

Solid-State Electronics

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Ref. No: **SSE 2017 676**

Title: A new approach to the extraction of single exponential diode model parameters

Author(s): A. Ortiz-Conde and F. J. Garcia-Sanchez

Referee No: **1** 2

← Do you find the paper a useful contribution in *Solid-State Electronics* as:

- . full-length paper (10 journal pages maximum)? ☒
- . a letter (4 pages, 5 figures, **expedited handling**)? ☐
- . not appropriate for SSE? ☐

↑	Excellent	Good	Fair	Poor
Originality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clarity of Presentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Importance in Field	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

→ Do you find technical weakness of approach, analysis or interpretation? ☐ Yes ☒ No

↓ Is the length of the paper appropriate? ☒ Yes ☐ No

- Do you recommend this paper for publication?:
 - . No, I do not see how this paper could be improved ☐
 - . No, but with major revisions and reinspection, it could be published..... ☐
 - . Yes, but it requires minor revisions which must be satisfactory to the Editor ☒
 - . Yes, it can be published essentially as is..... ☐

CONFIDENTIAL COMMENTS FOR THE EDITOR:

(please use the next page for comments to the authors)

Nowadays the wide set (about 20) of methods to determine a single diode parameters has been proposed. The presented approach is a new and interesting. At the same time, in my opinion, the advantages of presented method are obscure. I recommend minor revision.

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REFeree'S COMMENTS TO AUTHOR:

The paper is devoted to the new method for the extraction of the parameters of a single exponential diode model. Conclusions and abstract reflect main results of the article. References are appropriate. The work could be interesting for Solid-State Electronics. I have minor comments:

1. The wide set of methods to evaluate the parameters of single-exponential diode has been proposed. It is very important to make perfectly clear
 - a) advantages
 - b) differencesof presented approach.
2. Fig.2 and Fig.4 show that resulting curves of n , I_0 (especially) and R as plotted versus I do not approach constant values. What is the rigorous criterion for choosing of current range, in which parameters are determined?
3. Fig.2 shows that n and especially I_0 depend on I_R . How to choose I_R value?
4. Some discussion about accuracy of presented method would be interesting.
5. Fig.4, middle part. Circles correspond to greater values than triangles. At the same time, the I_0 value estimated from circles is smaller than I_0 value estimated from triangles.
6. In my opinion, the extracted values from measurements with the present method should be compared with other authors method results.
7. The acronym "RHS" (page 2, 3-rd paragraph) is not introduced.
8. The way from Eq.(2) to Eq.(3) is not evident.