

MAGNETORESISTIVE DEVICE

ABSTRACT

According to embodiments of the present invention, a magnetoresistive device having a
5 magnetic junction is provided. The magnetic junction of the magnetoresistive device
includes a first fixed magnetic layer structure having a fixed magnetization orientation, a
second fixed magnetic layer structure having a fixed magnetization orientation, and a free
magnetic layer structure having a variable magnetization orientation, wherein the first
10 fixed magnetic layer structure, the second fixed magnetic layer structure and the free
magnetic layer structure are arranged one over the other, wherein the first fixed magnetic
layer structure, the second fixed magnetic layer structure and the free magnetic layer
structure have respective magnetization orientations configured to orient in a direction at
least substantially perpendicular to a plane defined by an interface between the first fixed
15 magnetic layer structure and the second fixed magnetic layer structure, wherein the
respective magnetization orientations of the first fixed magnetic layer structure and the
second fixed magnetic layer structure are oriented in opposite directions, and wherein the
magnetization orientation of the first fixed magnetic layer structure is configured to
oscillate in a first direction in response to a current or a voltage applied across the
20 magnetic junction so as to change the magnetization orientation of the free magnetic layer
structure.

Figure 2A