RTS

Reflowable Thermal Switch

The solution against “Thermal Runaway”
Thermal Runaway...

... may happen to power semiconductors which go beyond regular operation. A simplified explanation is: higher temperature causes higher resistance which again causes higher temperatures....

What are the causes?

> **Miniaturization & high power applications** cause software-based safety measures, like IC regulators, to fail from time to time.

> Additionally, **harsh environments** may cause cracked, rusty or fatigued components, which increase the risk for a thermal runaway.

→ **For those rare cases a protection based on the basic laws of physics is needed.**
RTS – Reflowable Thermal Switch
Production cost reduction:
> The RTS can get soldered by **Reflow @ 260°C**. Through mechanical activation still able to **trip @ 210°C**
> Optimized for standard SMD processes like pick and place

Unmatched electrical values:
> High rated voltage **60 VDC** → competition: just 16VDC
> High operating current up to 100 A
> Low resistance: < 120μOhm
> Very high Breaking Capacity
Smallest dimensions:
> Small footprint: 6.6 x 8.8 mm
> Just two contacts are needed on the PCB

Added value:
> Versions with integrated shunt / fuse → less space on PCB
> Designed to withstand harsh environments according to automotive standards: AEC-Q200, MIL-STD
Fulfilling the AEC-Q200 Standard, the RTS is most suited for use in harsh environments such as those found in automotive vehicles. Automotive applications where high currents have to be controlled using, for example, MOSFET’s are:

- ABS power steering
- Engine cooling fans
- Electrical oil pump
- Diesel fuel heaters
- Glow plugs
- Reverse polarity protection
There are many other applications where high currents are controlled by power electronics. Depending on the customers demand for safety the RTS might be a great added value for:

- Battery protection
- Lighting ballasts
- High ambient temperatures
- Motor drivers
- H-Bridge circuits
- Where DC motors need to be able to run forwards and backwards (Robotics)

...
> **Fully automated** production with integrated soldering joint testing on each single RTS piece.

> With our actual set up we are ready for high volume projects.
Technical Assistance:

> Automotive customers usually need huge quantities and require assistance with integration into a custom PCB is necessary. Please involve our engineering in the early stages of any bigger project!

> For further questions please contact the responsible product manager.