A CMOS

1.1)

Vcc 5V TTL   LOW 0 0V   HIGH 1 5V

ZVP2106A := ZVP

ZVN2106A =: ZVN

U_e U_a

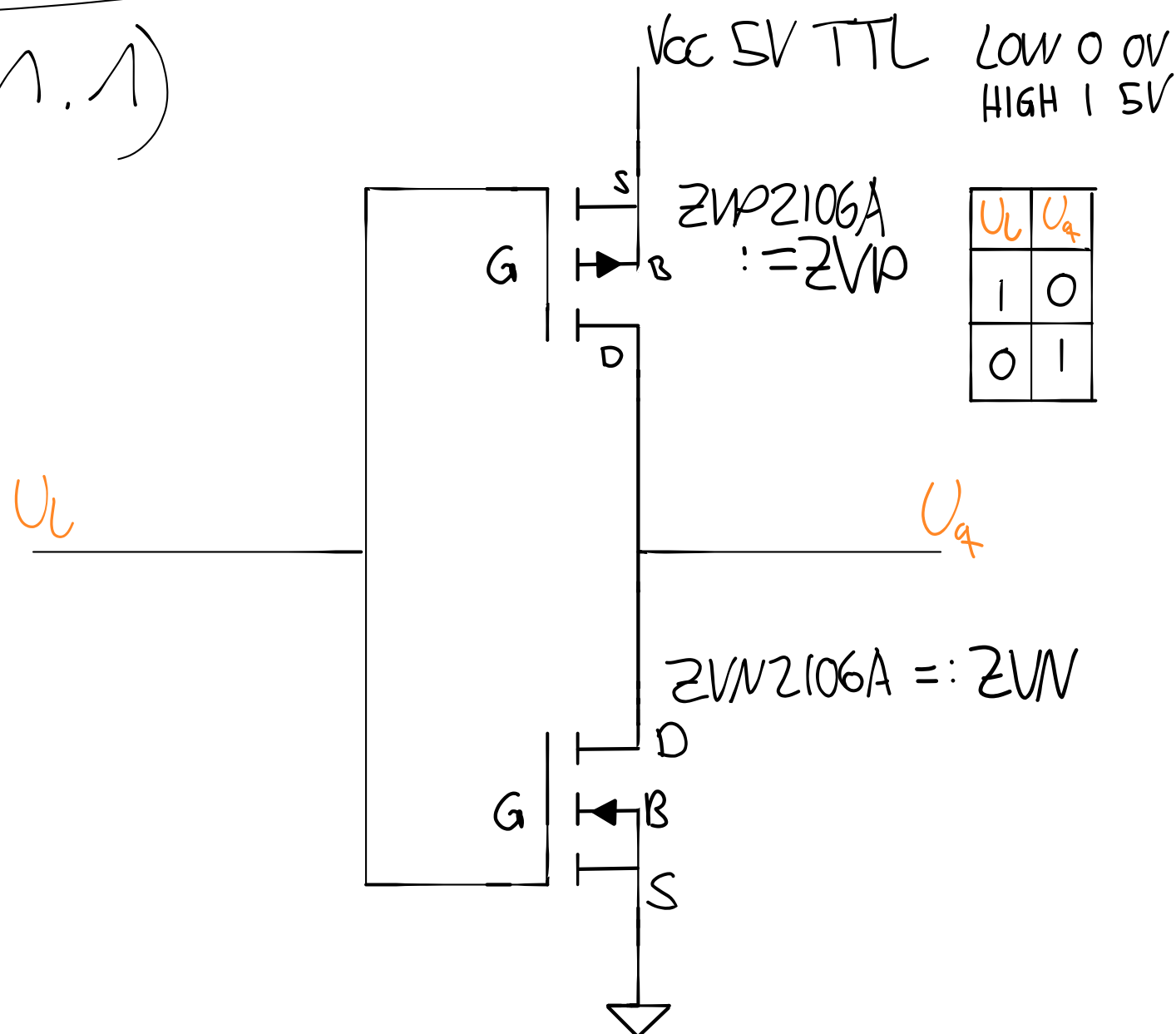| U_e	U_a
1	0
0	1

Das Gate ist durch SIO2 Schicht isoliert.
⇒ Gate ist nicht intern verbunden. Wie auch das Schaltsymbol andeutet. Dies macht einen unipolaren Transistor aus.

2)

VCC 5V TTL

ZVP   ZVP

U_e'

U_e

ZVN   ZVN

U_a

U_e'	U_e	U_a
0	0	1
0	1	1
1	0	1
1	1	0

Da es sich um eine Transistor Transistor Logik Schaltung handelt würde sich die standard Spannung von 0V für LOW ∧ 5V für HIGH anbieten. Diese ist auch weit über der Thresholdvoltage.

1.3)

ZVN2106A:

max. $V_{DS} = 60V$

$V_{GS(th)} = \min 0.8V \; \max 2.4V$
@ $I_D = 1mA \wedge V_{DS} = V_{GS}$

Betriebstemperaturbereich:
-55 bis 150C°

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	60	V
Continuous Drain Current at T_{amb}=25°C	I_D	450	mA
Pulsed Drain Current	I_{DM}	8	A
Gate Source Voltage	V_{GS}	± 20	V
Power Dissipation at T_{amb}=25°C	P_{tot}	700	mW
Operating and Storage Temperature Range	T_j;T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	BV_{DSS}	60		V	I_D=1mA, V_{GS}=0V
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.8	2.4	V	ID=1mA, V_{DS}= V_{GS}
Gate-Body Leakage	I_{GSS}		20	nA	V_{GS}=± 20V, V_{DS}=0V
Zero Gate Voltage Drain Current	I_{DSS}		500 100	nA µA	V_{DS}=60 V, V_{GS}=0 V_{DS}=48 V, V_{GS}=0V, T=125°C(2)
On-State Drain Current(1)	$I_{D(on)}$	2		A	V_{DS}=18V, V_{GS}=10V
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		2	Ω	V_{GS}=10V,I_D=1A
Forward Transconductance (1)(2)	g_{fs}	300		mS	V_{DS}=18V,I_D=1A
Input Capacitance (2)	C_{iss}		75	pF	
Common Source Output Capacitance (2)	C_{oss}		45	pF	V_{DS}=18 V, V_{GS}=0V, f=1MHz
Reverse Transfer Capacitance (2)	C_{rss}		20	pF	

ZVP2106A:

max. $V_{DS} = -60V$

$V_{GS(th)} = \min -1.5V \; \max 3.5V$
@ $I_D = -1mA \wedge V_{DS} = V_{GS}$

Betriebstemperaturbereich:
-55 bis 150C°

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	-60	V
Continuous Drain Current at T_{amb}=25°C	I_D	-280	mA
Pulsed Drain Current	I_{DM}	-4	A
Gate Source Voltage	V_{GS}	± 20	V
Power Dissipation at T_{amb}=25°C	P_{tot}	700	mW
Operating and Storage Temperature Range	T_j;T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	BV_{DSS}	-60		V	I_D=-1mA, V_{GS}=0V
Gate-Source Threshold Voltage	$V_{GS(th)}$	-1.5	-3.5	V	ID=-1mA, V_{DS}= V_{GS}
Gate-Body Leakage	I_{GSS}		20	nA	V_{GS}=± 20V, V_{DS}=0V
Zero Gate Voltage Drain Current	I_{DSS}		-0.5 -100	µA µA	V_{DS}=-60 V, V_{GS}=0 V_{DS}=-48 V, V_{GS}=0V, T=125°C(2)
On-State Drain Current(1)	$I_{D(on)}$	-1		A	V_{DS}=-18 V, V_{GS}=-10V
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		5	Ω	V_{GS}=-10V,I_D=-500mA
Forward Transconductance (1)(2)	g_{fs}	150		mS	V_{DS}=-18V,I_D=-500mA
Input Capacitance (2)	C_{iss}		100	pF	
Common Source Output Capacitance (2)	C_{oss}		60	pF	V_{DS}=-18V, V_{GS}=0V, f=1MHz
Reverse Transfer Capacitance (2)	C_{rss}		20	pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$		7	ns	
Rise Time (2)(3)	t_r		15	ns	V_{DD}=-18V, I_D=-500mA
Turn-Off Delay Time (2)(3)	$t_{d(off)}$		12	ns	
Fall Time (2)(3)	t_f		15	ns	