CDMS24783-120

SILICON CARBIDE
N-CHANNEL MOSFET

TO-247 CASE

www.centralsemi.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°C)	**SYMBOL**		**UNITS**
Drain-Source Voltage	V_{DS}	1200	V
Gate-Source Voltage	V_{GS}	20	V
Continuous Drain Current	I_D	18	A
Pulsed Drain Current	I_{DM}	20	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +175	°C
Power Dissipation	P_D	28	W

ELECTRICAL CHARACTERISTICS: (T_J=25°C)

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

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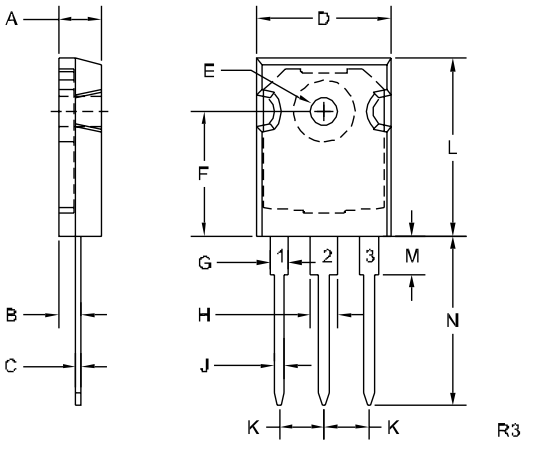
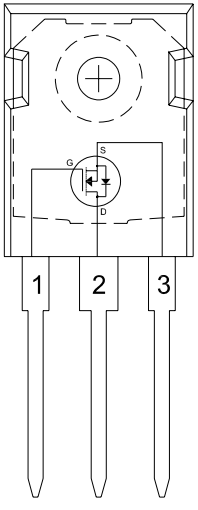
TO-247 CASE - MECHANICAL OUTLINE





LEAD CODE:
1) Gate
2) Drain
3) Source

MARKING:

CDMS247

83-120

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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)

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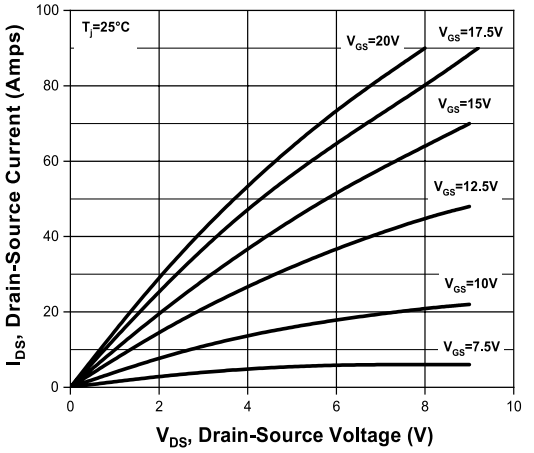
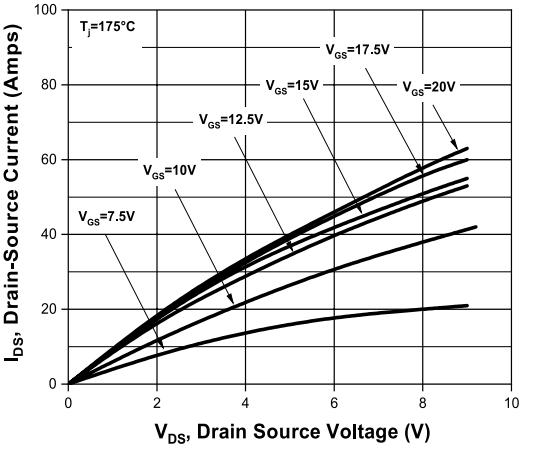
TYPICAL ELECTRICAL CHARACTERISTICS

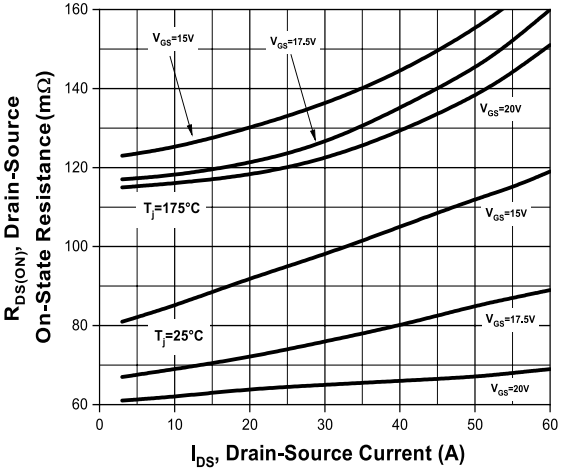
Typical Output Characteristics



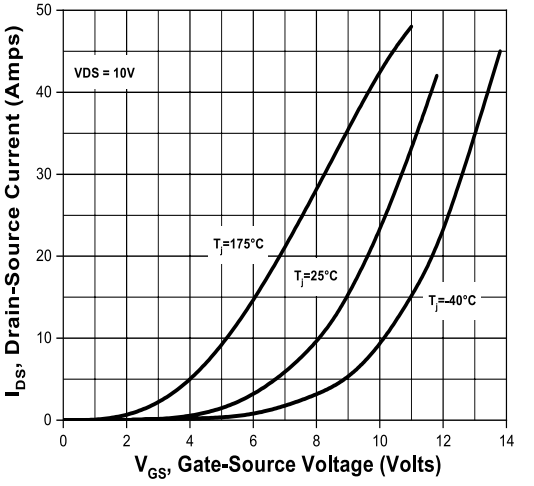
Typical Output Characteristics



Drain Source On Resistance



Transfer Characteristics



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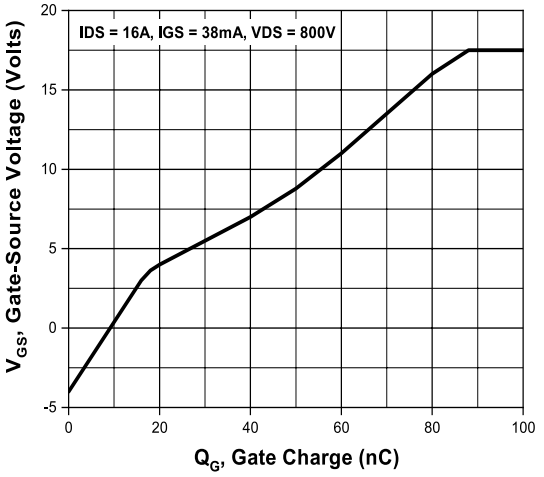
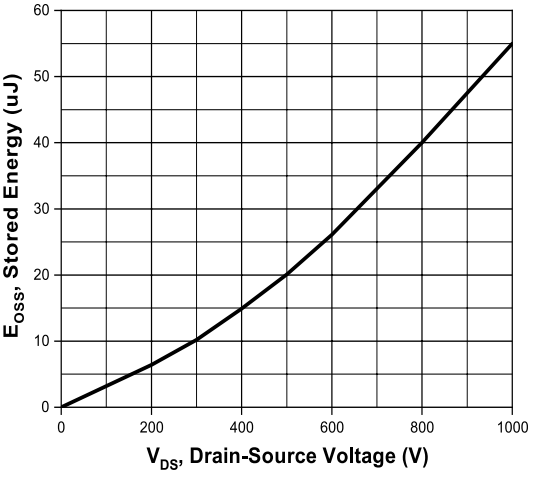
TYPICAL ELECTRICAL CHARACTERISTICS

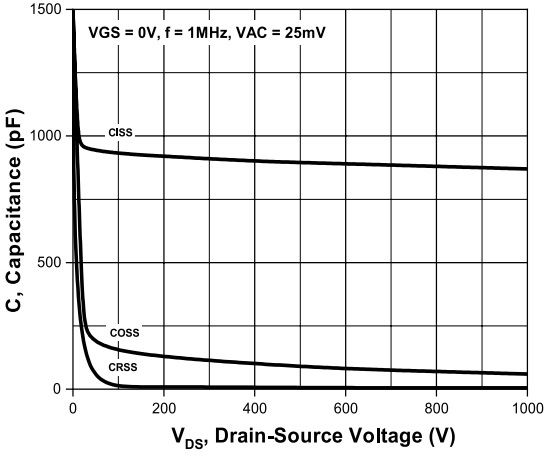
Gate Capacitance Charge



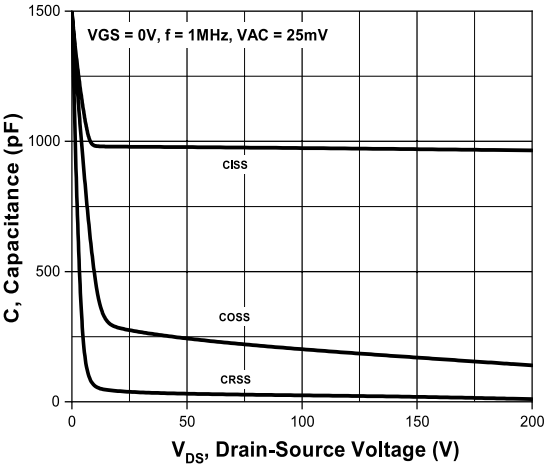
Output Capacitor Stored Energy



Capacitance



Capacitance



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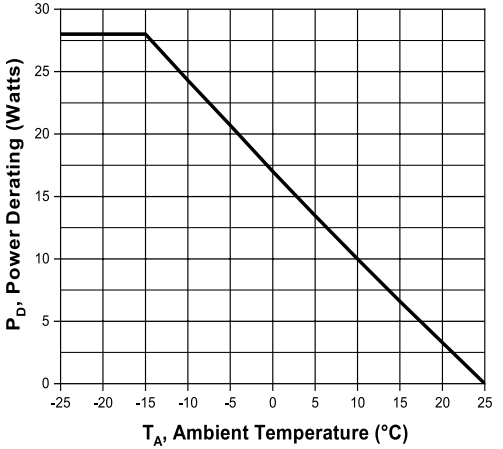
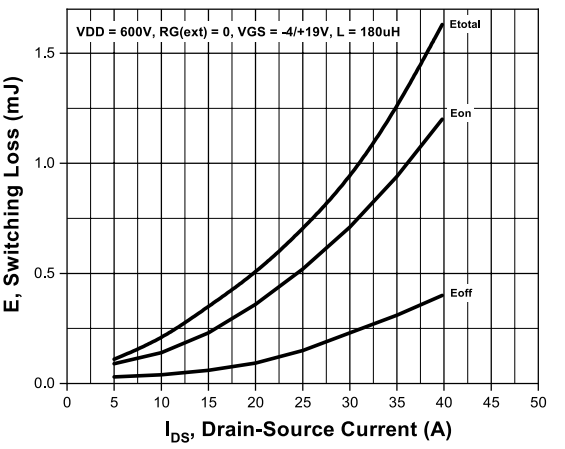
TYPICAL ELECTRICAL CHARACTERISTICS

Power Derating



Clamped Inductive Switching Energy



Switching Times