



# Internal Short Circuit (ISC)

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## PRODUCT DESCRIPTION

KULR Technology's Internal Short Circuit Device (ISC) is a proven method for triggering thermal runaway (TR) in lithium-ion cells. Originally developed by NASA and NREL, this patented technology enables thermal runaway events that more closely simulate actual field failures than those triggered by nail or heater methods. KULR Technology exclusively licensed the ISC device technology from NASA and NREL, allowing for its inclusion in a variety of cell types, including 18650, 21700, or pouch cells. By intentionally triggering the ISC device, these cells and battery packs can be tested for failure modes and safety issues, making it a valuable tool for research institutes, battery manufacturers, and OEMs seeking to enhance the performance and safety of their Li-ion batteries.

## AVAILABILITY

Pre-manufactured in 18650 and 21700. Custom cell implementation upon request.

## FEATURES AND BENEFITS

- Provides a field representative thermal runaway trigger method
- Triggers an internal short circuit in a controlled, reliable, and simplified way
- Short circuit is triggered at low a temperature of 40°C and 60°C
- Cell structure is preserved prior to triggering
- Includes all the combined benefits of alternative trigger methods in a single solution

## TYPICAL APPLICATIONS

The ISC device offers a superior alternative to archaic battery testing methods, such as crush and penetration tests, which damage the Li-ion battery cell structure before thermal runaway initiation. By implementing the ISC device, there is no damage to the cell before heating it to a temperature range of 40°C to 60°C, at which the device generates an internal short circuit. This ensures a consistent, reliable, and verified Li-ion battery short circuit, which can be precisely controlled in terms of both timing and location of the ISC device within the battery.



## DISCLAIMER

Data on this Technical Data Sheet (TDS) are typical values and for reference only. The information provided in this TDS, including but not limited to the recommendations for use and application of the product, are based on our knowledge and experience of the product. The product can have a variety of different applications, as well as differing working conditions and environments that are beyond our control. Factors or events that could cause actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We cannot guarantee future results, performance, or achievements. Furthermore, no representations or warranties are made as to the accuracy or reasonableness of any assumptions on which the data or information is based.

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