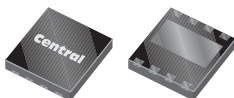


CDF56G7032N

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



Top View Bottom View

DFN5X6A CASE



www.centrasemi.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: ($T_J=25^{\circ}\text{C}$ 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 ($T_C=25^{\circ}\text{C}$)	I_D	18	A
Pulsed Drain Current ($T_C=25^{\circ}\text{C}$)	I_{DM}	32	A
Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_D	113	W
Power Dissipation ($T_A=25^{\circ}\text{C}$)	P_D	1.1	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +155	$^{\circ}\text{C}$

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

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

R1 (9-May 2024)

CDF56G7032N

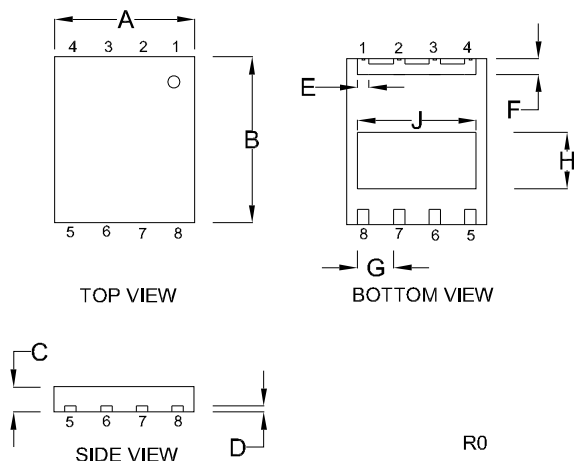
**SURFACE MOUNT GaN
N-CHANNEL
POWER FET
18 AMP, 700 VOLT**



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

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

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

DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	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).

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