

CCSPG0420N

**N-CH GALLIUM NITRIDE
FIELD EFFECT TRANSISTOR**

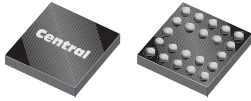


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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CCSPG0420N is an N-channel gallium nitride field effect transistor designed for use in power modules and fast-charging power circuit designs.

MARKING: CSP 0420



Top View Bottom View

CSP2X2 CASE

MAXIMUM RATINGS: ($T_J=25^{\circ}\text{C}$)

Drain-Source Voltage
Gate-Source Voltage
Continuous Drain Current
Pulsed Drain Current ($t_p=300\mu\text{s}$)
Operating and Storage Junction Temperature

SYMBOL		UNITS
V_{DS}	40	V
V_{GS}	6.0	V
I_D	20	A
I_{DM}	100	A
T_J, T_{stg}	-40 to +125	$^{\circ}\text{C}$

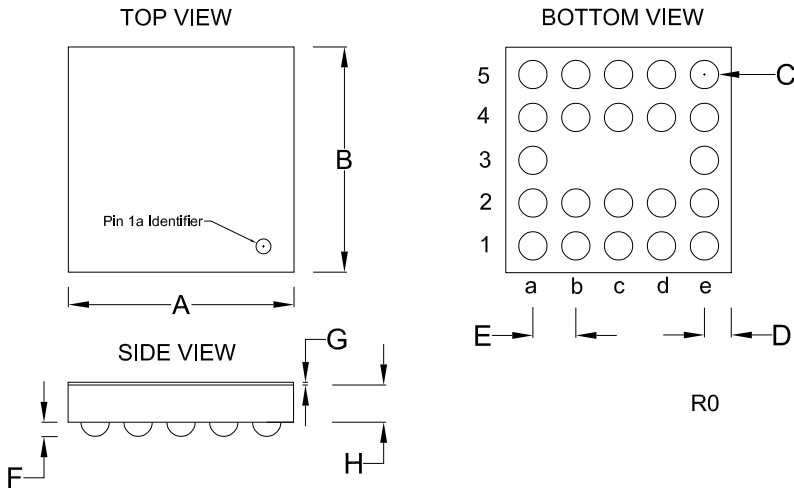
ELECTRICAL CHARACTERISTICS: ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSR}	$V_{GS}=5.0\text{V}, V_{DS}=0$	30			μA
I_{GSSR}	$V_{GS}=6.0\text{V}, V_{DS}=0$	40			μA
I_{DSS}	$V_{DS}=40\text{V}, V_{GS}=0$			20	μA
BV_{DSS}	$V_{GS}=0, I_D=500\mu\text{A}$	40			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=1.0\text{mA}$	0.8		2.4	V
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=10\text{A}$		4.0	4.8	$\text{m}\Omega$
C_{iss}	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		886.5		pF
C_{oss}	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		381.2		pF
C_{rss}	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		226.4		pF
Q_g	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=10\text{A}$		15.8		nC
Q_{gd}	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=10\text{A}$		8.6		nC
Q_{gs}	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=10\text{A}$		1.9		nC

CCSPG0420N
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CSP2X2 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.081	0.084	2.07	2.13
B	0.081	0.084	2.07	2.13
C	ø 0.01		ø 0.27	
D	0.010		0.250	
E	0.016		0.400	
F	0.0065	0.0089	0.165	0.225
G	0.0009	0.0011	0.022	0.028
H	0.0130	0.0141	0.330	0.358

CSP2X2 (REV: R0)

LEAD CODE:

- 1a-1e) Drain
- 2a-2e) Source
- 3a) NC
- 3e) Gate
- 4a-4e) Drain
- 5a-5e) Source

MARKING:
CSP 0420

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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