CDM4-600LR

SURFACE MOUNT SILICON N-CHANNEL LR POWER MOSFET 4.0 AMP, 600 VOLT

ULTRAMOS™



DPAK CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CDM4-600LR is a 600 Volt N-Channel MOSFET designed for high voltage, fast switching applications such as Power Factor Correction (PFC), lighting and power inverters. This UltraMOS™ MOSFET combines high voltage capability with ultra low $r_{DS(ON)}$, low threshold voltage, and low gate charge for optimal efficiency.

MARKING: FULL PART NUMBER

APPLICATIONS:

- Power Factor Correction
- Alternative energy inverters
- Solid State Lighting (SSL)

FEATURES:

- High voltage capability (V_{DS}=600V)
- Low gate charge (Q_{gs}=2.78nC TYP)
- Ultra low $r_{DS(ON)}$ (0.77Ω TYP)

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

	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	30	V
Continuous Drain Current (Steady State)	I_D	4.0	A
Maximum Pulsed Drain Current, tp=10μs	I_{DM}	20	A
Continuous Source Current (Body Diode)	I_S	4.0	A
Maximum Pulsed Source Current (Body Diode)	I_{SM}	20	A
Single Pulse Avalanche Energy (Note 1)	E_{AS}	214	mJ
Power Dissipation	P_D	38	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +150	°C
Thermal Resistance	Θ_{JC}	3.29	°C/W
Thermal Resistance	Θ_{JA}	110	°C/W

Note 1: L=79mH, I_{AS}=2.2A, V_{DD}=100V, R_G=25Ω, Initial T_J=25°C

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}, I_{GSSR}	V_{GS}=30V, V_{DS}=0			100	nA
I_{DSS}	V_{DS}=600V, V_{GS}=0		0.065	1.0	μA
BV_{DSS}	V_{GS}=0, I_D=250μA	600			V
$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250μA	2.0	3.25	4.0	V
V_{SD}	V_{GS}=0, I_S=5.0A		0.86	1.4	V
$r_{DS(ON)}$	V_{GS}=10V, I_D=2.5A		0.77	0.88	Ω
C_{rss}	V_{DS}=100V, V_{GS}=0, f=1.0MHz		3.0		pF
C_{iss}	V_{DS}=100V, V_{GS}=0, f=1.0MHz		3.5		pF
C_{oss}	V_{DS}=100V, V_{GS}=0, f=1.0MHz		16.9		pF

R3 (26-May 2020)

CDM4-600LR

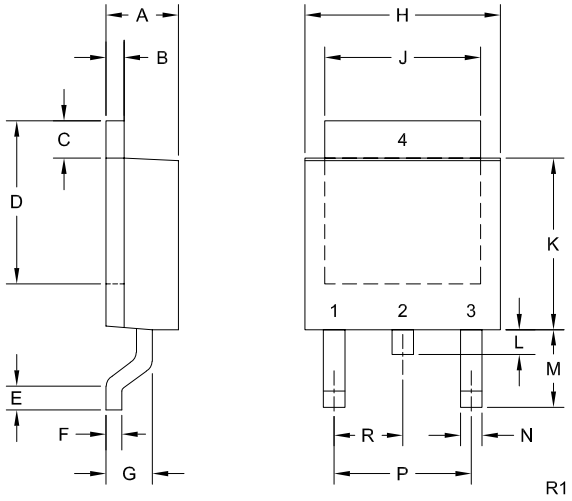
SURFACE MOUNT SILICON
N-CHANNEL
LR POWER MOSFET
4.0 AMP, 600 VOLT

ELECTRICAL CHARACTERISTICS - Continued: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	TYP	UNITS
$Q_{g(tot)}$	V_{DS}=480V, V_{GS}=10V, I_D=5.0A (Note 2)	16.63	nC
Q_{gs}	V_{DS}=480V, V_{GS}=10V, I_D=5.0A (Note 2)	2.78	nC
Q_{gd}	V_{DS}=480V, V_{GS}=10V, I_D=5.0A (Note 2)	9.67	nC
$t_{d(on)}$	V_{DD}=300V, V_{GS}=10V, I_D=5.0A, R_G=25Ω (Note 2)	8.8	ns
t_r	V_{DD}=300V, V_{GS}=10V, I_D=5.0A, R_G=25Ω (Note 2)	30.5	ns
$t_{d(off)}$	V_{DD}=300V, V_{GS}=10V, I_D=5.0A, R_G=25Ω (Note 2)	51.5	ns
t_f	V_{DD}=300V, V_{GS}=10V, I_D=5.0A, R_G=25Ω (Note 2)	26.9	ns
t_{rr}	V_{GS}=0, I_S=5.0A, di/dt=100A/μs (Note 2)	330	ns
Q_{rr}	V_{GS}=0, I_S=5.0A, di/dt=100A/μs (Note 2)	2.14	μC

Note 2: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%

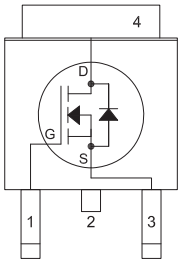
DPAK CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.083	0.108	2.10	2.75
B	0.016	0.032	0.40	0.81
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.016	0.024	0.40	0.60
G	0.051	0.071	1.30	1.80
H	0.248	0.268	6.30	6.81
J	0.197	0.217	5.00	5.50
K	0.209	0.245	5.30	6.22
L	0.025	0.040	0.64	1.02
M	0.090	0.115	2.30	2.91
N	0.012	0.045	0.30	1.14
P	0.180		4.60	
R	0.090		2.30	

DPAK (REV: R1)

PIN CONFIGURATION



LEAD CODE:
1) Gate
2) Drain
3) Source
4) Drain
Pin 2 is common to the tab (4)

MARKING: FULL PART NUMBER

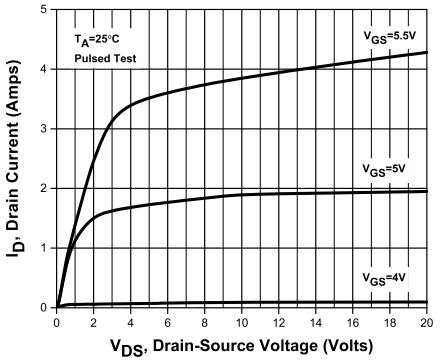
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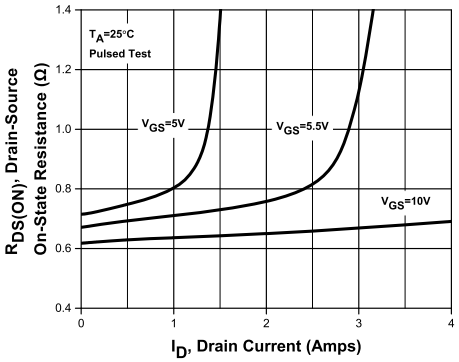
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TYPICAL ELECTRICAL CHARACTERISTICS

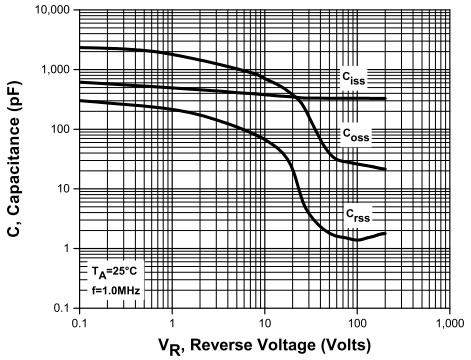
Output Characteristics



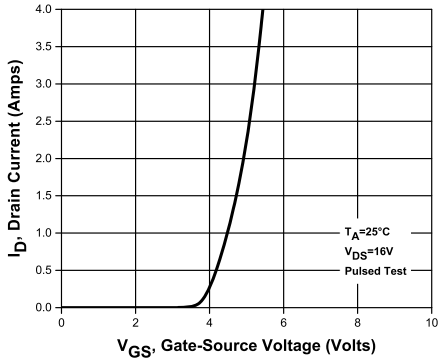
Drain Source On Resistance



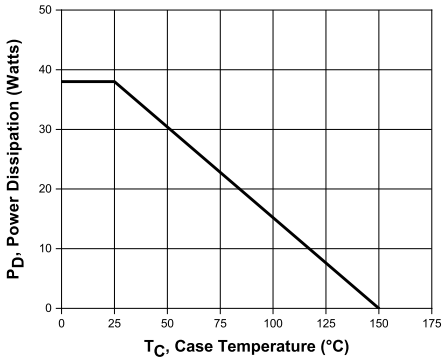
Capacitance



Transfer Characteristics



Power Derating



R3 (26-May 2020)

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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Worldwide Distributors:
www.centralsemi.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.centralsemi.com/terms

http://www.centralsemi.com

Product End of Life Notification

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

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.

http://www.centralsemi.com

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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