

Summary

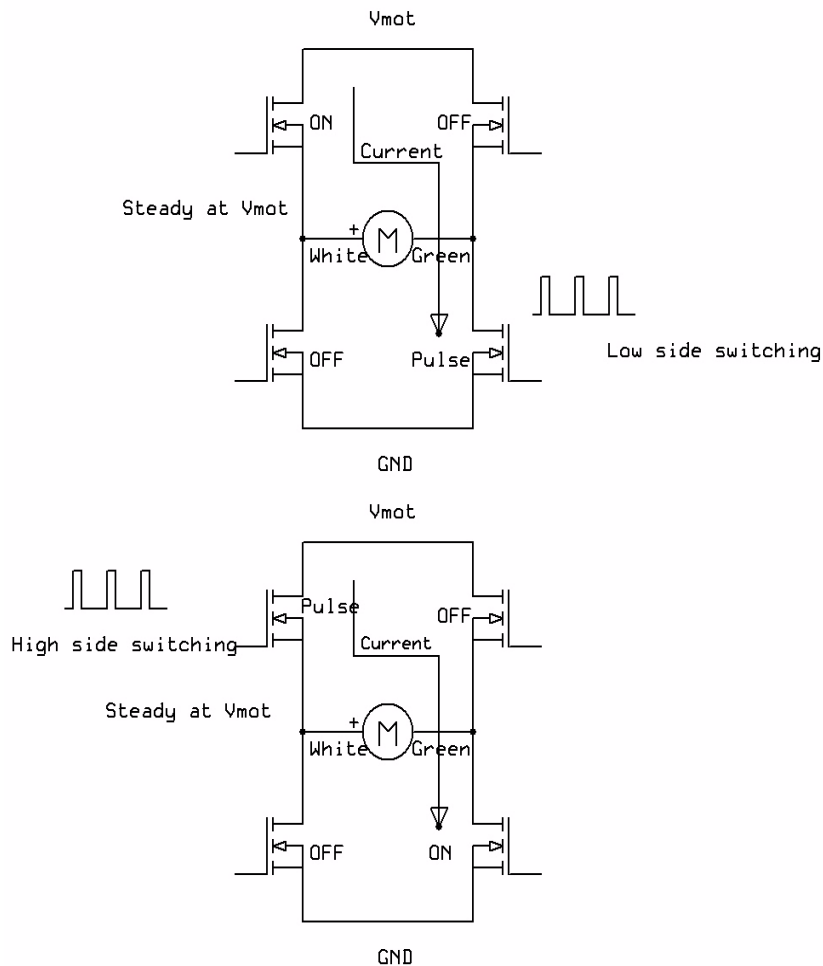
This ECN affects the AX2550, AX2550SC, AX2550HE, AX2550HE-SC, AX2850, AX2850SC, AX2850HE, AX2850HE-SC. The Output Bridge Mode has been changed from LSS (Low Side Switching) to HSS (High Side Switching) to improve grounding of the load and reduce noise. This ECN is effective Mar/22/2007.

Technique Description

In Low Side Switching the Bottom Power MOS is switched while the Top Power MOS is always ON. Consequently the Low Motor Side is toggled while the High Motor Side is constant at practically the V_{mot} voltage.

Should V_{mot} be disconnected from the battery, due to a fuse blowing, a contactor being forced open, the motor would be no longer be kept with one terminal at a secure voltage, but would be allowed to float.

High Side Switching vs Low Side Switching



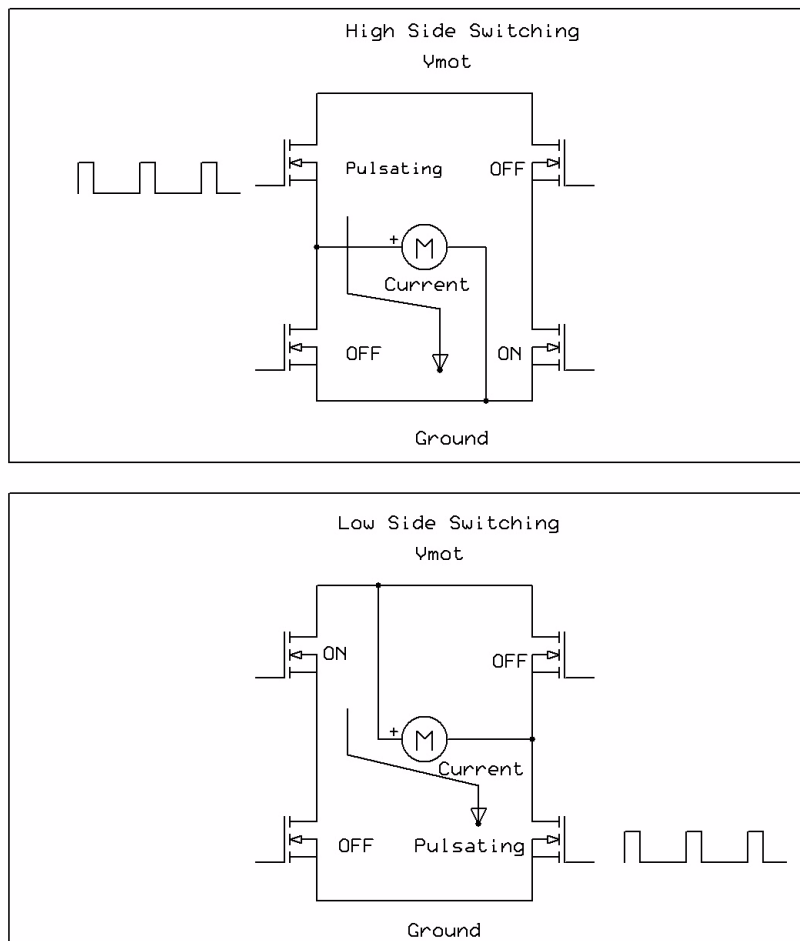
In High Side Switching, the Low Motor Side is essentially grounded. Even is a fuse or a contactor open the positive battery wire, the low side of the motor will remains anchored to ground through the Bottom Power MOS which is always ON.

How this ECN affects the functionality of the controller

The only element of functionality affected is pertinent to the use of a motor in Single Ended Configuration that is a unidirectional motor connected only to one output.

Before this change a unidirectional motor had to be connected between V_{mot} and one Output. After this change the motor has to be connected between one Output and Ground.

See figure below for details



Determining if a controller is HSS or LSS

It is possible to determine if a controller is HSS (High Side Switching) or LSS (Low Side Switching) by bringing the speed/position to neutral (zero speed or center position) and connecting a DC voltmeter between ground and one and then the other output.

If the controller is HSS then both outputs will be at ground potential; if the controller is LSS then both outputs will be at V_{mot} voltage. See figure below for details.

