CMH65R035SD

650V, 32mΩ typ., 80A N-Channel Super Junction Power MOSFET

General Description

The CMH65R035SD is power MOSFET using Cmos's advanced super junction technology. The resulting devices provide all benefits of a fast switching super junction MOSFET while offering an extremely fast and robust body diode. This combination of extremely low switching, commutation and conduction losses together with highest robustness make especially resonant switching applications more reliable, more efficient and lighter.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
650V	35mΩ	80A

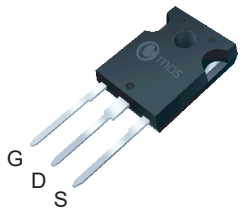
Applications

- Charger
- Power Supply
- Solar/Renewable/UPS-Micro Inverter System

Features

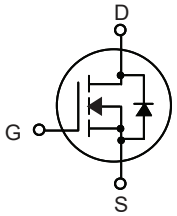
- Low On-Resistance
- Ultra-fast body diode
- Better efficiency due to very low FOM
- RoHS Compliant

TO-247 Pin Configuration



TO-247

CMH65R035SD



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	650	V
V_{GS}	Gate-Source Voltage	±30	V
I_D@T_C=25℃	Continuous Drain Current	80	A
I_D@T_C=100℃	Continuous Drain Current	50	A
I_{DM}	Pulsed Drain Current	320	A
EAS	Single Pulse Avalanche Energy (Note 1)	6000	mJ
P_D@T_C=25℃	Total Power Dissipation	700	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	41	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.18	℃/W

650V, 32mΩ typ., 80A N-Channel Super Junction Power MOSFET

Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	650	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=42A	---	32	35	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	3.2	---	4.6	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=650V , V_{GS}=0V	---	---	10	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±30V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V, I_D =20A	---	27	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1.0	---	Ω
Q_g	Total Gate Charge	I_D=42A V_{DS}=480V V_{GS}=10V	---	166	---	nC
Q_{gs}	Gate-Source Charge		---	54	---	
Q_{gd}	Gate-Drain Charge		---	90	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=400V V_{GS}=10V I_D=42A R_G=27Ω	---	171	---	ns
T_r	Rise Time		---	111	---	
$T_{d(off)}$	Turn-Off Delay Time		---	492	---	
T_f	Fall Time		---	88	---	
C_{iss}	Input Capacitance	V_{DS}=40V , V_{GS}=0V , f=1MHz	---	6150	---	pF
C_{oss}	Output Capacitance		---	3450	---	
C_{rss}	Reverse Transfer Capacitance		---	320	---	

Diode Characteristics

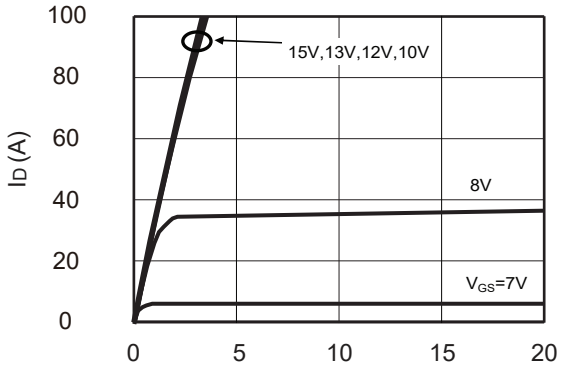
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	80	A
I_{SM}	Pulsed Source Current		---	---	320	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=42A	---	0.93	1.2	V

Note :

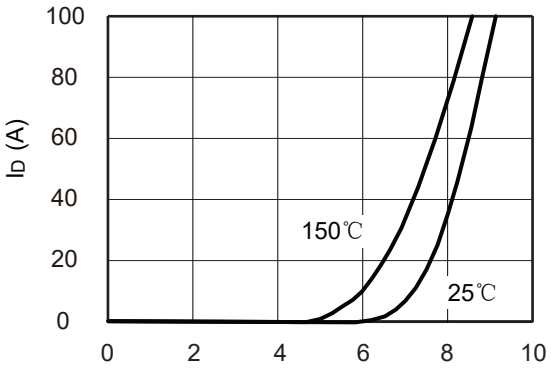
1.The EAS data shows Max. rating .The test condition is V_{DS}=150V , V_{GS}=10V , L=30mH , I_{AS}=20A.

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.

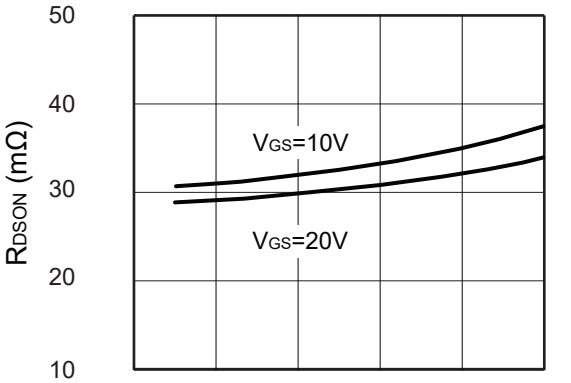
Typical Characteristics



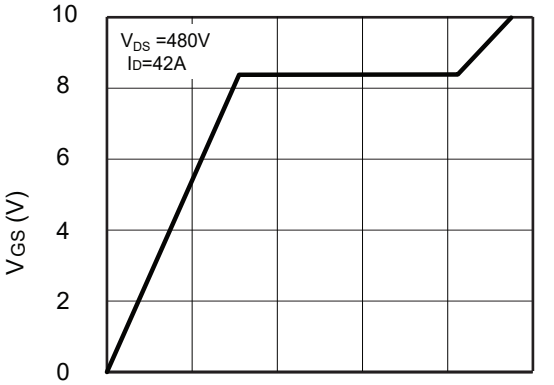
Output Characteristics



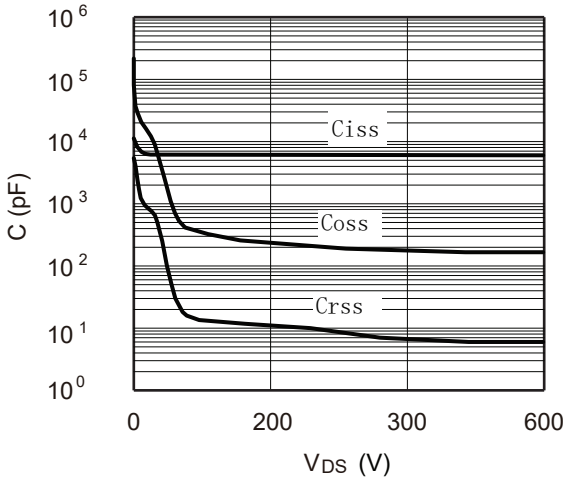
transfer characteristics



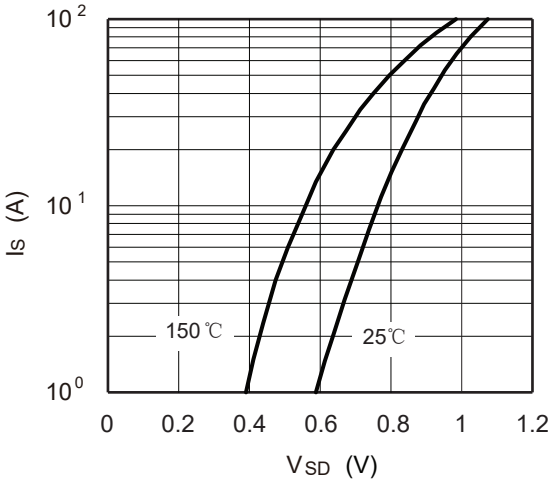
On-Resistance vs Drain Current



Gate charge vs gate-source voltage



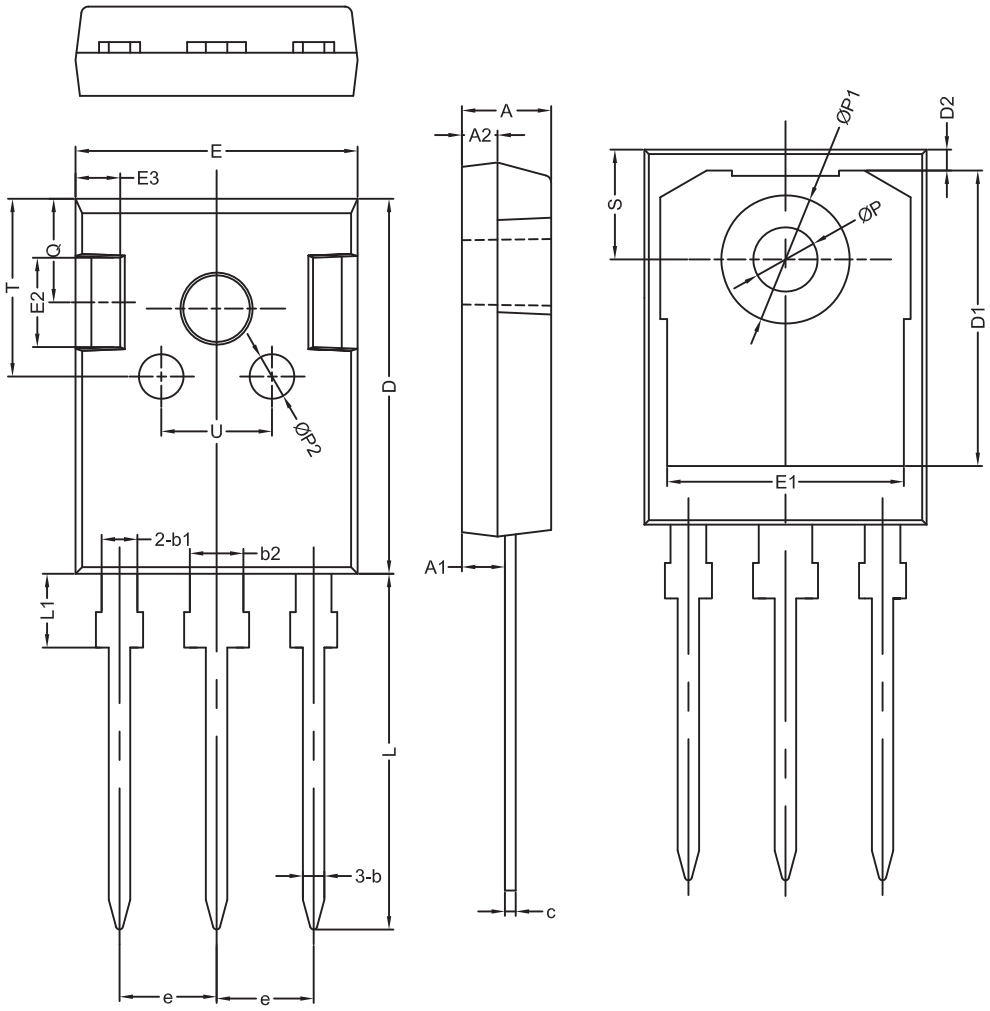
Capacitance Characteristics



Body-Diode 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	