A Very Fast Kicker Magnet -A New Approach, M. KUMADA, NIRS; N. AOKI, Y. BABA, H. KIMURA, N. KOBAYASHI, Toshiba - The fast kicker has many applications in an accelerator technology. The state of the art kicker magnet currently available is a several tens of ns. Our design goal is to develop a kicker with a trapezoidal shape of a rise time of 10 ns, and longer than a flat top duration of 100 ns, by employing a saturable magnetic switch developed in pulse compression technology for gas lasers. The rise time is determined by a power supply and a magnet. In this article we report a design, a simulation of a pulse circuit and a result of model experiment using magnetic switch. Under a saturation condition, an inductance of the magnetic switch is required to be as small as possible. This could be achieved by dividing a pulse forming line into multiple pieces and by charging each circuit in parallel with a short pulse thus reducing the size of each magnetic switch which is decreased with its inductance. Under a condition of non saturation, the magnetic switch must have large impedance and the leak current must be as small as possible. The study showed that this leakage current could be negligibly small by choosing proper amorphous material.