REAL TIME IMPLEMENTATION AND VERIFICATION OF EBERS-MOLL MODEL

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ABSTRACT

Today's in any electronic circuit diode and transistor are essential components. It is too much difficult to design or implement a circuit without these two silicon made devices. From the point of fabrication and atomic structure, diode is single junction component whereas transistor is double junction. As per this simple construction a normal though can arise from any human mind, why a transistor cannot make by simply connecting two diodes? The answer for this question is very well explained by Ebers Moll model in theoretical way. By this article we have tried to demonstrate the same concept practically. By performing various experiments like i/p-o/p characteristics, DC-AC analysis, etc. for both, one is single transistor and later one is two back to back diode combinations, it is easy to answer mentioned question.

KEYWORDS: Ebers Moll Model, Diode 1N4007, Transistor BC547, Saturation Condition