

650 V GaN in Electric Scooter Battery Charging



High-voltage GaN has been discussed as a high quality, high reliability alternative to Silicon in various battery electric vehicle (BEV) systems. These in-vehicle applications include AC to DC PFC on-board chargers; DC to AC auxiliary power inverters; and high-voltage DC to DC converters bucking voltage down to drive typical operating systems such as HVAC, power steering, and suspension. Today, disruptive e-scooter manufacturer Gogoro demonstrates how GaN's benefits also extend to the BEV infrastructure.

Transphorm's Gen III TH65H050WS FETs are deployed in Gogoro's expanding network of smart energy battery swapping stations: GoStations®. The stations' power systems use a digitally controlled Bridgeless Totem-pole PFC designed to optimize the GaN devices' typical performance. The result is seamless charging and discharging of Gogoro's automotive-grade Li-ion batteries with increased power density along with additional Transphorm GaN-driven benefits.

Electric Scooter Chargers



gogoro

Transphorm GaN benefits:

- 4% AC to DC efficiency increase; yielding greater than 99%
- Increased thermal performance
- Lower overall system cost