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Versal AI Edge Series Data Sheet: DC and AC Switching Characteristics (DS958)

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LVDS DC Specifications (LVDS15)

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LVDS DC Specifications (LVDS15)

The LVDS15 standard is available in the XPIO banks. See the Versal Adaptive SoC SelectIO Resources Architecture Manual ([AM010](#)) for more information.

Table: LVDS15 DC Specifications

Symbol	DC Parameter	Conditions	Min	Typ	Max	Units
V_{CCO} ¹	Supply voltage		1.425	1.500	1.575	V
V_{ODIFF} ²	Differential output voltage: (Q - $\overline{Q}$), Q = High $\overline{Q}$ - Q, $\overline{Q}$ = High	$R_T = 100\Omega$ across $\overline{Q}$ and Q signals	247	350	454	mV
V_{OCM} ²	Output common-mode voltage	$R_T = 100\Omega$ across $\overline{Q}$ and Q signals	1.000	1.20	1.320	V

Symbol	DC Parameter	Conditions	Min	Typ	Max	Units
V_{IDIFF}^3	Differential input voltage: (Q - $\bar{Q}$), Q = High ($\bar{Q}$ - Q), $\bar{Q}$ = High		100	350	600 ³	mV
$V_{ICM_DC}^4$	Input common-mode voltage (DC coupling)		0.300	1.200	1.320	V
$V_{ICM_AC}^5$	Input common-mode voltage (AC coupling)		200	–	330	mV

1. In XPIO banks, when LVDS15 is used with input-only functionality, it can be placed in a bank where the V_{CCO} levels are different from the specified level only if internal differential termination is not used. In this scenario, V_{CCO} must be chosen to ensure the input pin voltage levels do not violate the Recommended Operating Condition (Table 1) specification for the V_{IN} I/O pin voltage.
2. V_{OCM} and V_{ODIFF} values are for LVDS_PRE_EMPHASIS = FALSE.
3. Maximum V_{IDIFF} value is specified for the maximum V_{ICM} specification. With a lower V_{ICM} , a higher V_{DIFF} is tolerated only when the recommended operating conditions and overshoot/undershoot V_{IN} specifications are maintained.
4. Input common mode voltage for DC coupled configurations. EQUALIZATION = EQ_NONE (Default).
5. AC coupling with external bias and external differential termination with EQUALIZATION settings enabled. EQUALIZATION = EQ_LEVEL0, EQ_LEVEL1, EQ_LEVEL2, EQ_LEVEL3, or EQ_LEVEL4, any setting except EQ_NONE.