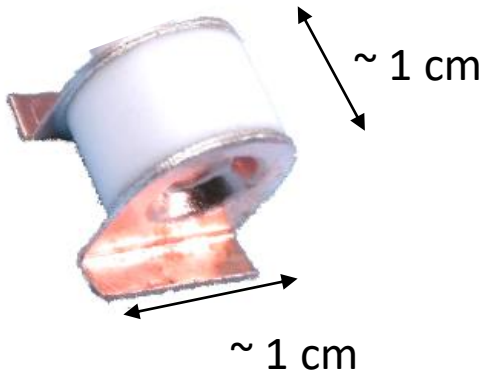


Compact Power Switch Replacement Candidate

SAND2021-0238R

Current Vacuum Switch Technology



MINIATURE TRIGGERED VACUUM SWITCHES
FOR PRECISE INITIATION OF INSENSITIVE LOADS
IN DEMANDING ENVIRONMENTS

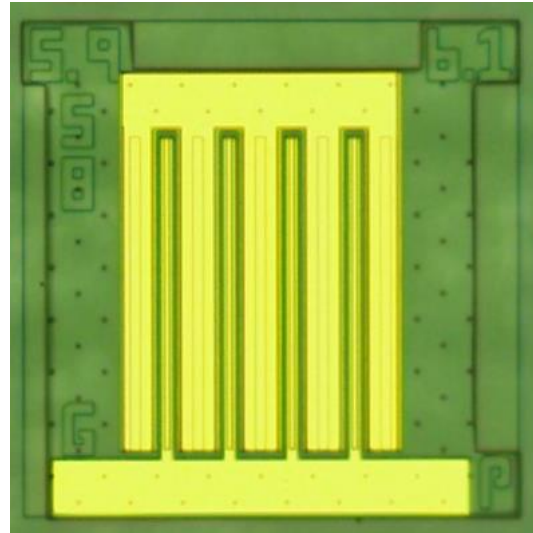
B M Coaker, C Bell, R J Seddon & J S Bower

Presented at the 39th IEEE International Conference on Plasma Science, Edinburgh, UK

8-12 July 2012

- Through technology maturation and current scaling, similar current levels could be reached in a $\sim 5.5 \text{ mm} \times 5.5 \text{ mm}$ area GaN MOSFET chip
- Packaged device would be comparable size to the vacuum switch
- **Devices would have improved timing performance, lower unit cost, enhanced device lifetimes**

4-Finger GaN MOSFET Prototype

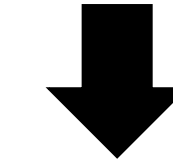
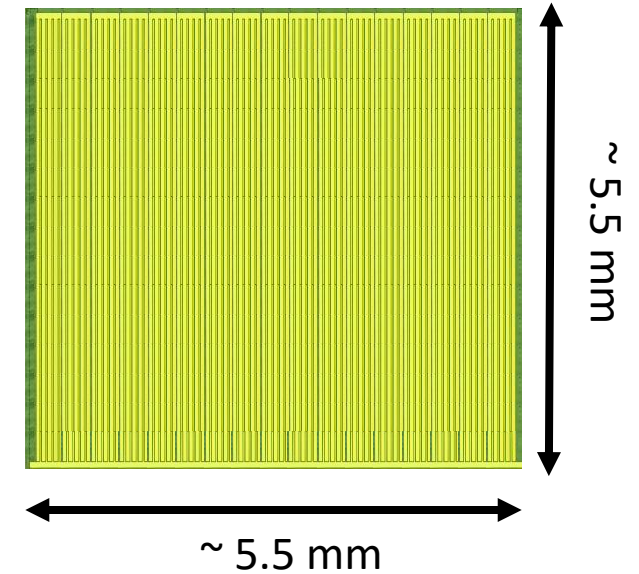


Current Scaling



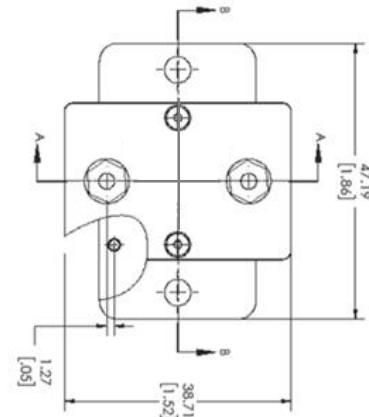
Technology
Maturation

55-Finger GaN MOSFET Concept



Commercial
Package

4 cm x 5 cm
x 2 cm



Dimensions in mm [in.]