Bandgap
VREF_BG2	Reference Voltage from Bandgap
VREF_DET	Reference Voltage for Detector
VREF_L1	Reference Voltage from LDO
VREF_L2	Reference Voltage from LDO

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