

CDMS24783-120

**SILICON CARBIDE
N-CHANNEL MOSFET**



TO-247 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CDMS24783-120 is an N-channel silicon carbide MOSFET designed for high speed switching and fast reverse recovery applications.

**MARKING: CDMS247
83-120**

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

Drain-Source Voltage
Gate-Source Voltage
Continuous Drain Current
Pulsed Drain Current
Operating and Storage Junction Temperature
Power Dissipation

SYMBOL

V_{DS} 1200
 V_{GS} 20
 I_D 18
 I_{DM} 20
 T_J, T_{stg} -55 to +175
 P_D 28

UNITS

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

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_{DSS}	$V_{GS}=0\text{V}, I_D=250\mu\text{A}$	1200			V
I_{DSS}	$V_{DS}=1200\text{V}, V_{GS}=0\text{V}$		4.5	100	nA
I_{GSS}	$V_{GS}=18\text{V}, V_{DS}=0\text{V}$		45	500	pA
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=2.5\text{mA}$	1.0	2.4	4.0	V
$r_{DS(ON)}$	$V_{GS}=18\text{V}, I_D=18\text{A}$		83	150	m Ω
C_{iss}	$V_{DS}=200\text{V}, V_{GS}=0, f=1.0\text{MHz}$		1365		pF
C_{oss}	$V_{DS}=800\text{V}, V_{GS}=0, f=1.0\text{MHz}$		78		pF
C_{rss}	$V_{DS}=800\text{V}, V_{GS}=0, f=1.0\text{MHz}$		11		pF
$t_{d(on)}$	$V_{DS}=1000\text{V}, V_{GS}=-5.0\text{ to }15\text{V}, I_D=10\text{A}$		10		ns
t_r	$V_{DS}=1000\text{V}, V_{GS}=-5.0\text{ to }15\text{V}, I_D=10\text{A}$		35		ns
$t_{d(off)}$	$V_{DS}=1000\text{V}, V_{GS}=-5.0\text{ to }15\text{V}, I_D=10\text{A}$		31		ns
t_f	$V_{DS}=1000\text{V}, V_{GS}=-5.0\text{ to }15\text{V}, I_D=10\text{A}$		52		ns
$Q_{g(tot)}$	$V_{DS}=800\text{V}, V_{GS}=-5.0\text{ to }15\text{V}, I_D=10\text{A}$		55		nC
V_{SD}	$V_{GS}=0\text{V}, I_S=5.0\text{A}$			5.0	V

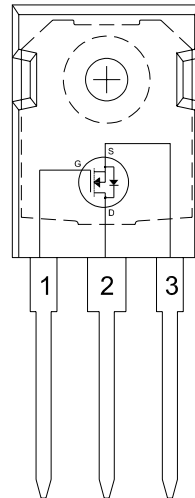
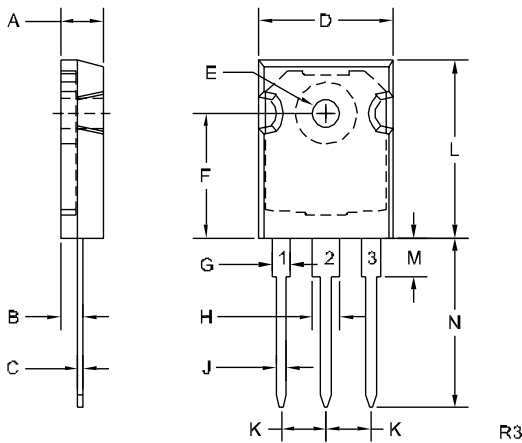
CDMS24783-120

SILICON CARBIDE

N-CHANNEL MOSFET



TO-247 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Gate
- 2) Drain
- 3) Source

MARKING:

CDMS247

83-120

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.184	0.211	4.68	5.36
B	0.087	0.110	2.20	2.80
C	0.019	0.028	0.48	0.70
D	0.606	0.638	15.38	16.20
E (DIA)	0.128	0.144	3.25	3.65
F	0.583	0.607	14.81	15.42
G	0.072	0.097	1.82	2.46
H	0.115	0.127	2.92	3.23
J	0.035	0.060	0.89	1.53
K	0.207	0.223	5.26	5.66
L	0.812	0.881	20.63	22.38
M	0.145	0.177	3.68	4.50
N	0.728	0.846	18.50	21.50

TO-247 (REV: R3)

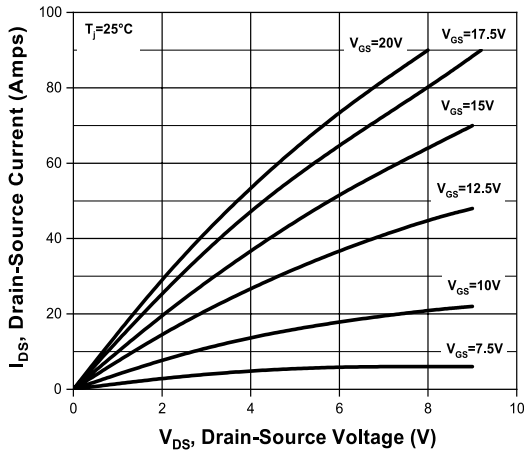
CDMS24783-120

SILICON CARBIDE
N-CHANNEL MOSFET

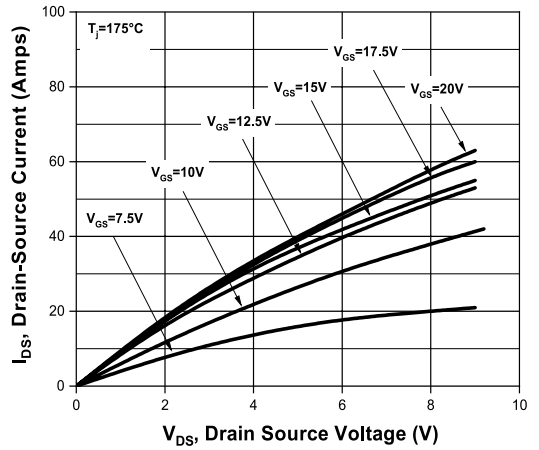


TYPICAL ELECTRICAL CHARACTERISTICS

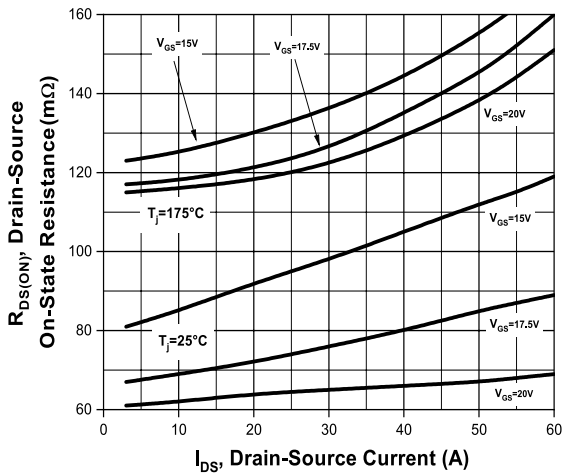
Typical Output Characteristics



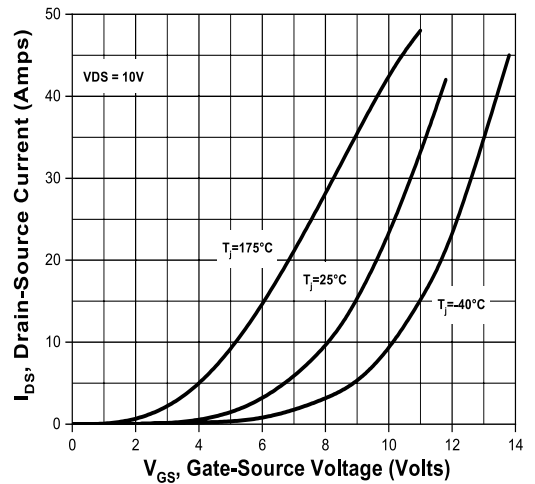
Typical Output Characteristics



Drain Source On Resistance



Transfer Characteristics

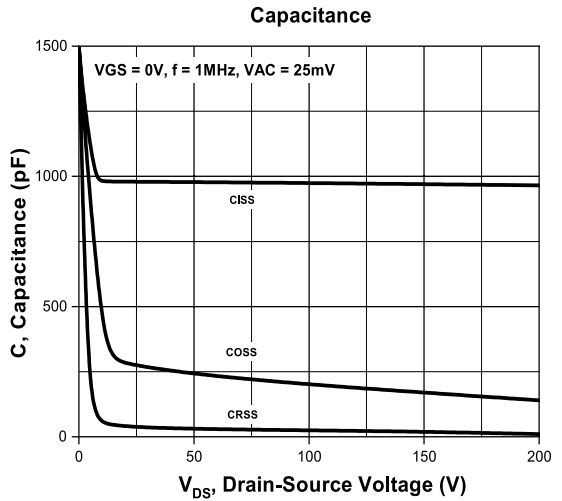
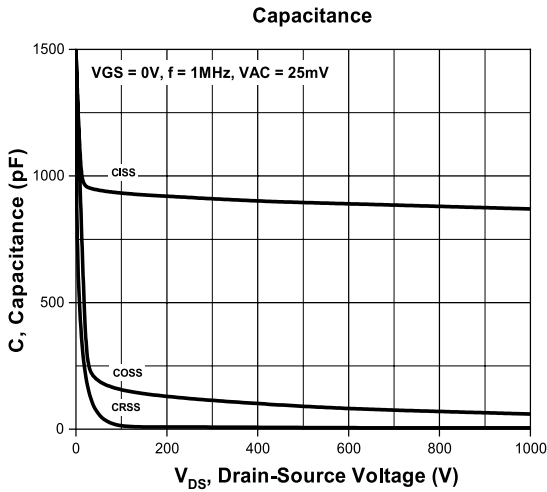
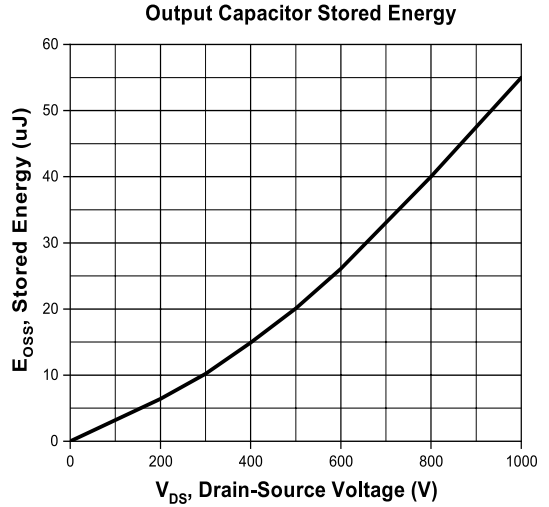
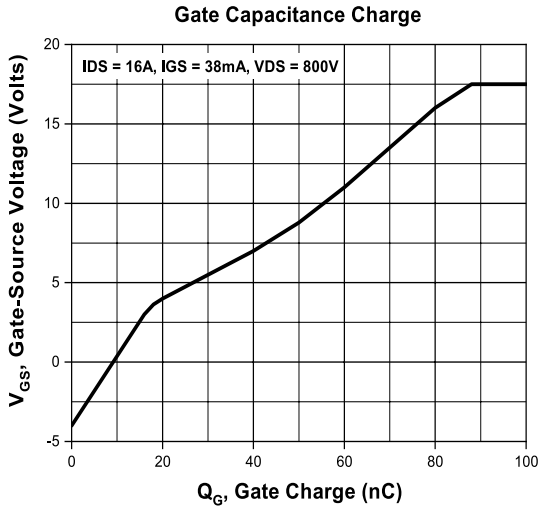


CDMS24783-120

SILICON CARBIDE
N-CHANNEL MOSFET



TYPICAL ELECTRICAL CHARACTERISTICS



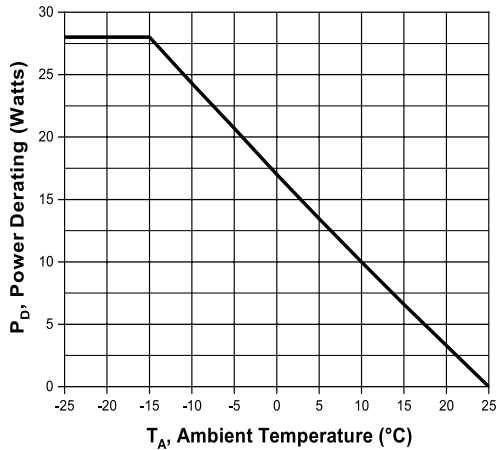
CDMS24783-120

SILICON CARBIDE
N-CHANNEL MOSFET

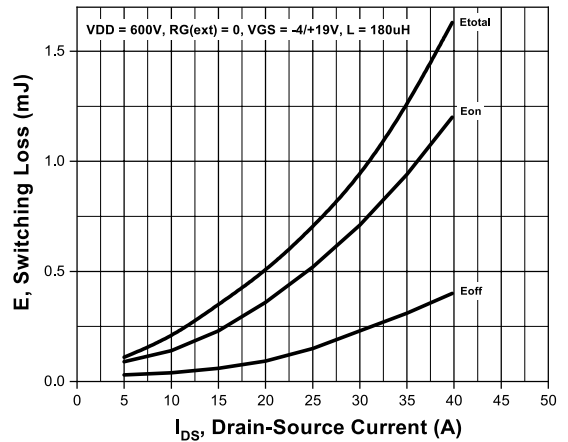


TYPICAL ELECTRICAL CHARACTERISTICS

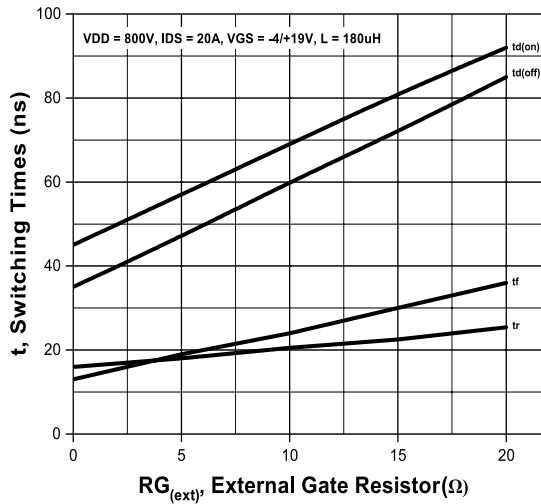
Power Derating



Clamped Inductive Switching Energy



Switching Times



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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Central Semiconductor:](#)

[CDMS24783-120 SL](#)