

CMH130N85A/CMA130N85A

85V, 4mΩ typ., 200A N-Channel MOSFE

General Description

The 130N85A uses advanced SGT technology to provide excellent RDS(ON).It can be used in a wide variety of applications.

Product Summary

BVDSS	R _{DS(on)} max.	ID
85V	4.8mΩ	200A

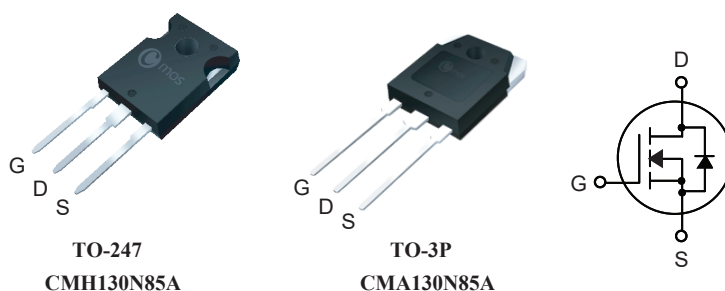
Applications

- Motor
- BMS
- Load switch

Features

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

TO-247/TO-3P Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	85	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 (Note 1)	1322	mJ
P _D @T _C =25°C	Total Power Dissipation	330	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient	---	62	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.38	°C/W

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	85	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =50A	---	4	4.8	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2.0	---	4.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =85V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =20A	---	27	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	3.0	---	Ω
Q _g	Total Gate Charge	I _D =50A	---	55	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =40V	---	15	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	13	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =40V V _{GS} = 10V R _{G_ext} = 3Ω	---	20	---	ns
T _r	Rise Time		---	39	---	
T _{d(off)}	Turn-Off Delay Time		---	45	---	
T _f	Fall Time		---	23	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	4150	---	pF
C _{oss}	Output Capacitance		---	1700	---	
C _{rss}	Reverse Transfer Capacitance		---	140	---	

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	---	0.88	1.4	V
t _{rr}	Reverse Recovery Time	I _S =20A	---	60	---	ns
Q _{rr}	Reverse Recovery Charge	di/dt =500A/μs	---	560	---	nC

Note :

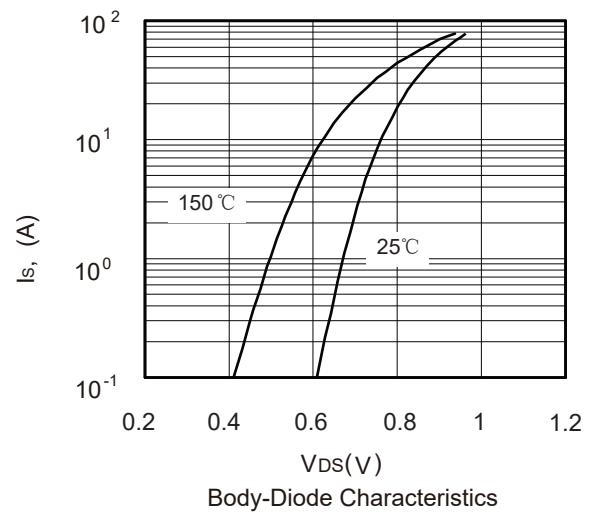
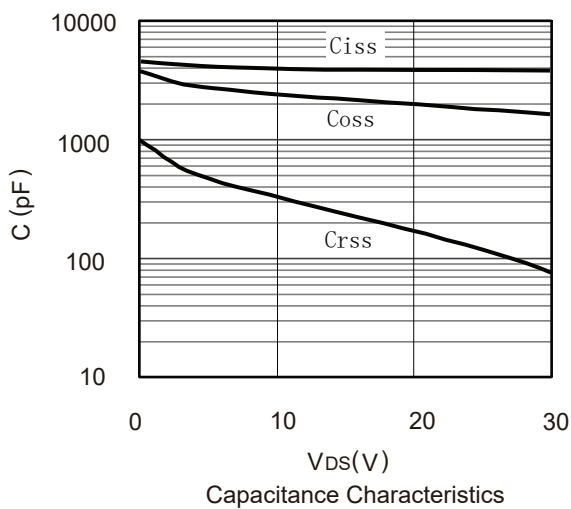
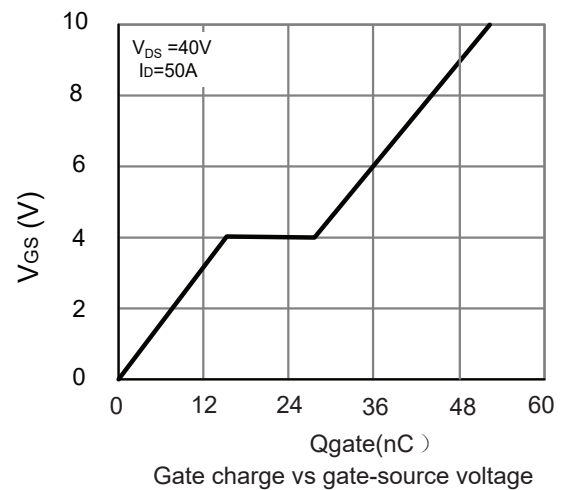
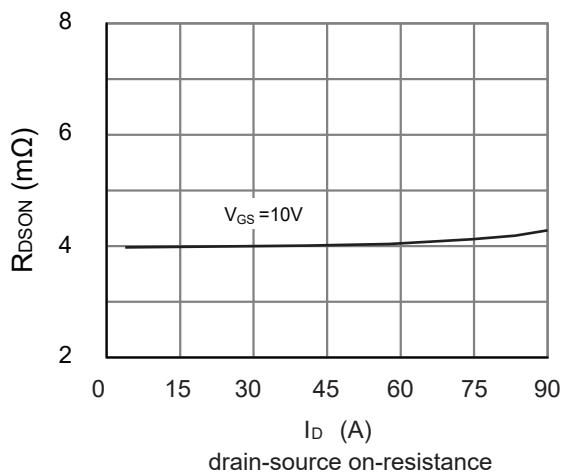
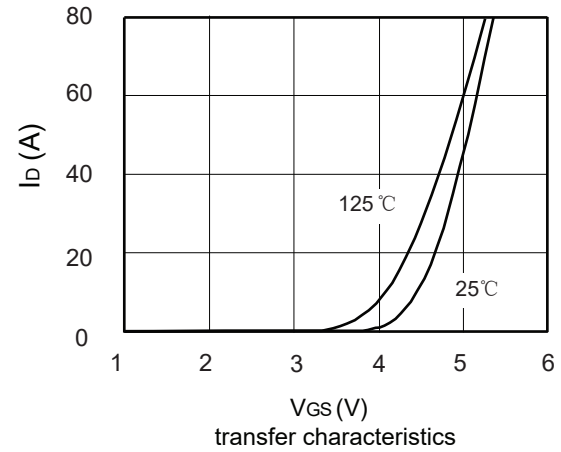
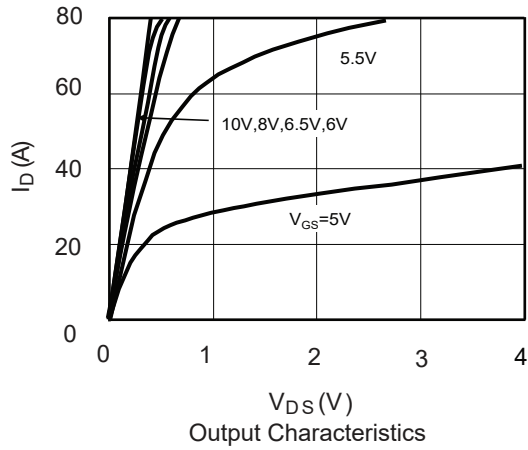
- The EAS data shows Max. rating .The test condition is V_{DS} =50V , V_{GS}=10V , L=5mH , I_{AS}=23A.

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

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

Cmos reserver the right to improve product design ,functions and reliability wihtout notice.Please refer to the latest version of specification.

Typical Characteristics



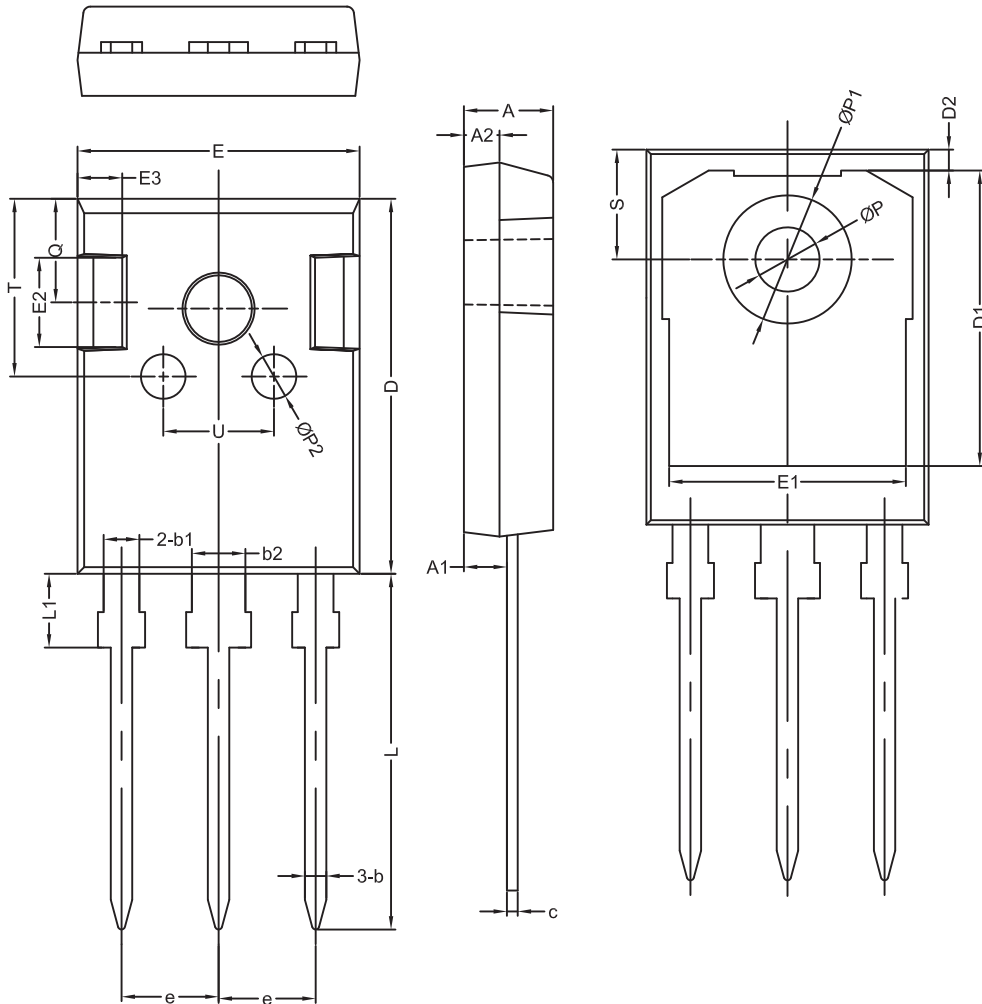
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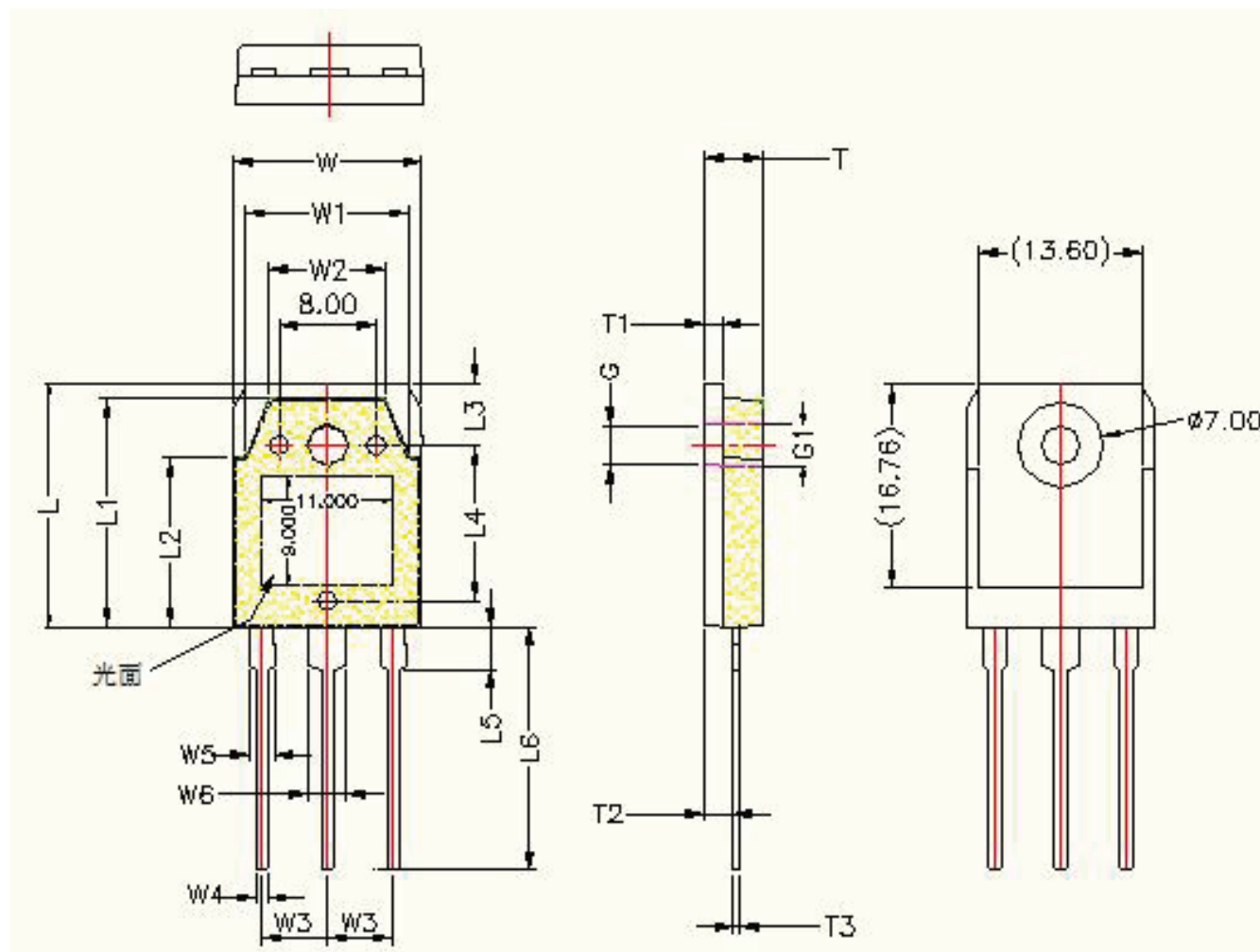
Package Dimension

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	

Package Dimension
TO-3P
Unit :mm


Symbol	Dimensions	Symbol	Dimensions	Symbol	Dimensions
W	15.60±0.3	L	19.90±0.3	T	4.80±0.3
W1	13.60±0.3	L1	18.70±0.3	T1	1.50±0.3
W2	9.60±0.3	L2	13.90±0.3	T2	2.40±0.3
W3	5.45(TYP)	L3	5.00±0.3	T3	0.60±0.3
W4	1.00±0.3	L4	12.76±0.3	G	Ø3.25±0.3
W5	2.10±0.2	L5	3.50±0.3	G1	Ø3.58±0.3
W6	3.10±0.2	L6	20.00±0.3		