

General Description

The CMH044N10 uses advanced SGT technology to provide excellent RDS(ON). This device is suitable for use as a Battery protection or in other Switching application.

Features

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

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	180	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	145	A
I_{DM}	Pulsed Drain Current	720	A
EAS	Single Pulse Avalanche Energy ¹	1600	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	370	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	53	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.34	$^\circ\text{C}/\text{W}$

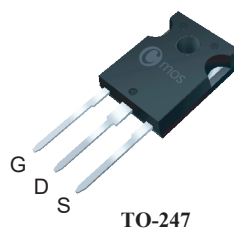
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
100V	4.5m Ω	180A

Applications

- DC-AC converters
- SMPS Power
- UPS (Uninterruptible Power Supply)

TO-247 Pin Configuration



Type	Package	Marking
CMH044N10	TO-247	CMH044N10

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	$V_{GS}=10V$, $I_D=50A$	---	---	4.5	$m\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	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	$V_{DS}=10V$, $I_D=20A$	---	38	---	S
Q_g	Total Gate Charge	$I_D=30A$	---	90	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=80V$	---	30	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	15	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=50V$	---	33	---	ns
T_r	Rise Time	$I_D=30A$	---	35	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=4.7\Omega$	---	60	---	
T_f	Fall Time	$V_{GS}=10V$	---	14	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	6500	---	pF
C_{oss}	Output Capacitance		---	2100	---	
C_{rss}	Reverse Transfer Capacitance		---	60	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	180	A
I_{SM}	Pulsed Source Current		---	---	720	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=50A$, $T_J=25^{\circ}\text{C}$	---	---	1.4	V

Note :

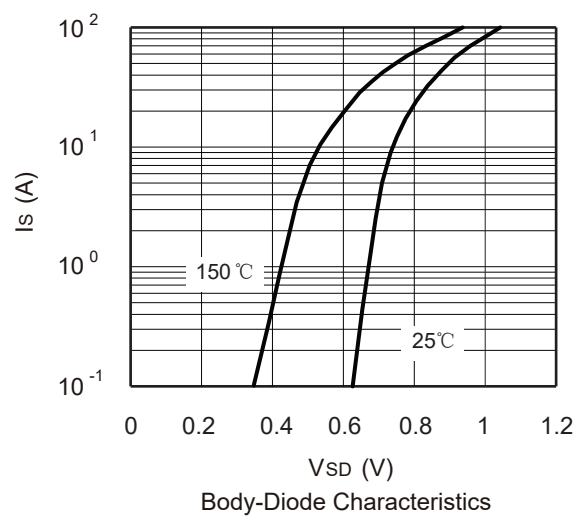
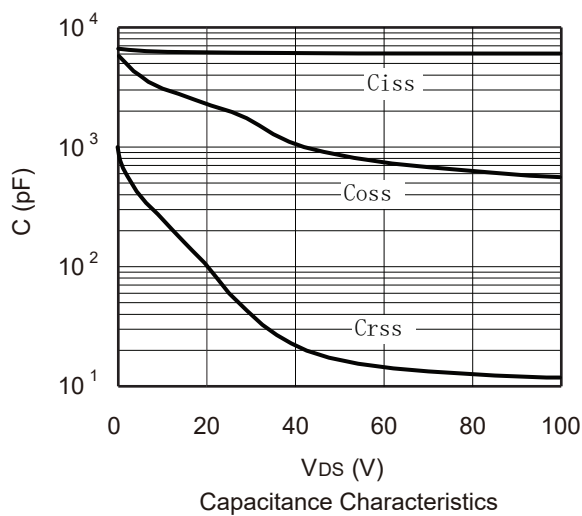
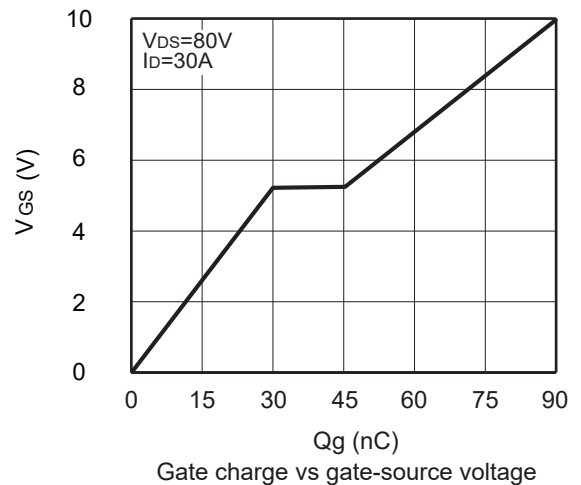
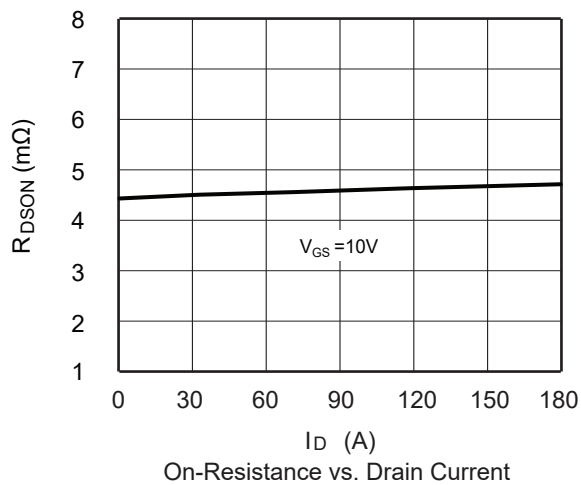
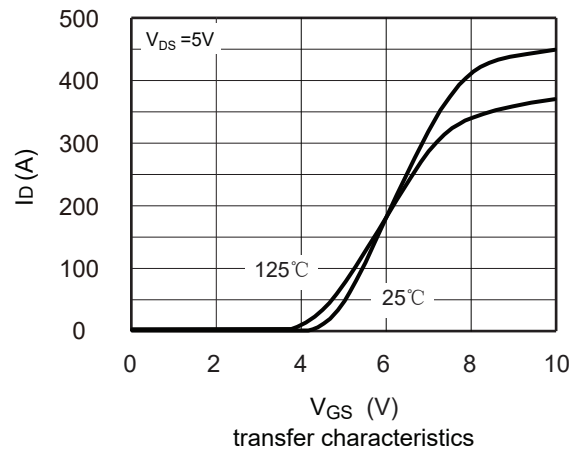
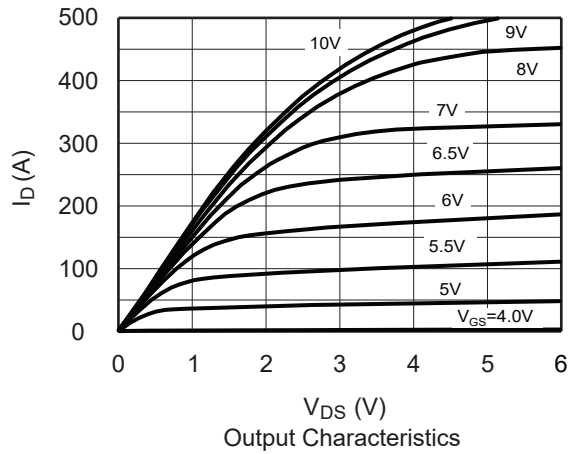
1.The EAS data shows Max. rating .The test condition is $V_{DS}=100V$, $V_{GS}=10V$, $L=1mH$, $I_{AS}=56.6A$.

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.

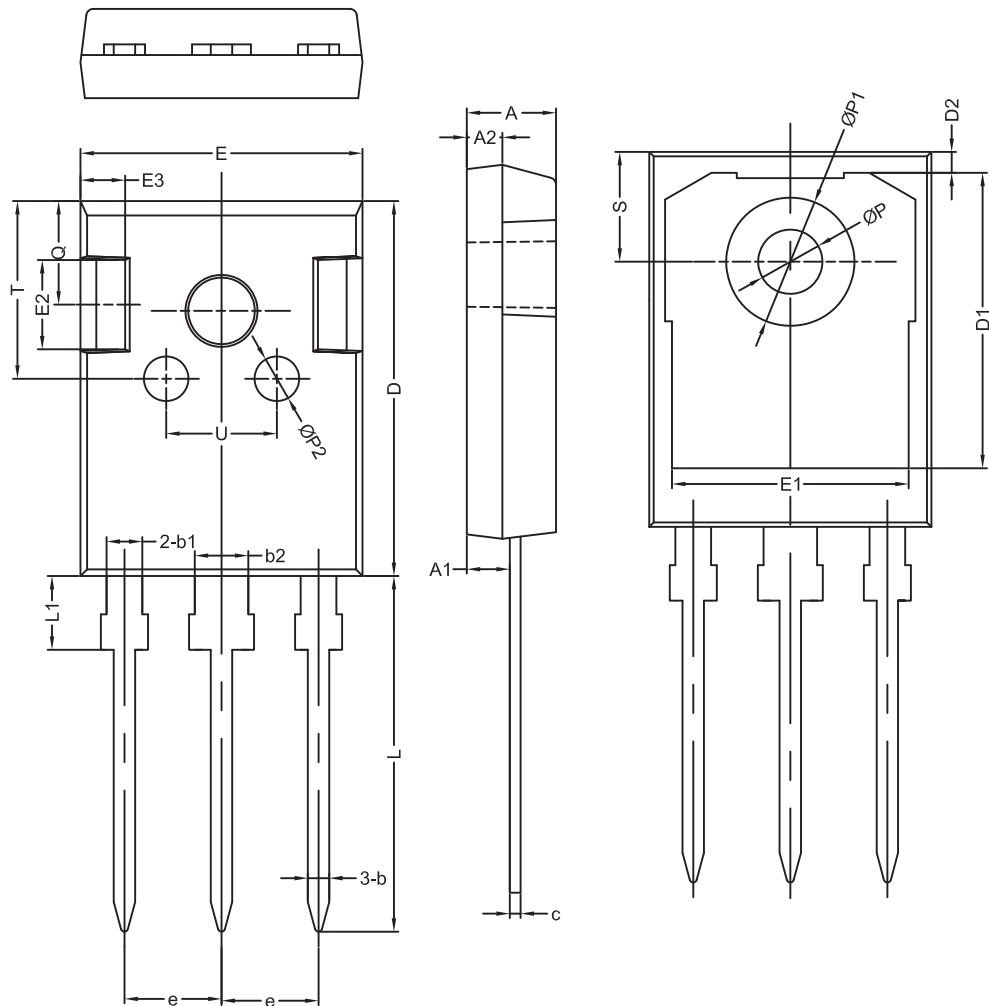
Typical Characteristics



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	