

General Description

65R115P 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

- Low On-Resistance
- 100% Avalanche Tested
- RoHS Compliant

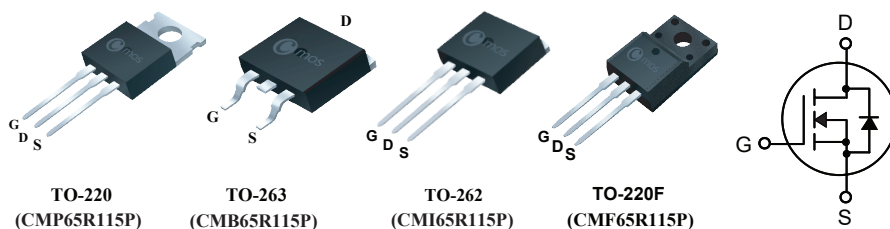
Product Summary

BVDSS	RDSON	ID
650V	115mΩ	33A

Applications

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

TO-247 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	220/263/262	220F	Units
V_{DS}	Drain-Source Voltage	650		V
V_{GS}	Gate-Source Voltage	±30		V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	33	33*	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	21	21*	A
I_{DM}	Pulsed Drain Current	132	132*	A
EAS	Single Pulse Avalanche Energy (Note 1)	1100		mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	250	40	W
T_{STG}	Storage Temperature Range	-55 to 150		°C
T_J	Operating Junction Temperature Range	150		°C

Thermal Data

Symbol	Parameter	220/263/262	220F	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62.5	62.5	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	0.49	3.6	°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	$V_{GS}=0V$, $I_D=250\mu A$	650	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=15A$	---	91	115	m Ω
$V_{GS(th)}$	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	$V_{DS}=10V$, $I_D=15A$	---	25	---	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	$V_{GS}=10V$	---	115	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=33A$	---	247	---	
T_f	Fall Time	$R_G=25\Omega$	---	92	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	3000	---	pF
C_{oss}	Output Capacitance		---	1850	---	
C_{rss}	Reverse Transfer Capacitance		---	120	---	

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:

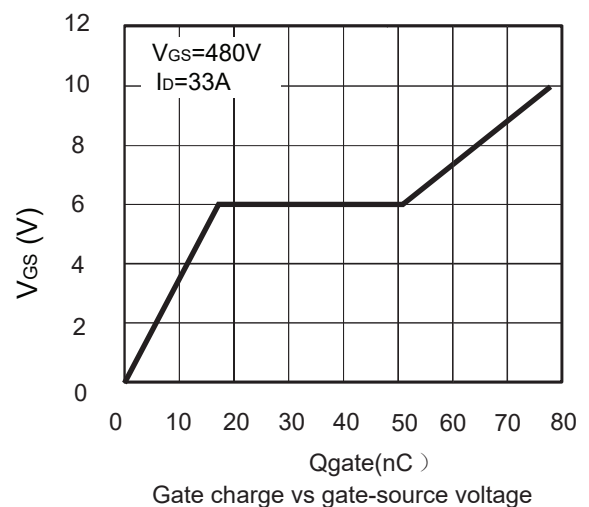
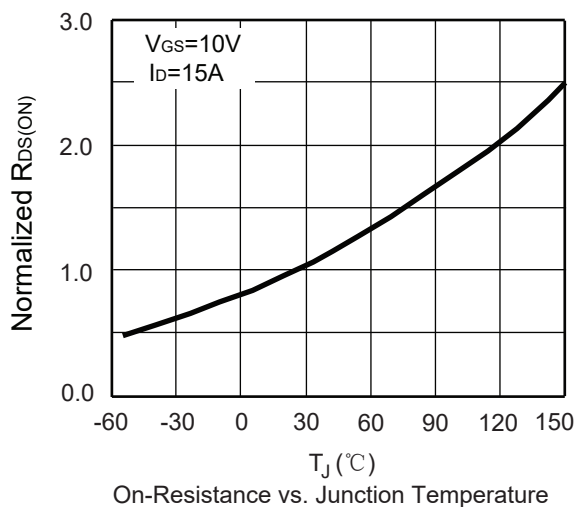
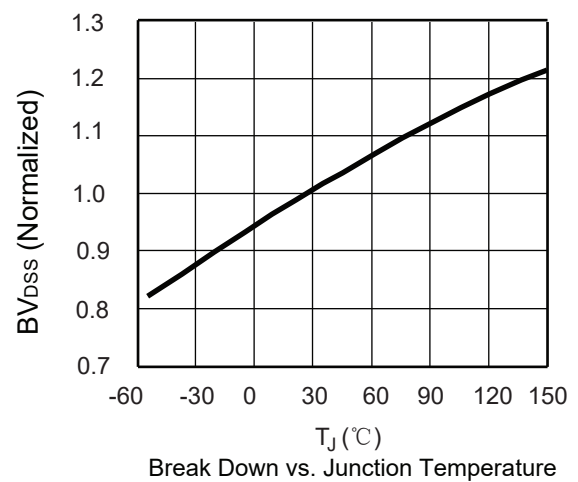
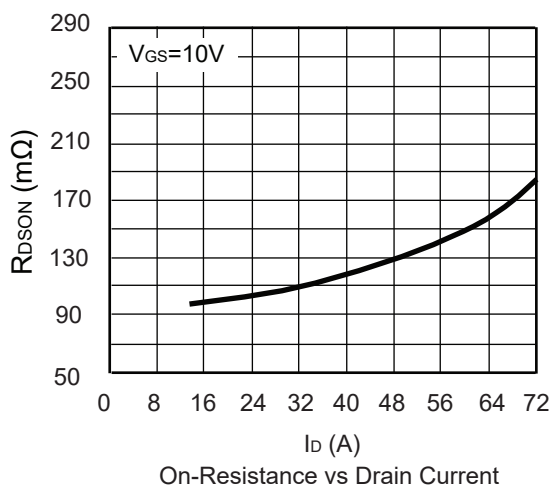
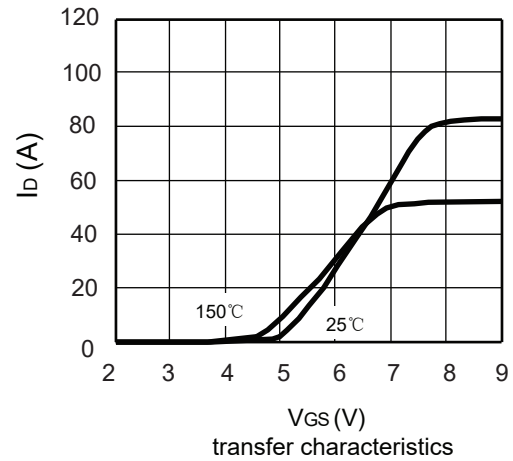
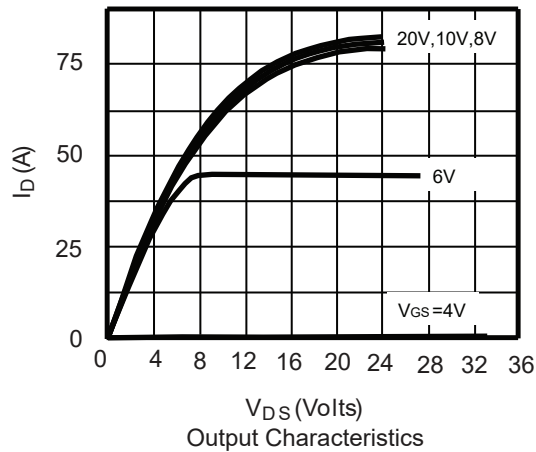
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=20mH$, $I_D=10.5A$

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

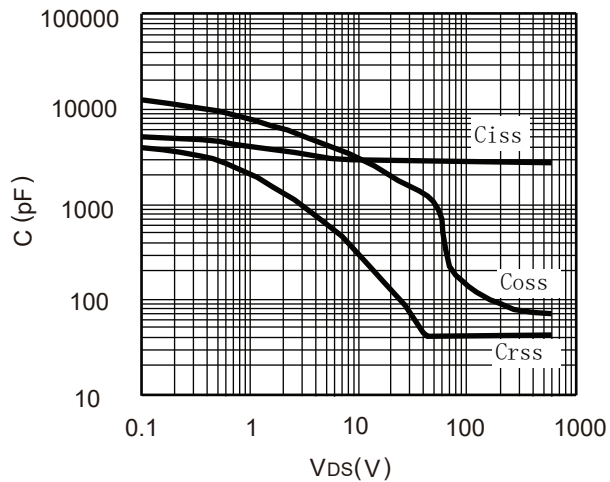
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Cmos reserves the right to improve product design ,functions and reliability without notice.

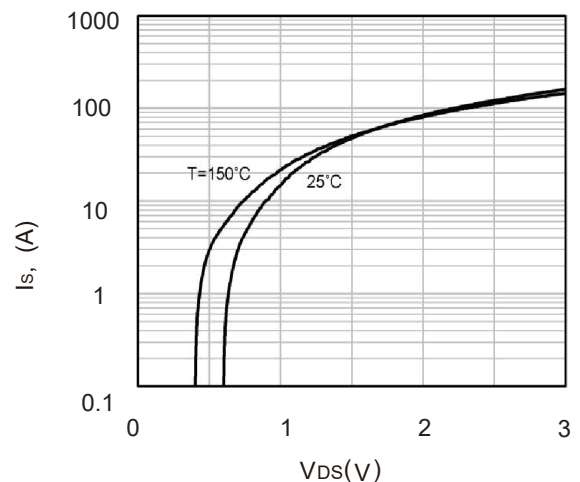
Typical Characteristics



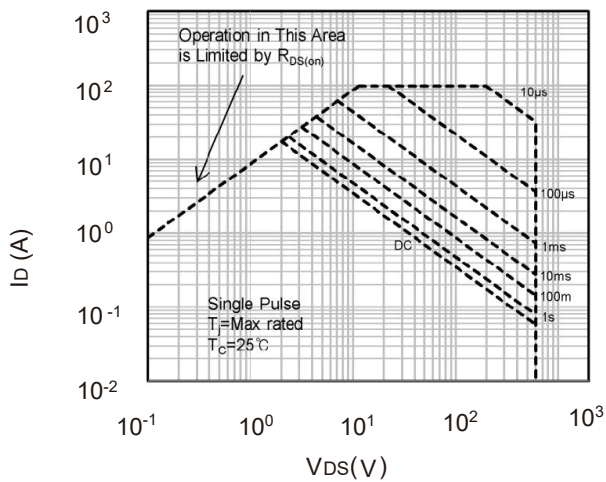
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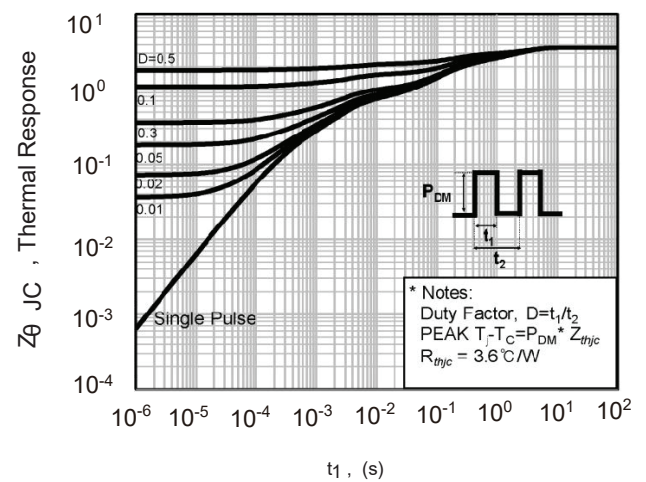
Capacitance Characteristics



Body-Diode Characteristics



Safe operating area



Transient Thermal Response Curve