# CDM2205-800FP

SILICON N-CHANNEL POWER MOSFET 5.0 AMP, 800 VOLT



#### **APPLICATIONS:**

- Power Factor Correction
- Alternative energy inverters
- Solid State Lighting



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## **DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CDM2205-800FP is an 800 volt N-Channel MOSFET designed for high voltage, fast switching applications such as Power Factor Correction (PFC), lighting and power inverters. This MOSFET combines high voltage capability with low  $r_{DS(ON)}$ , low threshold voltage, and low gate charge for optimal efficiency.

## MARKING CODE: CDM05-800FP

## FEATURES:

- High voltage capability (V<sub>DS</sub>=800V)
- Low gate charge (Q<sub>g(tot)</sub>=17.4nC TYP)
- Low r<sub>DS(ON)</sub> (2.2Ω TYP)

**MAXIMUM RATINGS:** (T<sub>C</sub>=25°C unless otherwise noted)

WAANVOW RATINGS. (TC-25 C UNIESS OTHERWISE	e noteu)		
	SYMBOL		UNITS
Drain-Source Voltage	V <sub>DS</sub>	800	V
Gate-Source Voltage	V <sub>GS</sub>	30	V
Continuous Drain Current (Steady State)	۱ <sub>D</sub>	5.0	А
Maximum Pulsed Drain Current, tp=10µs	IDM	20	А
Continuous Source Current (Body Diode)	۱ <sub>S</sub>	5.0	А
Maximum Pulsed Source Current (Body Diode)	ISM	20	А
Single Pulse Avalanche Energy (Note 1)	EAS	323	mJ
Power Dissipation	PD	48	W
Operating and Storage Junction Temperature	т <sub>Ј</sub> , т <sub>stg</sub>	-55 to +150	°C
Thermal Resistance	ΘJC	2.6	°C/W
Thermal Resistance Note 1: L=30mH, $I_{AS}$ =4.5A, $V_{DD}$ =60V, $R_{C}$ =25 $\Omega$ , Initial T I=25°C	$\Theta_{JA}$	120	°C/W

ELECTRICAL CHARACTERISTICS: (T <sub>C</sub> =25°C unless otherwise noted)					
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
IGSSF, IGSSR	V <sub>GS</sub> =30V, V <sub>DS</sub> =0			100	nA
IDSS	V <sub>DS</sub> =800V, V <sub>GS</sub> =0			1.0	μA
BVDSS	V <sub>GS</sub> =0, I <sub>D</sub> =250µA	800			V
V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250µA	2.0	3.0	4.0	V
V <sub>SD</sub>	V <sub>GS</sub> =0, I <sub>S</sub> =5.0A		0.9	1.4	V
<sup>r</sup> DS(ON)	V <sub>GS</sub> =10V, I <sub>D</sub> =2.5A		2.2	2.7	Ω
C <sub>rss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1.0MHz		2.8		pF
C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1.0MHz		705		pF
C <sub>oss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1.0MHz		72		pF

R3 (19-August 2015)

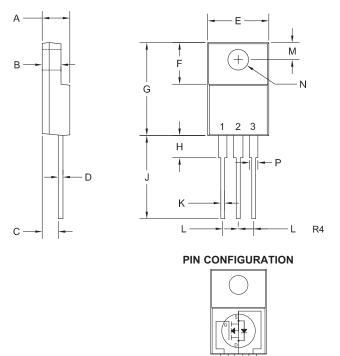


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ELECTRICAL CHARACTERISTICS - Continued: (T <sub>C</sub> =25°C unless otherwise noted)				
SYMBOL	TEST CONDITIONS	TYP	UNITS	
Q <sub>g(tot)</sub>	$V_{DS}$ =640V, $V_{GS}$ =10V, $I_{D}$ =5.0A (Note 2)	17.4	nC	
Q <sub>gs</sub>	V <sub>DS</sub> =640V, V <sub>GS</sub> =10V, I <sub>D</sub> =5.0A (Note 2)	3.70	nC	
Q <sub>gd</sub>	V <sub>DS</sub> =640V, V <sub>GS</sub> =10V, I <sub>D</sub> =5.0A (Note 2)	7.88	nC	
t <sub>d(on)</sub>	$V_{DD}$ =400V, I <sub>D</sub> =5.0A, R <sub>G</sub> =25 $\Omega$ (Note 2)	13	ns	
tr	$V_{DD}$ =400V, I <sub>D</sub> =5.0A, R <sub>G</sub> =25 $\Omega$ (Note 2)	27	ns	
<sup>t</sup> d(off)	$V_{DD}$ =400V, I <sub>D</sub> =5.0A, R <sub>G</sub> =25 $\Omega$ (Note 2)	44	ns	
t <sub>f</sub> `´	V <sub>DD</sub> =400V, I <sub>D</sub> =5.0A, R <sub>G</sub> =25Ω (Note 2)	30	ns	
t <sub>rr</sub>	V <sub>GS</sub> =0, I <sub>S</sub> =5.0A, di/dt=100A/µs (Note 2)	549	ns	
Q <sub>rr</sub>	V <sub>GS</sub> =0, I <sub>S</sub> =5.0A, di/dt=100A/µs (Note 2)	2.95	μC	
Note 2: Pulse Widt	h $\leq$ 300µs, Duty Cycle $\leq$ 2%			

# **TO-220FP CASE - MECHANICAL OUTLINE**



2 3

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.165	0.202	4.20	5,12
В	0.090	0.130	2.30	3.30
С	0.098	0.122	2.50	3.10
D	-	0.031	-	0.80
E	0.382	0.418	9.70	10.63
F	0.238	0.276	6.06	7.00
G	0.583	0.640	14.80	16.25
Н	-	0.161	-	4.10
J	0.506	0.543	12.85	13.80
K	0.020	0.031	0.50	0.79
L	0.100		2.54	
М	0.120	0.140	3.05	3.55
N (DIA)	0.116	0.134	2.95	3.40
Р	0.039	0.058	1.00	1.47
TO-220FP (REV: R4)				

LEAD CODE:

1) Gate 2) Drain 3) Source

MARKING CODE: CDM05-800FP

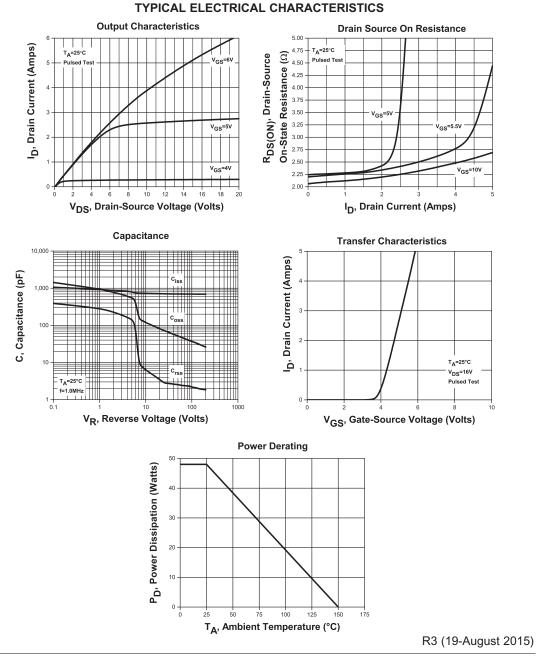
R3 (19-August 2015)

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# **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

#### **DESIGNER SUPPORT/SERVICES**

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

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities

ss your design challenges.

· Custom product packing

- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- · Application and design sample kits

Custom bar coding for shipments

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).
- 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**

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# Product End of Life Notification

PDN ID:	PDN01161
Notification Date:	10/28/20
Last Buy Date:	
Last Shipment Date	Stock Only

# http://www.centralsemi.com

Please be advised that Central Semiconductor must immediately discontinue the product(s) listed in the attached PDN notice. We are unable to accept any further orders for these products **unless** we have available inventory on hand.

You may have purchased one or more of the products listed. Please do not hesitate to contact your local Central Semiconductor sales representative with any questions or needs you may have. Central regrets any inconvenience this may cause.

Sincerely,

Central Semiconductor Corp.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.



# Product End of Life Notification

PDN ID:	PDN01161
Notification Date:	10/28/20
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Summary: The CDM2205-800FP and CDM4-600LR MOSFETs are discontinued and now classified as End of Life (EOL).

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

## \* All Plating types (PBFREE,TIN/LEAD) for each item listed are included in this notice.

Central Part Number	Replacement
CDM2205-800FP SL	N/A, Stock Only
CDM4-600LR BK	N/A, Stock Only
CDM4-600LR TR13	N/A, Stock Only

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to engineering@centralsemi.com.

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