1-kV Voltage Sensor Measures V_{DS} Of SiC And GaN Transistors

Tell-i Technologies' VON1k5Vm sensor measures the voltage (V_{DS}) across high-voltage power transistors with high resolution during the transistors' on-state. Once on-state occurs, the V-ON sensor provides V_{DS} measurements within the fast rise/fall times of 50 to 200 ns. The VON1k5Vm can block up to 1 kV during the off-state. Little post processing and calibrations are required thanks to proprietary internal compensation circuitry.

On-state voltage and its derivatives can be used for health monitoring and prognostics of power converters. Incorporating the information from this sensor with current measurements gives an insight on how the resistance of power transistors changes over the lifetime of a power converter (see the figure). Resistance of power devices is a subtle aging precursor, especially for majority carrier devices, i.e. MOSFETs.

The ultrafast response of less than 200 ns makes it well suited for measurement of wide-bandgap power semiconductors such as GaN and SiC transistors. The VON1k5Vm sensor is suitable for in-situ instrumentation to monitor and predict the performance of power electronics devices and systems at the level of the power semiconductor device.

Engineering samples are on sale on the Tell-i website and from Digikey. For more information, see the website.

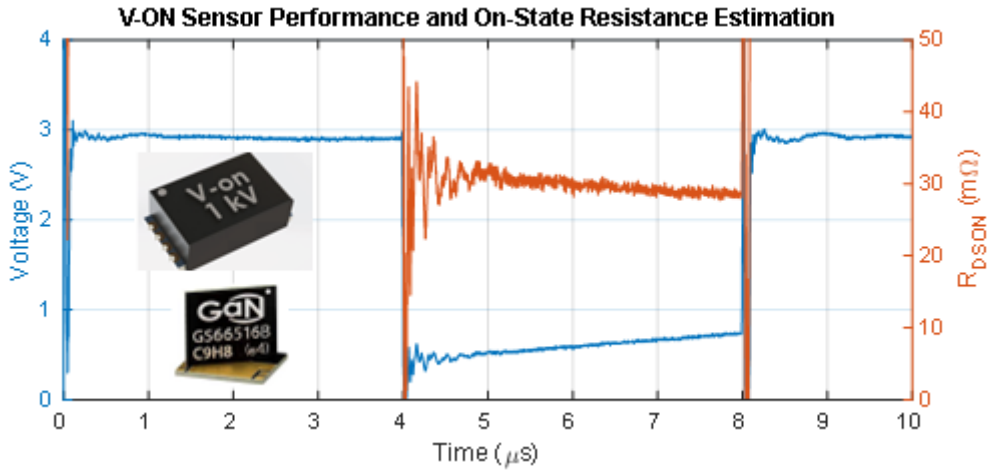

Figure. Tell-i Technologies' contactless sensing enables health monitoring and prognostics of high-frequency power converters using GaN and SiC power switches.