

CCPAK Power GaN FETs

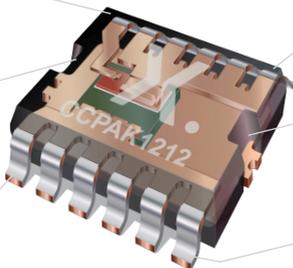
Power and efficiency in SMD copper-clip packages

As the innovators of copper-clip package technology, Nexperia brings almost 20 years experience of producing high-quality, high-robustness SMD packaging to its GaN FET portfolio. Adopting proven technology, CCPAK gives industry-leading performance in a truly innovative package. Wire-bond free for optimized thermal and electrical performance, and simplified design of cascode configuration to eliminate the need for complicated drivers and controls.

› Compact footprint of 12 x 12 mm and low package height of 2.5 mm

› Wire-bond free for low inductances

› Flexible leads for improved reliability



› < 0.5 K/W thermal resistance

› Ultra-low package resistance

› Exposed leads allow for easy optical inspection

Key features and benefits

- › Copper-clip
 - 3 times lower inductances than industry-standard packages for lower switching losses and EMI
 - Higher reliability compared to wire-bond solution
- › Thermal performance
 - Low $R_{th(j-mb)}$ typ (<0.5 K/W) for optimal cooling
 - 175 °C T_j max
- › Manufacturability and robustness
 - Flexible leads for temperature cycling reliability
 - Flexible gull winged leads for robust board level reliability
 - Compatible with SMD soldering and AOI
- › Two cooling options
 - Bottom-side cooling (CCPAK1212)
 - Top-side cooling (CCPAK1212i)
- › Plan for Qualifications
 - AEC-Q101
 - MSL1
 - Halogen free

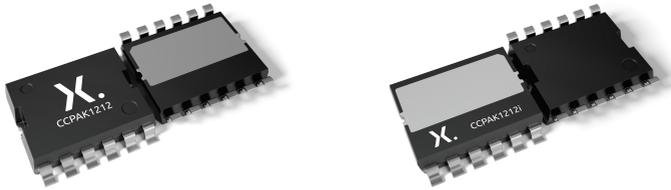
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Key applications

- › Automotive EV
 - On board charging
 - DC-to-DC converters
 - Traction inverters
- › Industrial
 - Telecom and server Titanium grade power supplies
 - Industrial vehicle charging
 - Solar (PV) inverter
 - AC servo drive / Frequency inverters
 - Battery storage/UPS inverters

Top-side and bottom-side cooling

For added flexibility in designs and to further improve heat dissipation, CCPAK is available in both top-side cooling and traditional bottom-side cooling package designs. The first in the portfolio of GaN SMD packages, the CCPAK1212 and CCPAK1212i have a compact footprint of only 12 x 12 mm and a low package height of 2.5 mm.



650 V Product range

Package	Type name	Grade	$R_{DS(on)}$ (Typ) (m Ω)	I_D (Max) (A)	Q_{OSS} (Typ) (nC)
CCPAK1212	GAN039-650NBB	Industrial	33	60	150
	GAN039-650NBBA	Automotive AEC-Q101			
CCPAK1212i	GAN039-650NTB	Industrial	33	60	150
	GAN039-650NTBA	Automotive AEC-Q101			

For more information including product datasheets visit: www.nexperia.com/gan-fets

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