

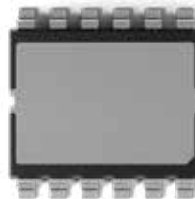
# Nexperia CCPAK MOSFETs Groundbreaking JEDEC-standard copper-clip packaging for next level performance



Nexperia's JEDEC-standard copper-clip CCPAK1212 MOSFET packaging pushes the limits of performance and efficiency. With a compact 12 mm × 12 mm footprint, it offers two cooling options: inverted top-side cooled CCPAK1212i, and bottom-side cooled CCPAK1212. These packages deliver up to 1.5 kW power ratings, low electrical and thermal resistance, high current density, and best-in-class SOA performance, ensuring superior reliability and efficiency for the high-power demands of next-generation industrial applications.

## Features and benefits

- › Top-side & bottom-side cooling options for increased thermal extraction.
- › High power rating (1.5 kW) in a compact 12 x 12mm package.
- › Ultra-low  $R_{DS(on)}$  for low  $I^2R$  conduction losses.
- › Best-in-class linear mode (SOA), in-rush & surge protection.
- › Copper-clip technology gives low electrical & thermal resistance.
- › High performance silicon.
- › Outstanding board level reliability.



**Top-side cooled  
CCPAK1212i**



**Bottom-side cooled  
CCPAK1212**

## Applications

- › High-power BLDC motor control
- › High-power conversion (DC/DC & AC/DC)
- › Battery management & protection
- › Residential / commercial heat pump
- › Mobility & off-road traction
- › Communication infrastructure (Hotswap)
- › Battery management systems
- › Renewable energy



## Portfolio

CCPAK1212 MOSFET devices are available in our established NextPower 80/100 V & ASFETs for Hotswap portfolios.

### NextPower 80/100 V

Product Name	Package	$V_{DS}$ [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS}$ = 10 V (m $\Omega$ )	$T_j$ [max] (°C)	$I_D$ [max] (A)
PSMNR90-80CSF	CCPAK1212i (Top-side cooled)	80	0.9	175	505
PSMN1R1-80CSF			1.16	175	385
PSMN1R0-100CSF		100	1.04	175	460
PSMN1R4-100CSF			1.35	175	355
PSMNR90-80ASF	CCPAK1212 (Bottom-side cooled)	80	0.85	175	505
PSMN1R1-80ASF			1.11	175	385
PSMN1R0-100ASF		100	0.99	175	460
PSMN1R3-100ASF			1.3	175	355

### ASFETs for Hotswap and Soft Start

Product Name	Package	$V_{DS}$ [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS}$ = 10 V (m $\Omega$ )	$T_j$ [max] (°C)	Linear mode SOA 50 V 1 ms (A)
PSMN1R0-80CSE	CCPAK1212i (Top-side cooled)	80	0.95	175	80
PSMN1R2-80CSE			1.23	175	48
PSMN1R1-100CSE		100	1.09	175	80
PSMN1R4-100CSE			1.42	175	48
PSMNR90-80ASE	CCPAK1212 (Bottom-side cooled)	80	0.9	175	85
PSMN1R2-80ASE			1.18	175	48
PSMN1R0-100ASE		100	1.04	175	85
PSMN1R4-100ASE			1.36	175	48



For more details, including product datasheets, application and design support, parametric data, videos, the latest news, and blogs, visit:  
[nexperia.com/ccpak-mosfets](https://nexperia.com/ccpak-mosfets)

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