

MOSFET Symbols

MOSFET has many symbols depend on mode of operation. for instance Mosfet when used in digital circuits, it is represented as shown in figure 1 where in digital circuits Mosfet is used as a switch so direction of current doesn't matter but to distinguish between PMOS and NMOS a bubble is used in case for PMOS as a notation that PMOS is activated at low voltage. While figure 2 depicts various symbols for Mosfet when it is sused in analog circuits in which direction of currents affects circuit operation. Actually no standard for the symbol, it is just drawn for understanding. So you may find books or SW tools are using different symbols even if they were in depletion or enhancement mode. Figure 3 shows another symbols that may be found in tools or books.

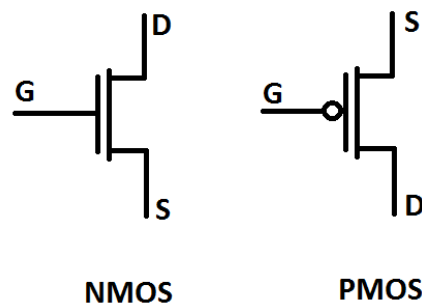


Figure 1: Digital Symbol for MOSFET

	NMOS	PMOS
General Symbol can be used for simplicity		
Symbol for Mosfet in Depletion mode (with and without Bulk terminal)		
Symbol for Mosfet in Enhancement mode (with and without Bulk terminal)		

Figure 2: Analog Symbols for MOSFET

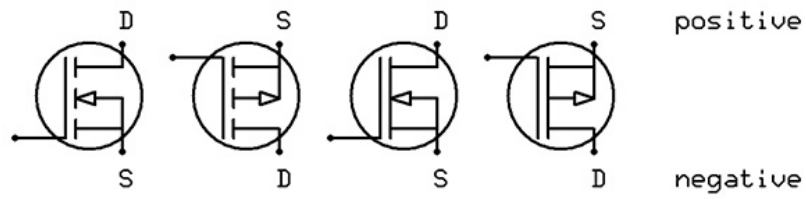


Figure 3: Other Symbols for MOSFET

It worth mentioning here that current of the MOSFET is representing positive carrier direction (i.e. against electrons direction) which is from higher voltage to the lower.