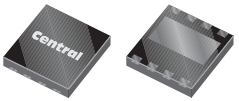
CDF56G7032N

SURFACE MOUNT GaN
N-CHANNEL
POWER FET
18 AMP, 700 VOLT



Top View Bottom View

DFN5X6A CASE

Central Semiconductor

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CDF56G7032N is a 700 Volt N-Channel GaN FET designed for high voltage,soft switching applications. This GaN FET combines high voltage capability with low $r_{DS(ON)}$ and low gate charge for optimal efficiency.

MARKING: C7032 L/C D/C

APPLICATIONS:

- Switch-mode power supplies
- High power chargers
- Electric vehicle inverters

FEATURES:

- High voltage capability
- Low gate charge & $r_{DS(ON)}$
- Fast switching

MAXIMUM RATINGS: (T_J=25°C unless otherwise noted)

	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	700	V
Gate-Source Voltage	V_{GS}	-6.0 to +7.0	V
Continuous Drain Current (T_C=25°C)	I_D	18	A
Pulsed Drain Current (T_C=25°C)	I_{DM}	32	A
Power Dissipation (T_C=25°C)	P_D	113	W
Power Dissipation (T_A=25°C)	P_D	1.1	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +155	°C

ELECTRICAL CHARACTERISTICS: (T_J=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}	V_{GS}=6.0V, V_{DS}=0		70		µA
I_{GSSR}	V_{GS}=1.0V, V_{DS}=0		70		µA
I_{DSS}	V_{DS}=700V, V_{DS}=0		0.6	25	µA
BV_{DSS}	V_{GS}=0, I_D=40µA	700			V
$V_{gs(th)}$	V_{GS}=V_{DS}, I_D=17.2mA	1.2	1.7	2.5	V
V_{sd}	V_{GS}=0, I_S=5.0A		2.4		V
$r_{DS(ON)}$	V_{GS}=6.0V, I_D=5.0A		106	140	mΩ
R_{G1}	f=5MHz; open drain		5.0		Ω
R_{G2}	f=5MHz; open drain		6.0		Ω
C_{iss}	V_{DS}=400V, V_{GS}=0, f=100kHz		125		pF
C_{oss}	V_{DS}=400V, V_{GS}=0, f=100kHz		41		pF
C_{rss}	V_{DS}=400V, V_{GS}=0, f=100kHz		0.4		pF
$C_{o(er)}$	V_{DS}=0 to 400V, V_{GS}=0		59		pF
$C_{o(tr)}$	V_{DS}=0 to 400V, V_{GS}=0		82		pF
Q_{oss}	V_{GS}=0V, V_{DS}=0 to 400V		33		nC
Q_g	V_{GS}=0V to 6V, V_{DS}=400V, I_D=5A		3.5		nC
Q_{gs}	V_{GS}=0V to 6V, V_{DS}=400V, I_D=5A		0.3		nC

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N-CHANNEL
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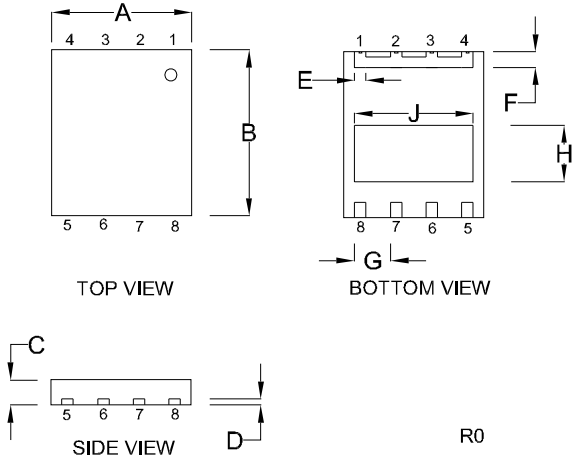
ELECTRICAL CHARACTERISTICS - Continued: (T_J=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Q_{gd}	V_{GS}=0V to 6V, V_{DS}=400V, I_D=5A		1.2		nC
$t_{d(on)}$	V_{DS}=400V, V_{GS}=6.0V, $R_{G(OFF)}$=2Ω		3		ns
	$R_{G(on)}$=10Ω, L=318μH, I_D=10A				
$t_{d(off)}$	V_{DS}=400V, V_{GS}=6.0V, $R_{G(OFF)}$=2Ω		4		ns
	$R_{G(on)}$=10Ω, L=318μH, I_D=10A				
t_r	V_{DS}=400V, V_{GS}=6.0V, $R_{G(OFF)}$=2Ω		5		ns
	$R_{G(on)}$=10Ω, L=318μH, I_D=10A				
t_f	V_{DS}=400V, V_{GS}=6.0V, $R_{G(OFF)}$=2Ω		6		ns
	$R_{G(on)}$=10Ω, L=318μH, I_D=10A				

DFN5X6A CASE - MECHANICAL OUTLINE



LEAD CODE:
1) Drain 5) Source
2) Drain 6) Source
3) Drain 7) Kelvin Source
4) Drain 8) Gate

Pins 5, 6, 7 are common to the pad

MARKING: C7032 5X6 L/C D/C

R0

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.197		5.00	
B	0.236		6.00	
C	0.031	0.039	0.80	1.00
D	0.008		0.20	
E	0.012	0.020	0.30	0.50
F	0.018	0.030	0.45	0.75
G	0.050		1.27	
H	0.077	0.085	1.95	2.15
J	0.164	0.175	4.16	4.45

DFN5X6A (REV: R0)

R1 (9-May 2024)

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

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