

 I Q R	IBIS QUALITY REPORT	date	1 (9)
		19-Mar-24	

IBIS Quality Report

Company:	STMicroelectronics
IBIS file name	st25dv04kc_so8_3v3.ibs
IBIS Version:	4.0



	IBIS QUALITY REPORT	date	2 (9)
		19-Mar-24	

Contents

1. MODELING	3
1.1 Component description	3
1.2 Modeling conditions	3
1.3 Circuit for data extraction	5
2. IBISCHK6 CHECK	6
2.1 Result Check by IBISCHK6	6
3. FUNCTIONAL CHECK	7
3.1 Functional verification	7
4. EXTRA INFORMATION	9

	IBIS QUALITY REPORT	date	3 (9)
		19-Mar-24	

1. MODELING

IBIS (I/O, Buffer, Information, Specification) provide a standardized way, officially EIA standard 656-A-1999 and IEC 62014-1, to model behaviorally a digital component input, output and I/O buffers.

1.1 Component description

Component name	Technology	Component description
ST25DV04K	CMOS	The ST25DV04K is a Dynamic NFC RFID tag IC 4-Kbit EEPROM memory. This model includes SO8 package elements.

1.2 Modeling conditions

Simulator used	Eldo ams 2019.3 (Siemens)
----------------	---------------------------

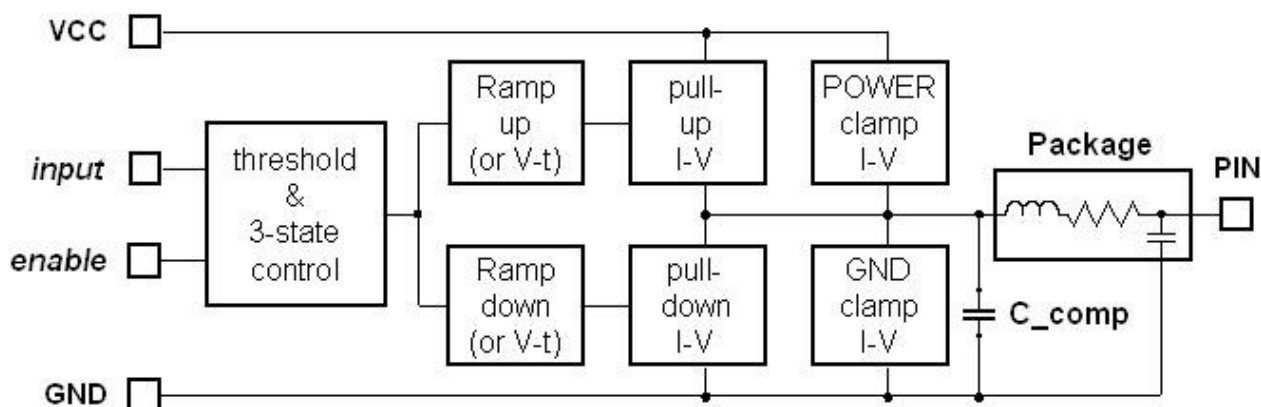


Figure 1: IBIS model generic structure

conditions	Typical	Minimum	Maximum
Temperature [C°]	25	-40	85
Voltage Supply [Volt]	3.30	3.00	3.60
Process setting	nom	weak	strong

	IBIS QUALITY REPORT	date	4 (9)
		19-Mar-24	

Model names (of Component)	Model Type	C_comp (typ, min, max)
mod_sda	I/O_open_drain	3.063pF (typ), 2.925pF(min), 3.207pF(max)
mod_scl	Input	2.118pF(typ), 2.024pF(min), 2.219pF(max)
mod_gpo_od	Out_open_drain	2.219pF(typ), 2.119pF(min), 2.324pF(max)

Model names (of Component)	Threshold and Vmeas	Timing parameters (if used)
mod_scl	Vil=0.825V , Vih=2.475V	
mod_sda/gpo_od	Vmeas=1.650V	Cref = 30pF Rref=5K Vref=3.30

Package	Description
SO8	SO 8 Leads (4.9x6mm)

	IBIS QUALITY REPORT	date	5 (9)
		19-Mar-24	

1.3 Circuit for data extraction

The I-V data are extracted by simulations using the simulation setup shown in figure 2 below. This model is an I/O model, other model type derived from this structure. For more accurate modeling, certain combinations of V-T tables are recommended (with exception of Input-only model types) using the simulation setup shown in figure 3, with load conditions specified.

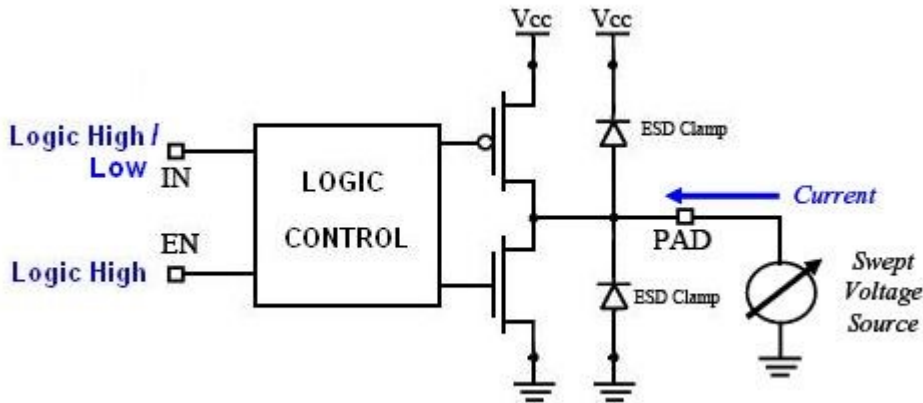


Figure 2: Simulation Setup to extract I/V data from I/O model type

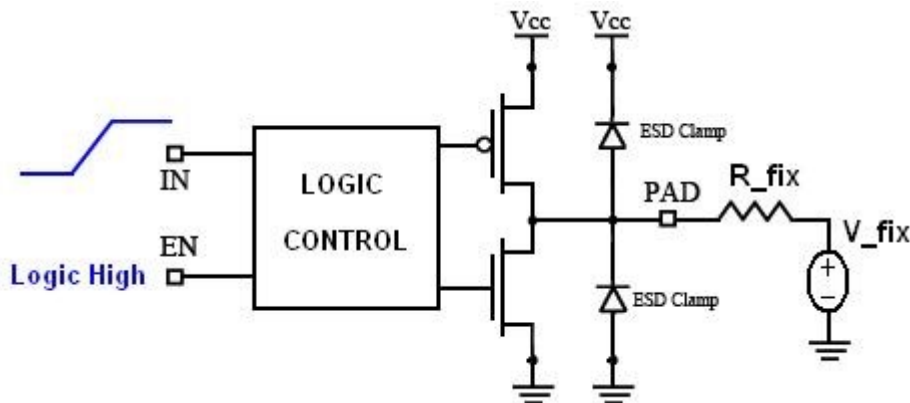


Figure 3: Simulation Setup to extract V/T data from I/O model type
(see also Table 1)

V/T data condition extractions	Load conditions
Rising waveform	R_fix=1000 Ohm, V_fix= 3.3 V
Rising waveform	R_fix=5k Ohm, V_fix= 3.3 V
Falling waveform	R_fix=5k Ohm, V_fix= 3.3 V
Falling waveform	R_fix=1000 Ohm, V_fix= 3.3 V

Table 1: V/T curve extraction load conditions

	IBIS QUALITY REPORT	date	6 (9)
		19-Mar-24	

2. IBISCHK6 CHECK

The created IBIS model must be checked using IBISCHK6 parser to ensure that the syntax is correct. The result of the check is showed in the next section with some comments (optional).

2.1 Result Check by IBISCHK6

IBISCHK6 V6.0.1

Checking st25dv04kc_so8_3v3.ibs for IBIS 4.2 Compatibility...

Errors : 0

File Passed

Adding comments about the Warning or Note:
The output check contains zero Notes and zero Warnings.

	IBIS QUALITY REPORT	date	7 (9)
		19-Mar-24	

3. FUNCTIONAL CHECK

The created IBIS model must be compared with the Original Buffer circuit. The signal outputs, in the same load conditions (Figure 4), must match. These output comparisons are presented in TYP, MIN and MAX condition. This section cannot be defined for Input and Terminator model type because they are input-only model types.

How well results are matched?	Put "X" into the right filed
Curves shape match correctly, but there is a little time translation.	
Curves shape match correctly, but there is a mismatch into the Overshoot and/or Undershoot regions.	
Curves match well.	X

3.1 Functional verification

Circuit used for output comparison results is illustrated in figure 4.

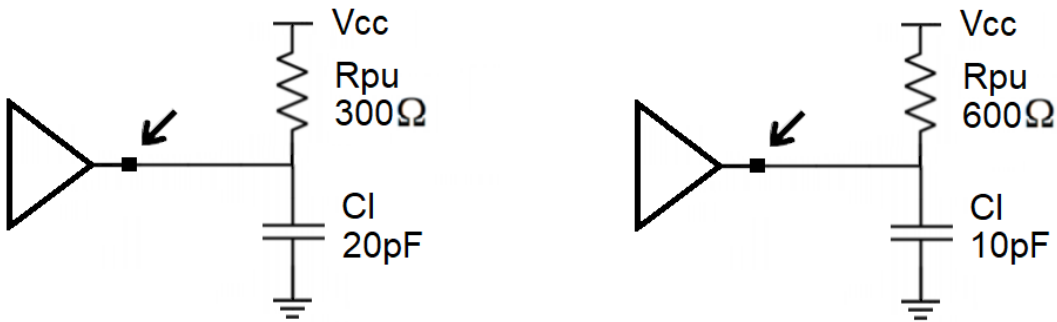


Figure 4: Circuit used for functional check on SDA (left) and GPO_OD (right)

	IBIS QUALITY REPORT	date	8 (9)
		19-Mar-24	

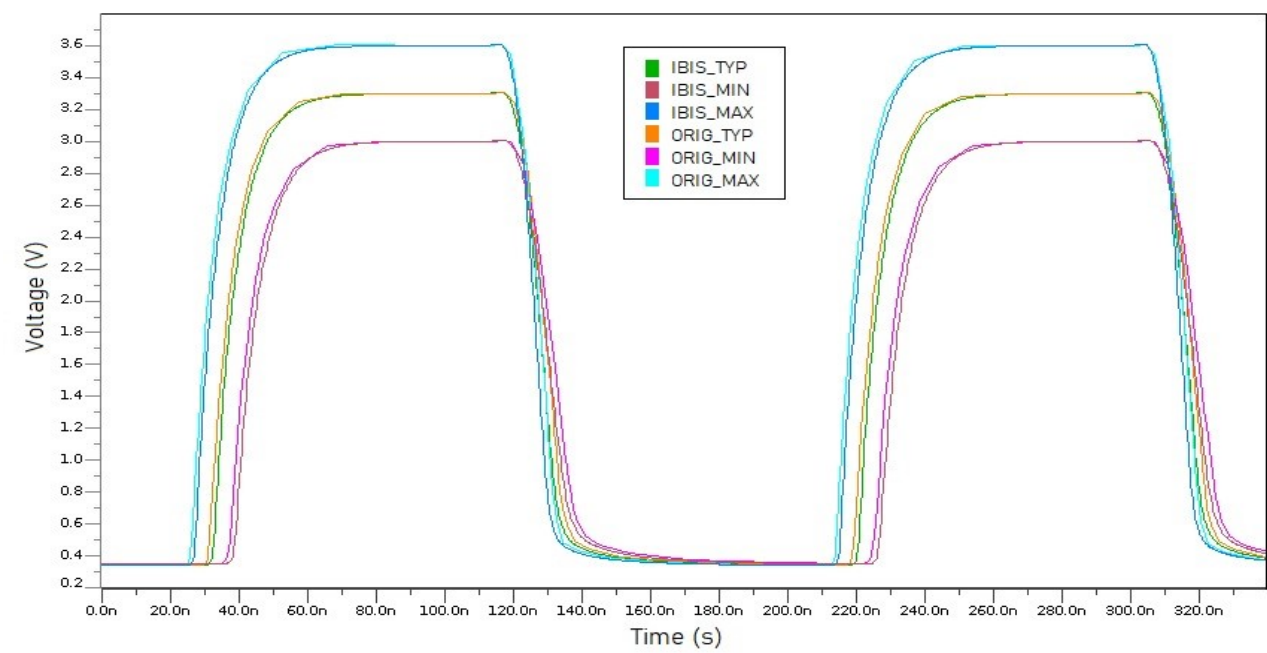


Figure 5: IBIS vs Original comparison results of “mod_sda” Model

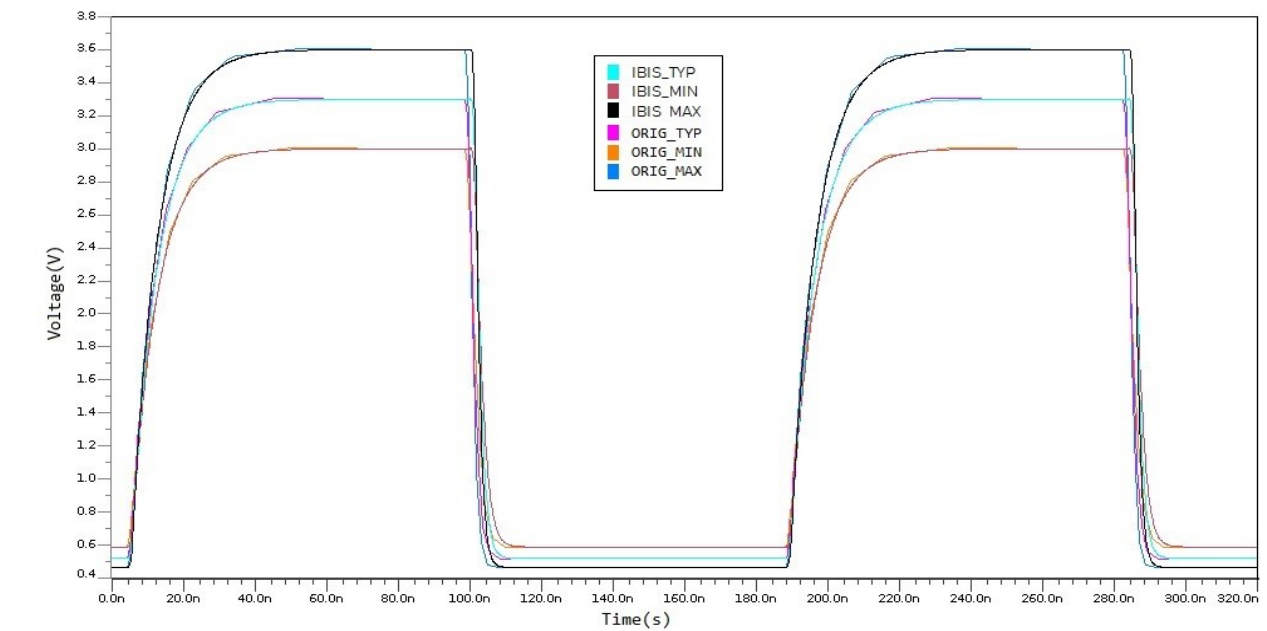


Figure 6: IBIS vs Original comparison results of “mod_gpo_od” Model

Output Comparisons:

Adding comments about the comparison:

	IBIS QUALITY REPORT	date	9 (9)
		19-Mar-24	

4. EXTRA INFORMATION

This section can contain other extra information, to explain other features of peculiar IBIS model.

Other specifications	description