

**MULTI-STEP VOLTAGE FOR FORMING RESISTIVE RANDOM ACCESS
MEMORY (RRAM) CELL FILAMENT**

ABSTRACT OF THE DISCLOSURE

5 A memory device and method comprising a metal oxide material disposed between
and in electrical contact with first and second conductive electrodes, and a voltage source
configured to apply a plurality of voltage pulses spaced apart in time across the first and
second electrodes. For each one of the voltage pulses, an amplitude of the voltage increases
during the voltage pulse.

FIG. 3