



Design Guide for Alps Energy Harvester SPGA series

- 1) Operation
- 2) Mounting
- 3) Output characteristic
- 4) Reference Circuit

Oct.2018

C2 Engineering Dept.

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you want without batteries.

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1) Operation

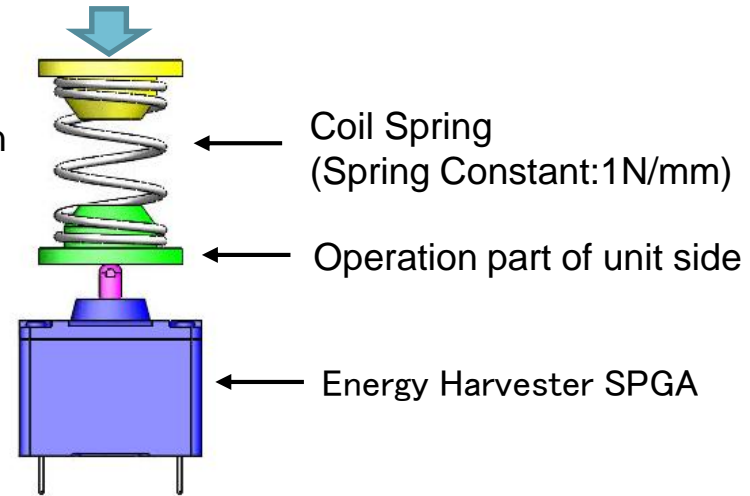
▪ Recommended operating condition

Please press by below condition in order to secure the stable power generation amount.

- Product shall be pressed by actuator with right figure construction
- Operation velocity : 20mm/s. min.
- This product shall be operated the center of the level straight.
- Operation parts of unit side is recommended to be flat shape.

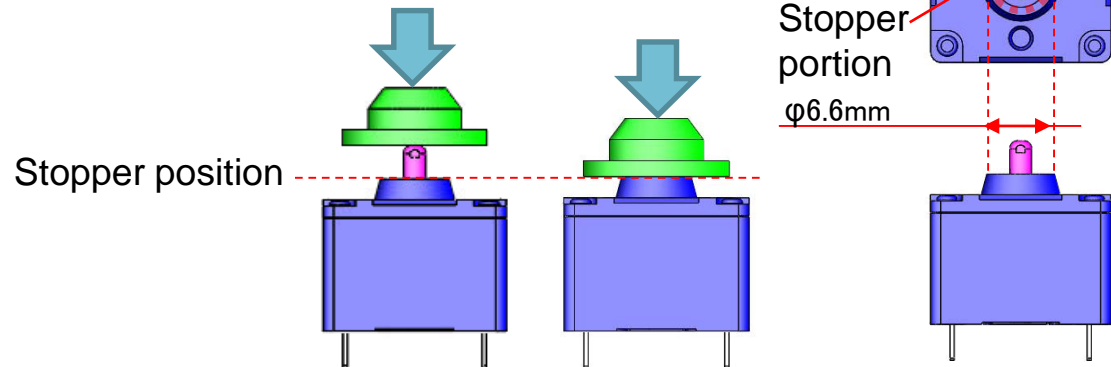
Design guideline / SPGA

Recommended actuator construction



▪ Precautions

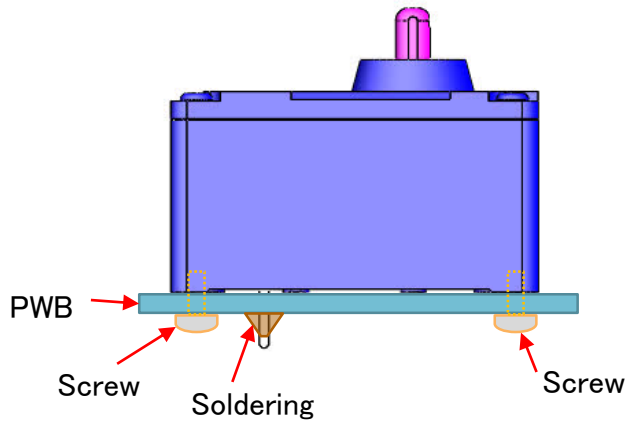
- Please press by the flat one that is wider than stopper of SPGA.



2) Mounting

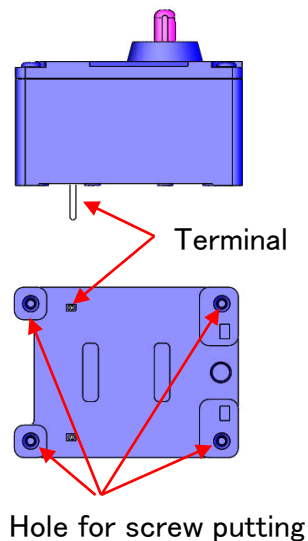
Design guideline / SPGA

Recommended mounting method

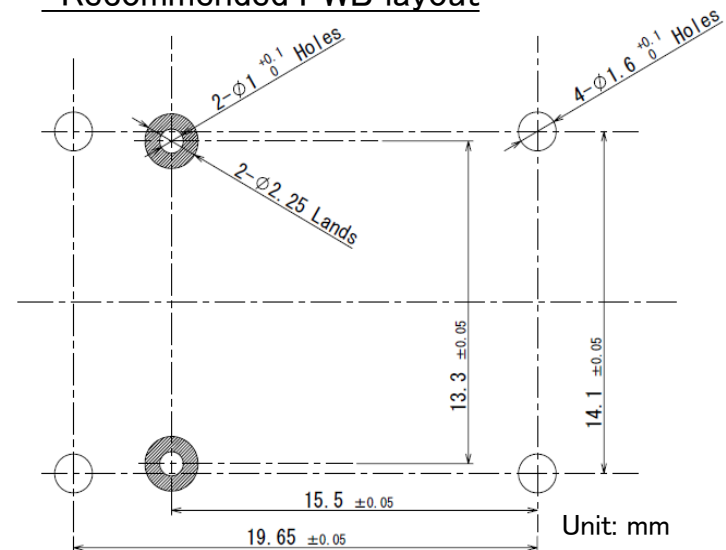


Please use this product attached to PWB.
Please should be installed this product by not only soldering the terminal but also putting screw to the boss hole when you Install this product.

Recommended screw
Taptite screw (P tite)
Nominal diameter of screw M1.4



Recommended PWB layout

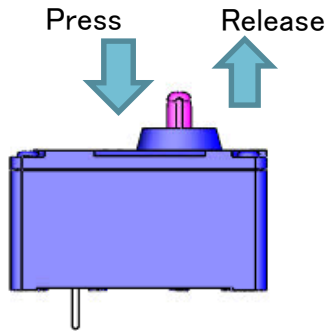


3) Output characteristic

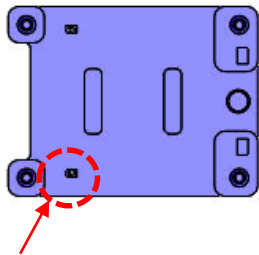
Design guideline / SPGA

▪ Output characteristic (Press / release voltage)

SPGA generates reverse polarity electric generation when you “press” and “release” the device.



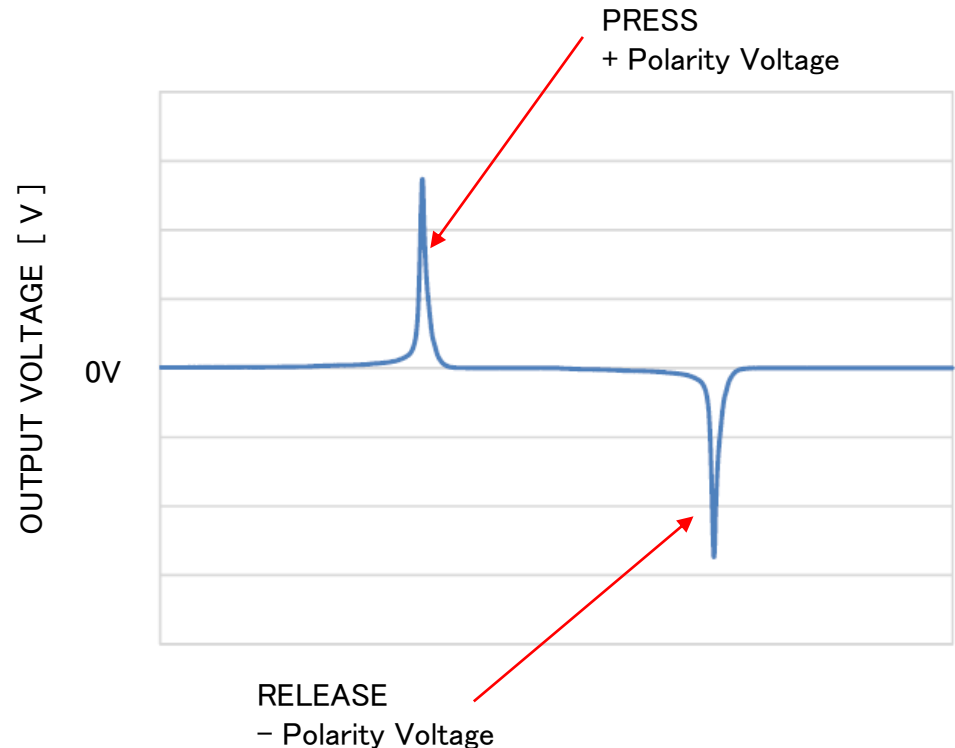
▪ Terminal polarity (Press / release voltage)



+ Polarity Connect

▪ Caution

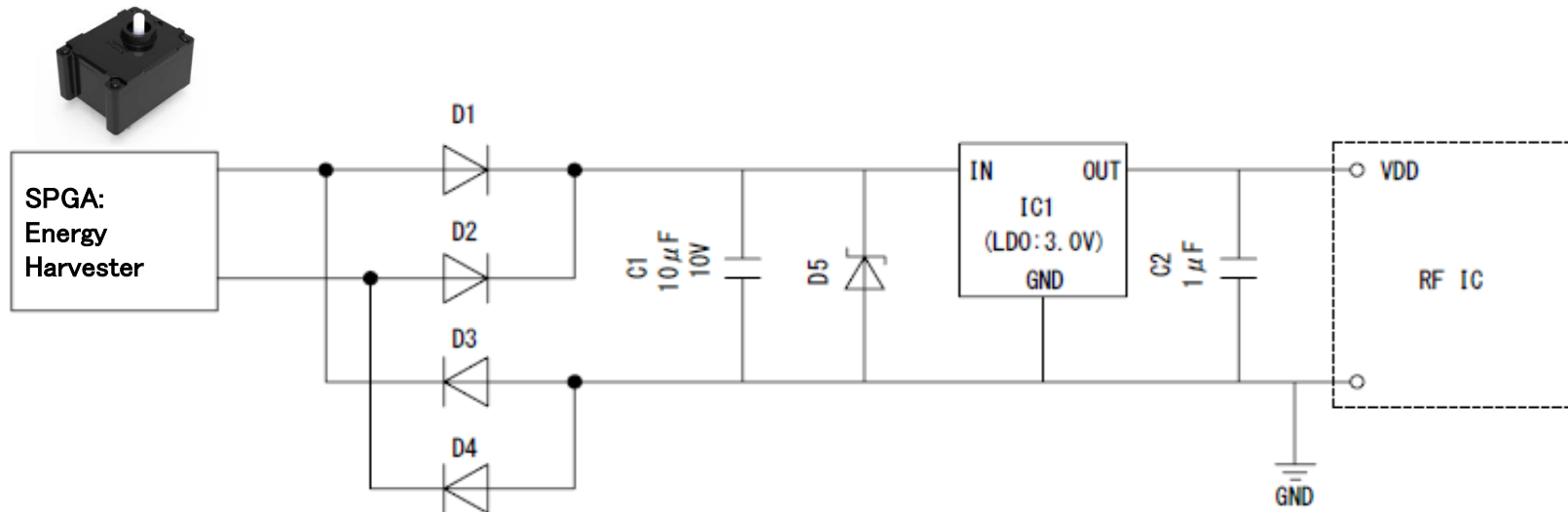
Please be aware that reverse polarity connection will reverse output voltage.



4)Reference circuit (1)

Design guideline / SPGA

• Reference circuit diagram for creating VDD from SPGA.



SPGA generates reverse polarity electric generation when you “press” and “release” the device.

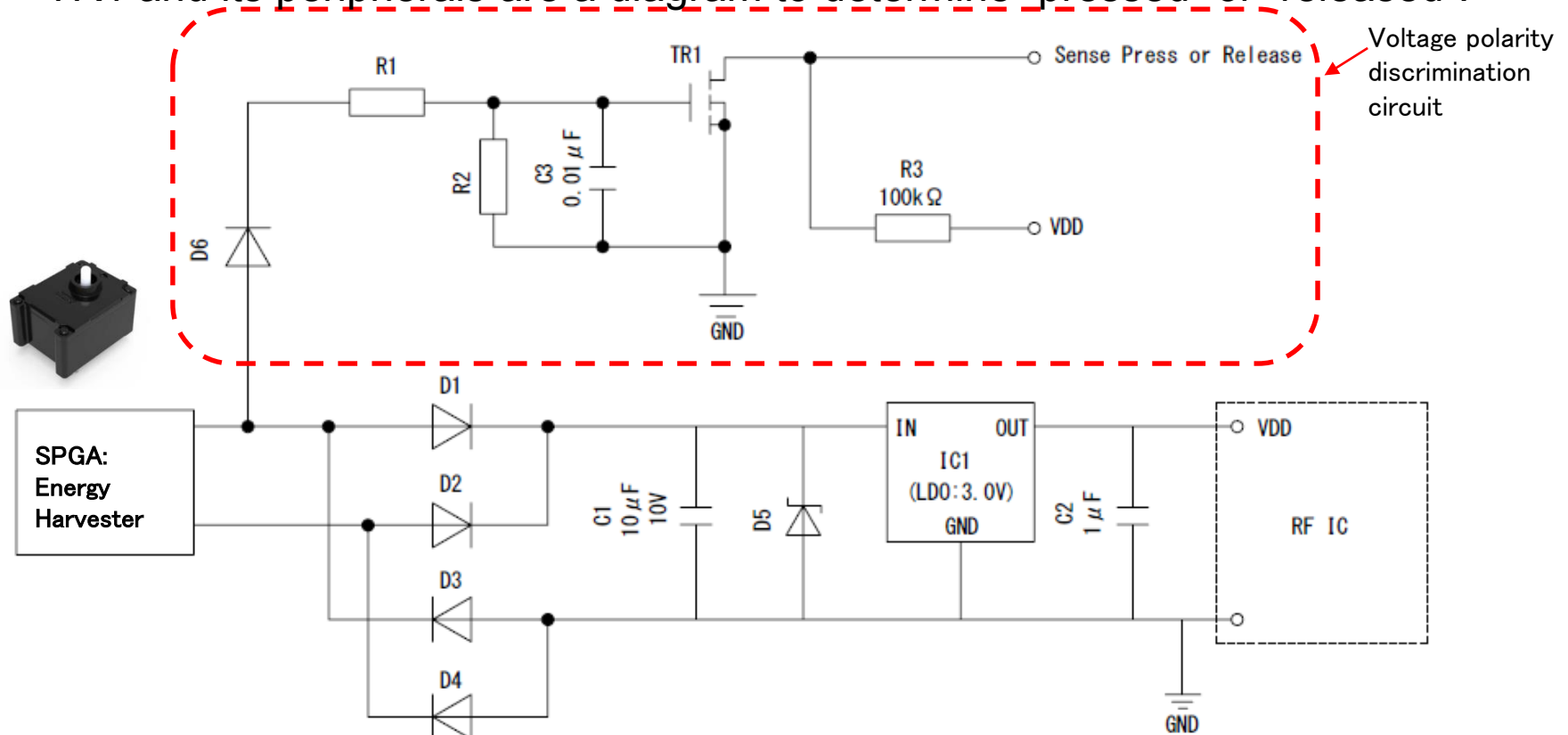
Due to this, it performs full-wave rectification on D1–D4 and after that, it charges on C1 and generates VDD on IC1(LDO).

4)Reference circuit (2)

- Reference circuit diagram for creating VDD from Energy Harvester.
With voltage polarity discrimination circuit.

SPGA generates reverse polarity electric generation when you “press” and “release”.

TR1 and its peripherals are a diagram to determine “pressed” or “released”.



Caution about this material

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