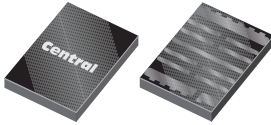


CCSPG0450N

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



www.centrasemi.com



Top View Bottom View

CSP5X4 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CCSPG0450N is an N-channel gallium nitride field effect transistor designed for use in DC-DC conversion modules and fast-charging supplies.

MARKING: CSP 0450

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

Drain-Source Voltage
Gate-Source Voltage
Continuous Drain Current
Pulsed Drain Current ($t_p=100\mu\text{s}$)
Operating and Storage Junction Temperature

SYMBOL

V_{DS} 40
 V_{GS} -4.0 to +6.0
 I_D 50
 I_{DM} 200
 T_J, T_{stg} -40 to +150

UNITS

V
V
A
A
 $^\circ\text{C}$

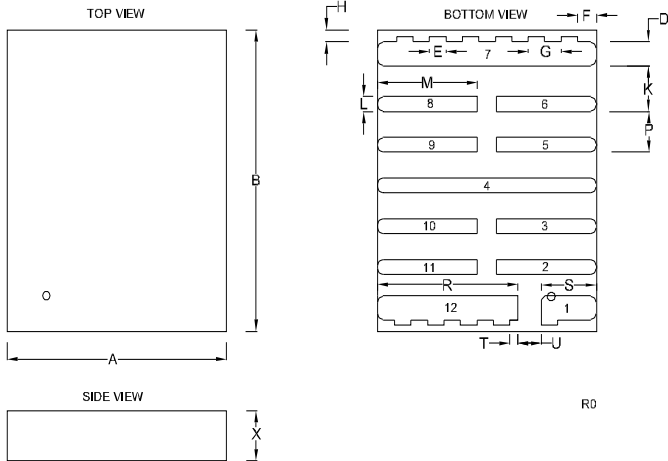
ELECTRICAL CHARACTERISTICS: ($T_J=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}	$V_{GS}=5.0\text{V}, V_{DS}=0$		0.04	800	μA
I_{GSSR}	$V_{GS}=4.0\text{V}, V_{DS}=0$		0.04	400	μA
I_{DSS}	$V_{DS}=32\text{V}, V_{GS}=0$			900	μA
BV_{DSS}	$V_{GS}=0, I_D=1.1\text{mA}$	40			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=25\text{mA}$	0.7	1.1	2.3	V
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=15\text{A}$		1.2	1.5	$\text{m}\Omega$
V_{FSD}	$V_{GS}=0, I_S=0.5\text{A}$		1.25		V
C_{iss}	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		3500		pF
C_{oss}	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		1600		pF
C_{rss}	$V_{DS}=20\text{V}, V_{GS}=0, f=1\text{MHz}$		100		pF
$C_{oss(er)}$	$V_{DS}=0$ to 20V, $V_{GS}=0$		2500		pF
$C_{oss(tr)}$	$V_{DS}=0$ to 20V, $V_{GS}=0$		2900		pF
Q_g	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=15\text{A}$		28		nC
Q_{gd}	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=15\text{A}$		4.6		nC
Q_{gs}	$V_{DS}=20\text{V}, V_{GS}=0$ to 5V, $I_D=15\text{A}$		6.2		nC

CCSPG0450N
N-CH GALLIUM NITRIDE
FIELD EFFECT TRANSISTOR



CSP5X4 CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.154	0.161	3.90	4.10
B	0.193	0.201	4.90	5.10
D	0.014	0.018	0.35	0.45
E	0.008	0.012	0.20	0.30
F	0.015		0.375	
G	0.024		0.600	
H	0.008		0.200	
K	0.030		0.75	
L	0.008	0.012	0.20	0.30
M	0.068	0.076	1.73	1.93
P	0.027		0.675	
R	0.098	0.106	2.48	2.68
S	0.035	0.043	0.90	1.10
T	0.006		0.152	
U	0.015	0.019	0.38	0.48
X	0.026	0.033	0.65	0.85

LEAD CODE:

- 1) Gate
- 2) Drain
- 3) Source
- 4) Drain
- 5) Source
- 6) Drain
- 7) Source
- 8) Drain
- 9) Source
- 10) Source
- 11) Drain
- 12) Source

MARKING:
CSP 0450

CSP5X4 (REV: R0)

R1 (10-October 2023)

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).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centrasemi.com

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms