

General Description

CMH65R115P is power MOSFET using Cmos's advanced super junction technology that can realize very low on-resistance and gate charge. It will provide much high efficiency by using optimized charge coupling technology. These parts can be adopted quickly into new and existing offline power supply designs.

Features

- Multi-layer Epitaxial Chip Technology
- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	650	V
V_{GS}	Gate-Source Voltage	±30	V
$I_D@T_C=25^{\circ}\text{C}$	Continuous Drain Current	33	A
$I_D@T_C=100^{\circ}\text{C}$	Continuous Drain Current	21	A
I_{DM}	Pulsed Drain Current	132	A
EAS	Single Pulse Avalanche Energy ¹	211	mJ
$P_D@T_C=25^{\circ}\text{C}$	Total Power Dissipation	255	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.49	°C/W

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
650V	115mΩ	33A

Applications

- DC-DC Converters
- Adapter
- PFC Power Supply Stages
- Switching Applications

TO-247 Pin Configuration



Type	Package	Marking
CMH65R115P	TO-247	CMH65R115P

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	650	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=15A$	---	95	115	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=600V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=15A$	---	24	---	S
Q_g	Total Gate Charge	$I_D=33A$	---	77	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=480V$	---	17	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	34	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=300V$	---	46	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	114	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=33A$	---	247	---	
T_f	Fall Time	$R_G=25\Omega$	---	92	---	
C_{iss}	Input Capacitance	$V_{DS}=100V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	2750	---	pF
C_{oss}	Output Capacitance		---	110	---	
C_{rss}	Reverse Transfer Capacitance		---	13	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	33	A
I_{SM}	Pulsed Source Current		---	---	132	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=15A$	---	---	1.4	V
t_{rr}	Reverse Recovery Time	$V_{DD}=100V$, $I_S=33A$	---	587	---	ns
Q_{rr}	Reverse Recovery Charge	$dI_F/dt=100A/\mu s$	---	10.8	---	μC

Notes:

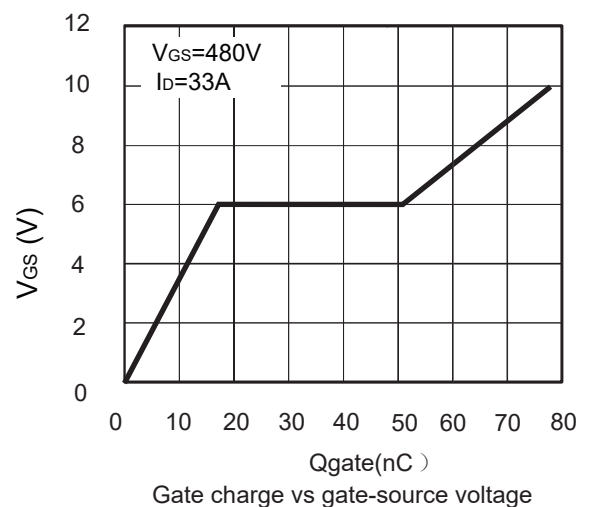
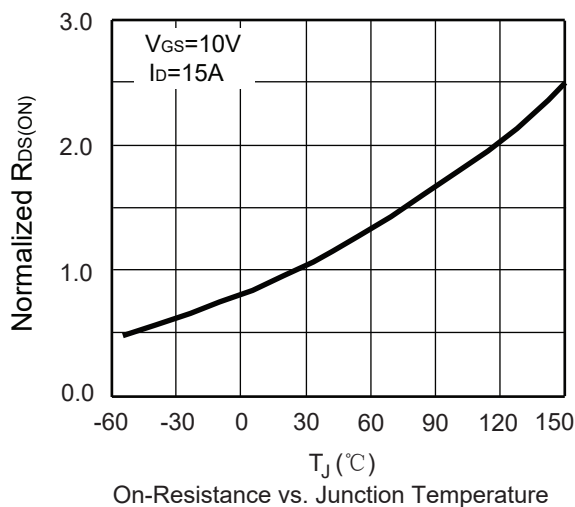
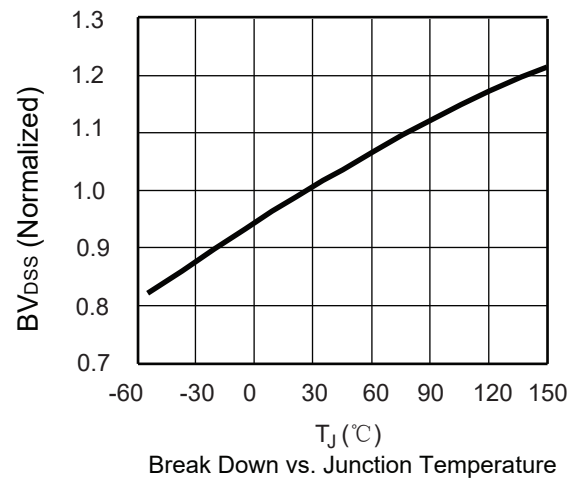
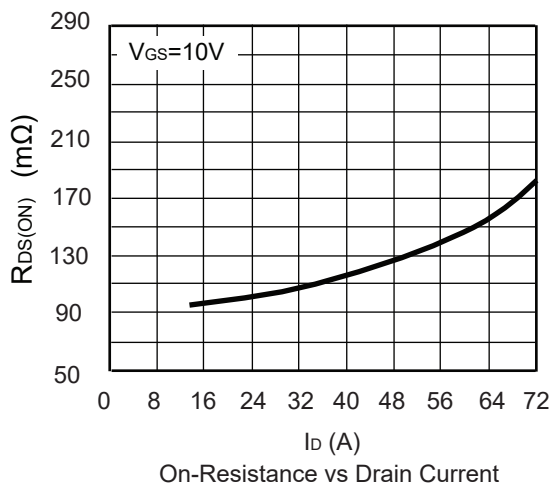
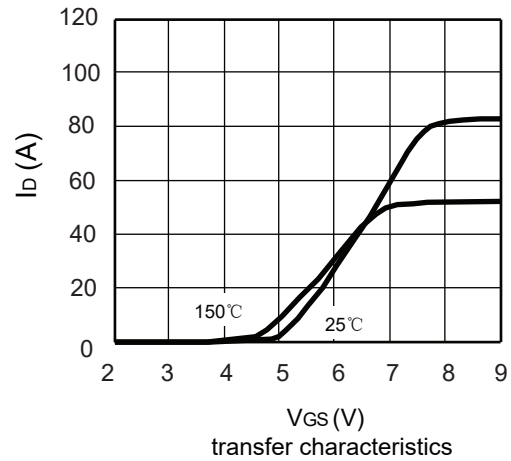
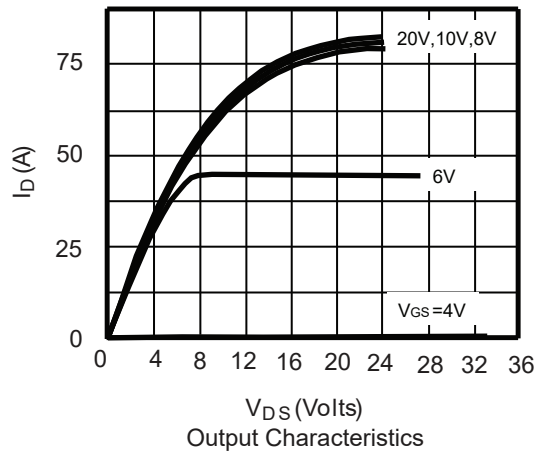
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=1mH$, $I_D=6.5A$

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

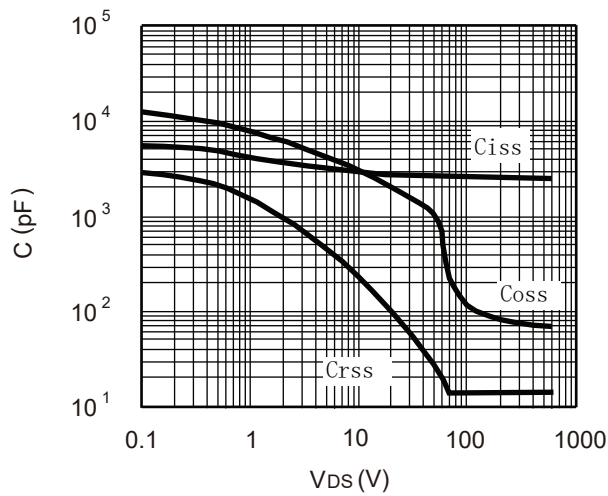
Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design ,functions and reliability without notice.

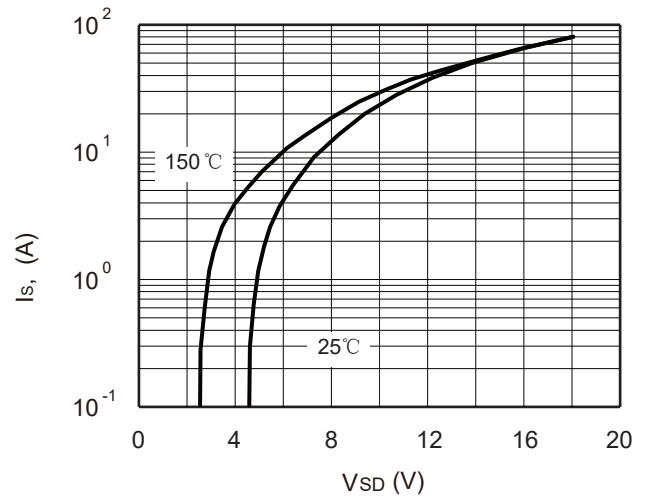
Typical Characteristics



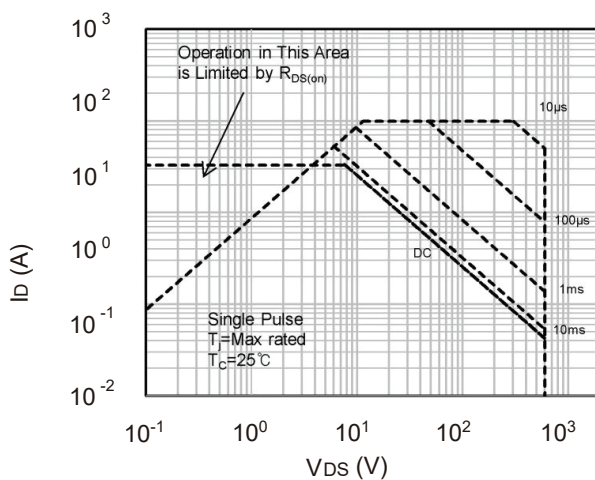
Typical Characteristics



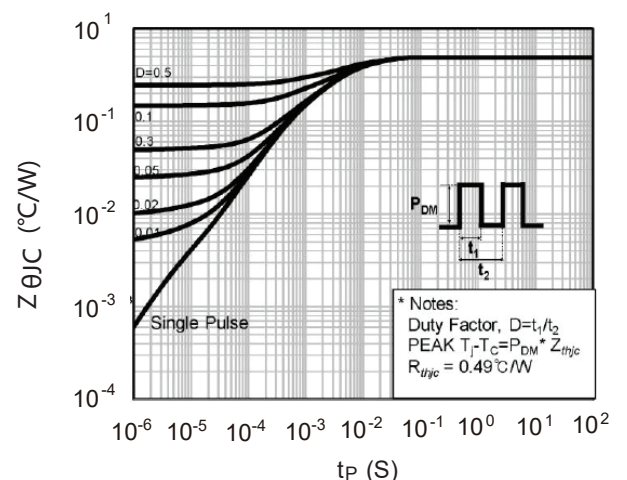
Capacitance Characteristics



Body-Diode Characteristics



Safe operating area

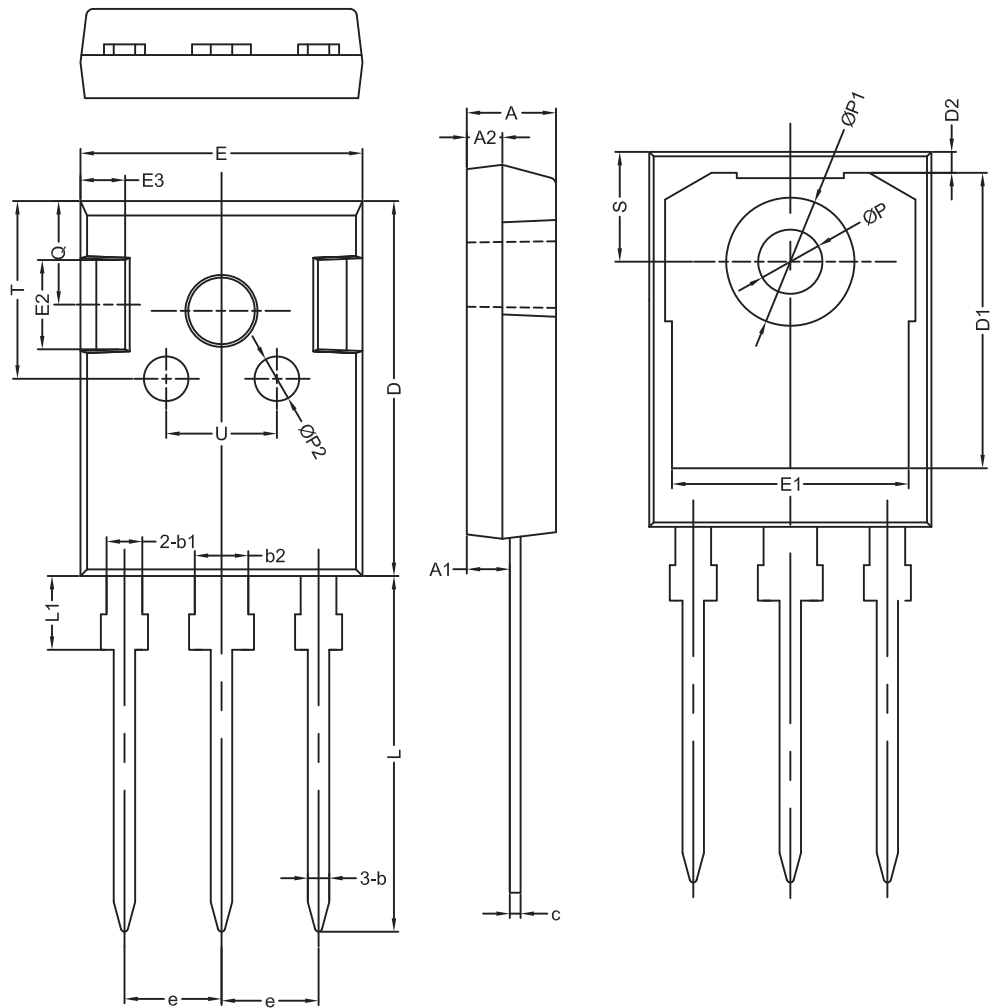


Transient Thermal Response Curve

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	