Operator Type	Operators	Operation Type	Number of Operands	Scala Represent	VHDL Represent	VHDL Operand Type	VHDL Result Type	Verilog-HDL Represent	Verilog-HDL Operand Type	Verilog-HDL Result Type
Logical	AND	Bit-WIse	2	&	AND	Scalar	Boolean	&	Scalar	Data, x
Logical	OR	Bit-WIse	2	|	OR	Scalar	Boolean	|	Scalar	Data, x
Logical	NAND	Bit-WIse	2	N/A	NAND	Scalar	Boolean	=(&)	Scalar	Data, x
Logical	NOR	Bit-WIse	2	N/A	BOR	Scalar	Boolean	~(||)	Scalar	Data, x
Logical	XOR	Bit-WIse	2	^	XOR	Scalar	Boolean	^	Scalar	Data, x
Logical	XNOR	Bit-WIse	2	N/A	XNOR	Scalar	Boolean	~(^)	Scalar	Data, x
Logical	NOT	Bit-WIse	2	!	NOT	Scalar	Boolean	~	Scalar	Data, x
Boolean	AND	Data-Wise	2	&&	N/A	Scalar		&&	Scalar	0, 1, x
Boolean	OR	Data-Wise	2	||	N/A	Scalar		||	Scalar	0, 1, x
Reduction	AND	Data-Wise	1	N/A	N/A	N/A	N/A	&	Scalar	0, 1, x
Reduction	OR	Data-Wise	1	N/A	N/A	N/A	N/A	|	Scalar	0, 1, x
Reduction	NAND	Data-Wise	1	N/A	N/A	N/A	N/A	~ &	Scalar	0, 1, x
Reduction	NOR	Data-Wise	1	N/A	N/A	N/A	N/A	~ |	Scalar	0, 1, x
Reduction	XOR	Data-Wise	1	N/A	N/A	N/A	N/A	^	Scalar	0, 1, x
Reduction	XNOR	Data-Wise	1	N/A	N/A	N/A	N/A	~ ^	Scalar	0, 1, x
Reduction	NEGATION	Data-Wise	1	N/A	N/A	N/A	N/A	!	Scalar	0, 1, x
Relational	Equality	Data-Wise	2	==	=	Any	Boolean	==	Scalar	0, 1, x
Relational	Inequality	Data-Wise	2	!=	/=	Any	Boolean	!=	Scalar	0, 1, x
Relational	Eq inclusive	Data-Wise	2	N/A	N/A	N/A	N/A	===	Scalar	0, 1, x
Relational	Ineq inclusive	Data-Wise	2	N/A	N/A	N/A	N/A	!==	Scalar	0, 1, x
Relational	Less than	Data-Wise	2	<	<	Scalar	Boolean	<	Scalar	0, 1, x
Relational	Less than or Eq	Data-Wise	2	<=	<=	Scalar	Boolean	<=	Scalar	0, 1, x
Relational	Greater than	Data-Wise	2	>	>	Scalar	Boolean	>	Scalar	0, 1, x
Relational	Gt or Eq	Data-Wise	2	>=	>=	Scalar	Boolean	>=	Scalar	0, 1, x
Arithmetic	Addition	Data-Wise	2	+	+	Numeric	Numeric	+	Numeric	Data, x
Arithmetic	Subtraction	Data-Wise	2	-	-	Numeric	Numeric	-	Numeric	Data, x
Arithmetic	Multiplication	Data-Wise	2	*	*	Z/R	same as A	*	Numeric	Data, x
Arithmetic	Multiplication	Data-Wise	2	N/A	*	P, Z/R	same as A	N/A	N/A	N/A
Arithmetic	Multiplication	Data-Wise	2	N/A	*	Z/R, P	same as B	N/A	N/A	N/A
Arithmetic	Division	Data-Wise	2	/	/	Z/R	same as A	/	Numeric	Data, x
Arithmetic	Division	Data-Wise	2	N/A	/	P, Z/R	same as B	N/A	N/A	N/A
Arithmetic	Division	Data-Wise	2	N/A	/	Z/R, P	same as A	N/A	N/A	N/A
Arithmetic	Modulus	Data-Wise	2	%	%	Z	Z	%	Numeric	Data, x
Arithmetic	Remainder	Data-Wise	2	N/A	rem	Z	Z	N/A	N/A	N/A
Arithmetic	Exponent	Data-Wise	2	N/A	**	R/Z, Z	same as A	**	Scalar	Data, x
Shift	Logical Left	Data-Wise	2	<<	sll	Scalar	same as A	<<	Scalar	Data, x
Shift	Logical Right	Data-Wise	2	>>>	srl	Scalar	same as A	>>	Scalar	Data, x
Shift	Arithmetic Right	Data-Wise	2	>>	sla	Scalar	same as A	>>	Scalar	Data, x
Shift	Left Rotate	Data-Wise	2	N/A	rol	Scalar	same as A	N/A	N/A	N/A
Shift	Right Rotate	Data-Wise	2	N/A	ror	Scalar	same as A	N/A	N/A	N/A
Bit manipurate	Concatenation	Data-Wise	>1	N/A	&	N/Array		{ , }	Scalar	Data, x

Legend:

N/A — Not Available

Z/R — Integer or Real

P — Physical

N/Array — Numeric or Array