Eutectic Die Attach for High Power GaN Devices

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Developed for high performance/high power GaN devices installed into StratEdge LL-series packages

- Die mounted in StratEdge packages with Copper-Molybdenum-Copper (CMC) laminate bases
  - Developed specifically for GaN devices
- Assembly technique developed for optimum performance
  - Automated, highly repeatable attachment of GaN devices using AuSn eutectic solder preforms

StratEdge LL-series package:

- Copper-Molybdenum-Copper (CMC) laminate base
- Thermally conductive copper layer directly beneath the device
- Electrolytic Au over Ni plating in die attach area
- Post-fired ceramic brazed to CMC base
- Well-matched CTE for robust construction
- Flat die attach area required

Revolutionary automated AuSn die attach developed for GaN:

- Pulse heat and steady state stages with mechanical agitation
- Precision collets for scrubbing
- 5um placement accuracy

Benefits for high performance/high power GaN devices:

- Better than 96% void free
- AuSn Die Attach < 6um thick bond line thickness
- Reported 20 deg C drop in junction temperature verses standard assembly methods using ceramic packages of alternative construction
  - Improved reliability
  - Longer life