

General Description

The CMH035N10 uses advanced SGT technology to provide excellent RDS(ON). This device is well suited for high efficiency fast switching applications.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

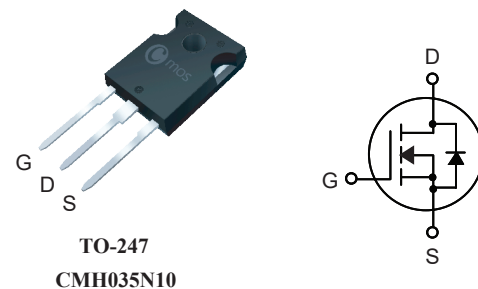
Product Summary

BVDSS	RDS(on) max.	ID
100V	3.5mΩ	200A

Applications

- Motor control and drive
- Power switching application

TO-247 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	100	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	200	A
I _D @T _C =100°C	Continuous Drain Current	140	A
I _{DM}	Pulsed Drain Current	800	A
EAS	Single Pulse Avalanche Energy ¹	3062	mJ
P _D @T _C =25°C	Total Power Dissipation	450	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient(min. footprint)	---	62	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.28	°C/W

Electrical Characteristics($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=50A$	---	3.1	3.5	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2.0	---	4.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=100V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=20A$	---	44	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	2.4	---	Ω
Q_g	Total Gate Charge	$I_D=50A$	---	117	---	nC
Q_{gs}	Gate-Source Charge	$V_{DD}=50V$	---	40	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	37	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=50V$ $V_{GS}=10V$ $R_G=3\Omega$	---	48	---	ns
T_r	Rise Time		---	56	---	
$T_{d(off)}$	Turn-Off Delay Time		---	75	---	
T_f	Fall Time		---	33	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	8600	---	pF
C_{oss}	Output Capacitance		---	2700	---	
C_{rss}	Reverse Transfer Capacitance		---	200	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	200	A
I_{SM}	Pulsed Source Current		---	---	800	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=50A$, $T_J=25^{\circ}\text{C}$	---	0.87	1.4	V
t_{rr}	Reverse Recovery Time	$di/dt=500A/\mu s$	---	60	---	ns
Q_{rr}	Reverse Recovery Charge	$T_J=25^{\circ}\text{C}$, $I_F=20A$	---	560	---	nC

Note :

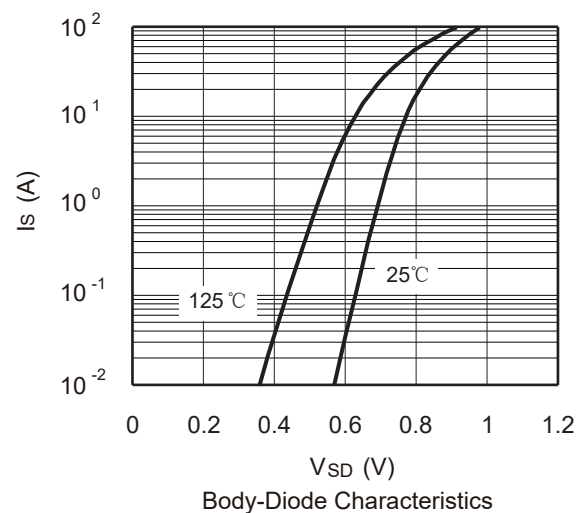
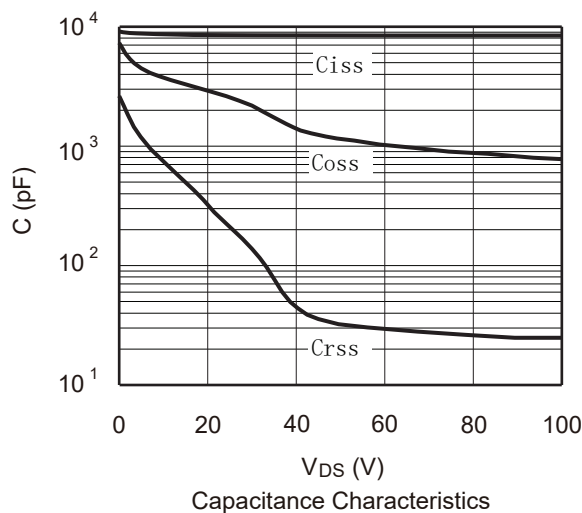
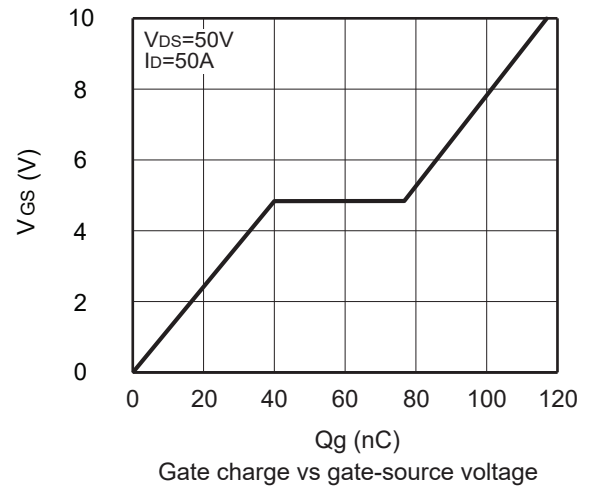
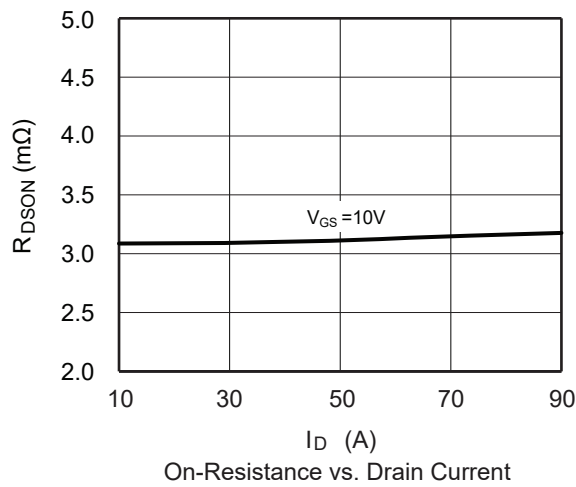
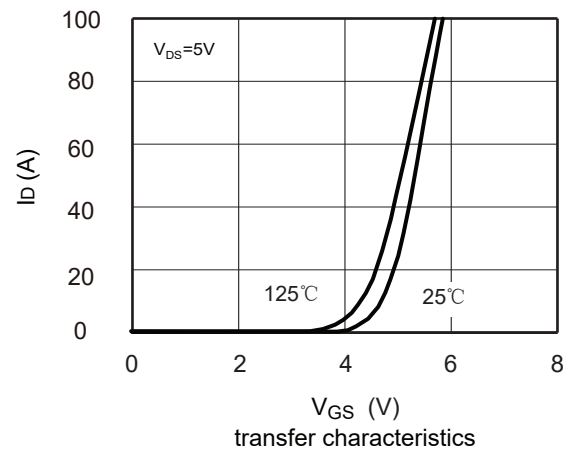
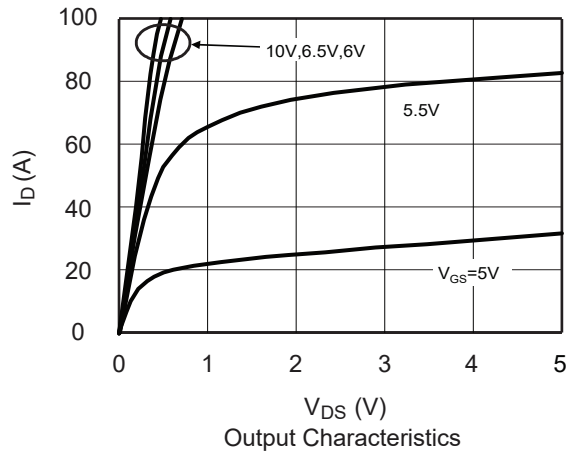
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=5\text{mH}$, $I_{AS}=35A$.

This product has been designed and qualified for the consumer market.

Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

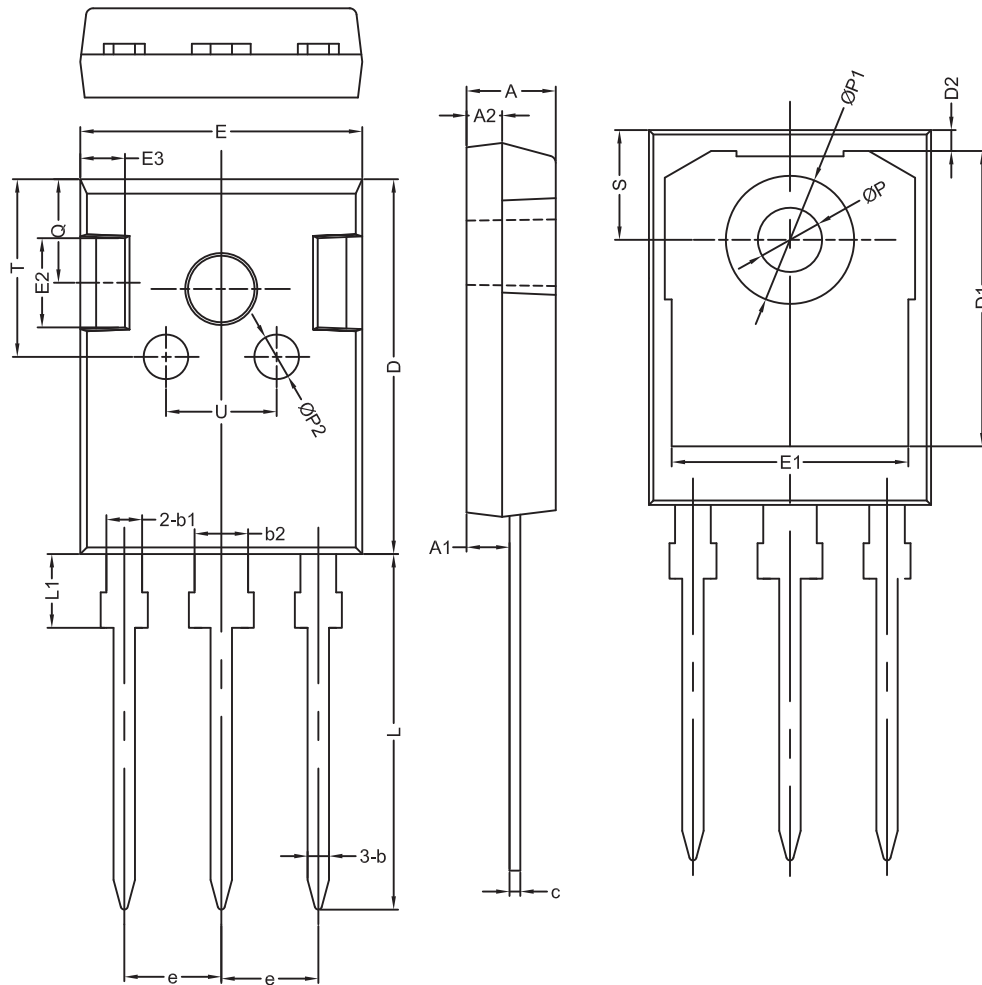
Typical Characteristics



Package Dimension

TO-247

Unit :mm



符号	机械尺寸/mm			符号	机械尺寸/mm		
	最小值	典型值	最大值		最小值	典型值	最大值
A	4.80	5.00	5.20	E2		5.00	
A1	2.21	2.41	2.61	E3		2.50	
A2	1.90	2.00	2.10	e		5.44	
b	1.10	1.20	1.35	L	19.42	19.92	20.42
b1		2.00		L1		4.13	
b2		3.00		P	3.50	3.60	3.70
c	0.55	0.60	0.75	P1		7.19	
D	20.80	21.00	21.20	P2		2.50	
D1		16.55		Q		5.80	
D2		1.20		S	6.05	6.15	6.25
E	15.60	15.80	16.0	T		10.00	
E1		13.30		U		6.20	