

## Evaluation of electrical parameters of electron and proton irradiated GaInP/GaAs/InGaAs metamorphic solar cells

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*Received April 26, 2023*

*Revised September 27, 2023*

*Accepted for publication April 3, 2024*

Changes of electrical parameters in electron and proton irradiated metamorphic GaInP/GaAs/InGaAs solar cells have been investigated experimentally and numerically simulation by single diode mode. Basic electrical parameters of solar cells under 1 MeV electron and 10 MeV proton irradiation with different displacement damage doses were extracted. The results show that the dark current, ideal factor and series resistance of solar cells increase and parallel resistance decrease with the increase of the irradiation fluence. A simple method for evaluating radiation effects of the electrical parameters of solar cells is established.

**Keywords:** GaAs solar cell, electron and proton irradiation, curve fitting, displacement damage dose.

Full text of the paper will appear in journal SEMICONDUCTORS.