

CCSPG0420N

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

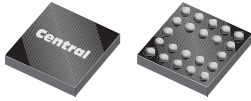


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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CCSPG0420N is an N-channel gallium nitride field effect transistor used in many power modules and devices as well as for RF power circuit designs.

MARKING: CSP 0420



Top View Bottom View

CSP2X2 CASE

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

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 $^\circ\text{C}$

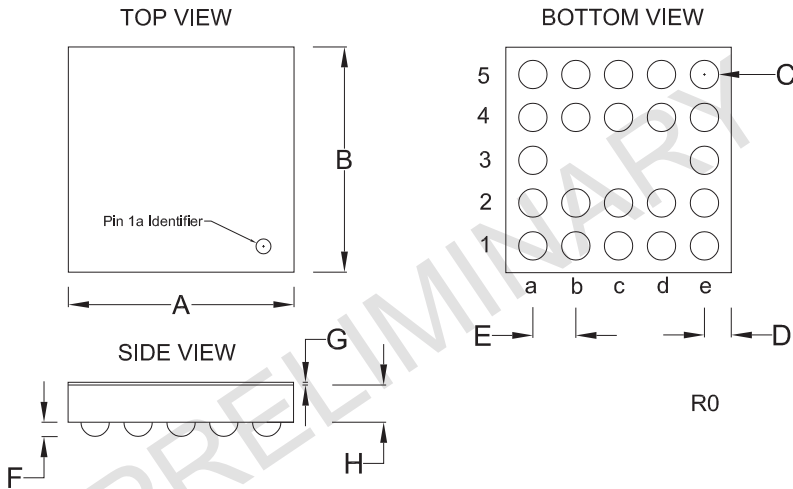
ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}	$V_{GS}=5.0\text{V}, V_{DS}=0$		0.5	3.0	μA
I_{GSSF}	$V_{GS}=6.0\text{V}, V_{DS}=0$		5.0	30	μA
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

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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