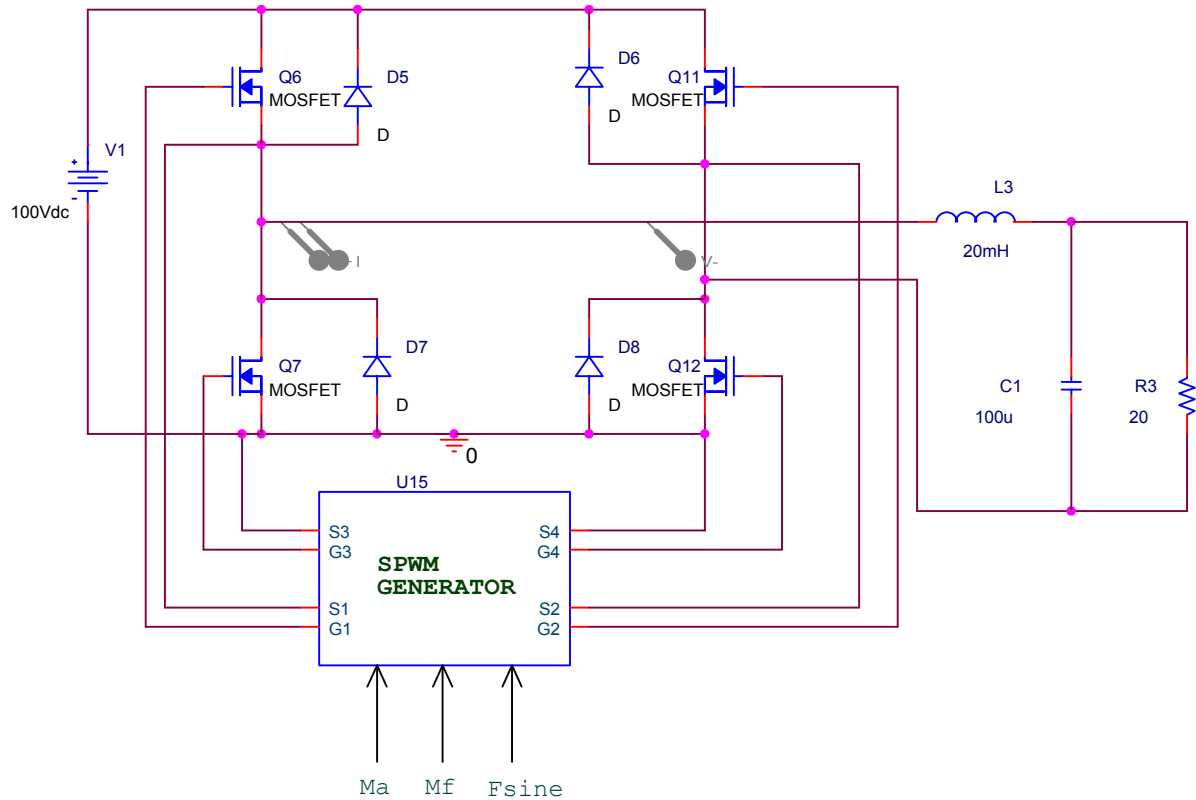


Sinusoidal PWM: Ma, Mf and Fsine.



Sinusoidal PWM inverters provide an easy way to control amplitude, frequency and harmonics contents of the output voltage. There are three control inputs that can be varied for sinusoidal PWM generator: Ma, Mf and Fsine.

To control the amplitude, Ma can be varied between 0 and 1. The amplitude of the output voltage (fundamental) is equal to MaV_{dc} .

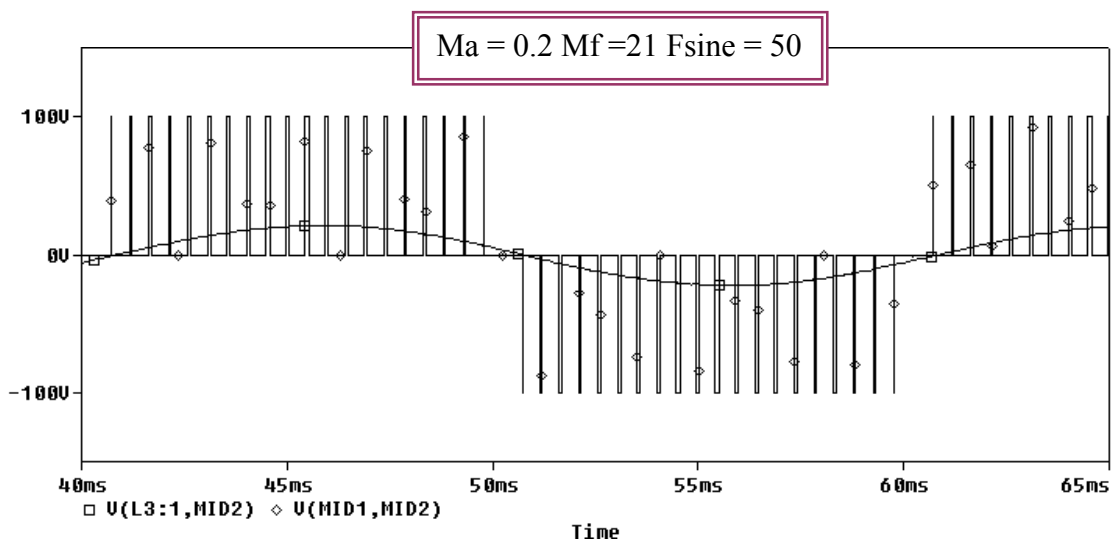
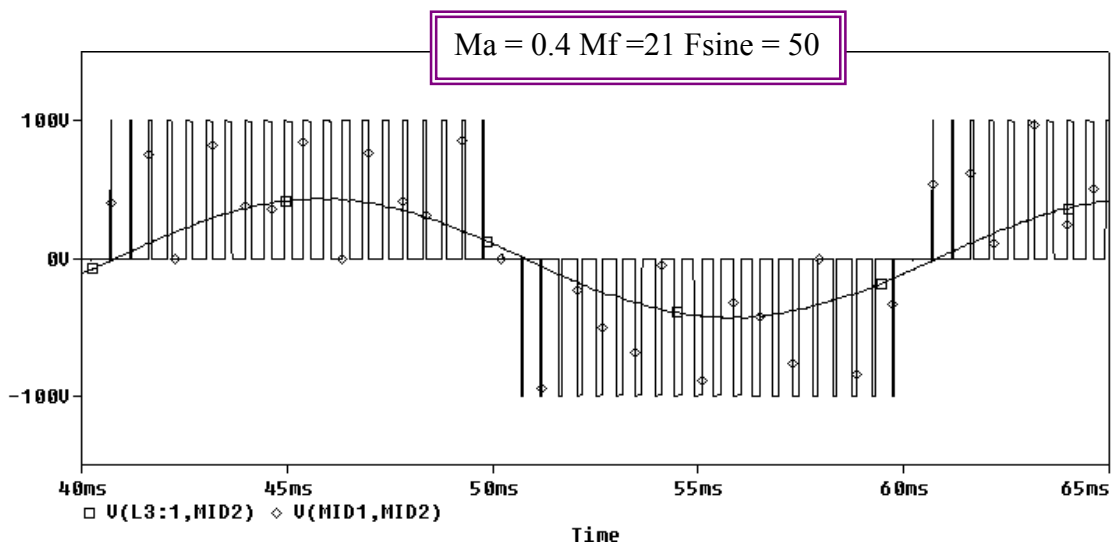
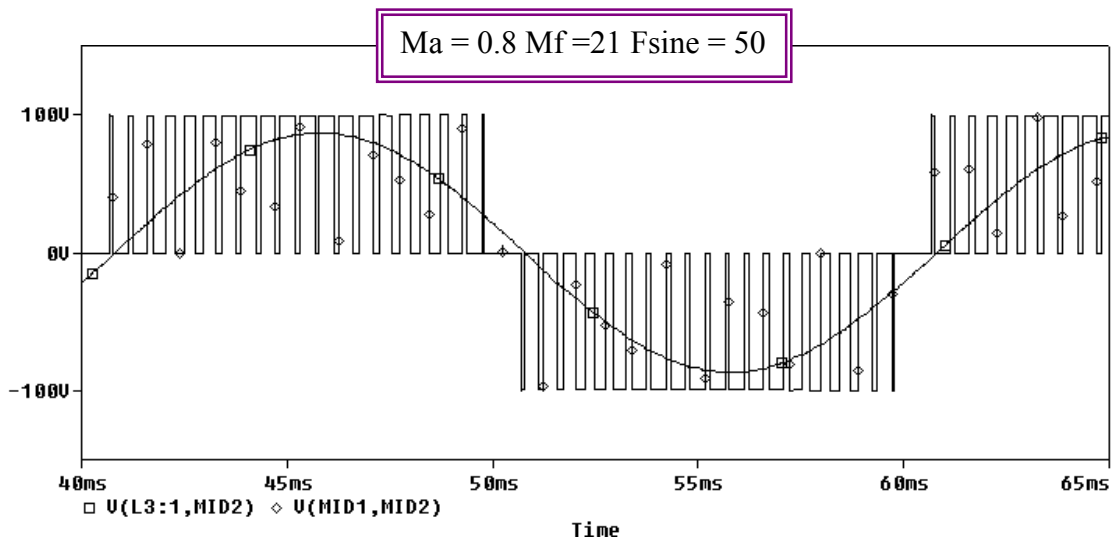
To control the frequency, Fsine can be varied. The frequency of the output voltage is equal to Fsine.

To control the harmonic contents of the output voltage, Mf can be varied. Harmonic frequencies exist at and around multiples of the Mf. Increasing Mf increases the frequencies at which the harmonics occurs. A simple low pass filter can be effective in removing higher order harmonics. Normally, Mf lies in the range of 9 to 500.

SPWM-Unipolar as an Example

- (i) M_a is varied and the other parameters are kept constant.

The output voltage waveforms: before and after filtering.



- (ii) F_{sine} is varied and the other parameters are kept constant.
The output voltage waveforms; before and after filtering.

