

General Description

This MOSFET has been designed to minimize the on-state resistance and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

Features

- Reliable and Rugged
- Surface-mounted package
- Low On-Resistance
- RoHS Compliant

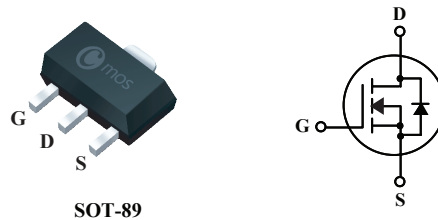
Product Summary

BVDSS	RDSON	ID
100V	85mΩ	10A

Applications

- DC - DC Converter
- Motor drivers

SOT-89 Pin Configuration



Type	Package	Marking
CME15N10	SOT-89	15N10

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	10	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current	30	A
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	3	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	---	62.5	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	6	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=2A$	---	75	85	m Ω
		$V_{GS}=4.5V$, $I_D=1A$	---	96	120	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=100V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=3A$	---	5	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	5	---	Ω
Q_g	Total Gate Charge	$V_{DS}=50V$, $V_{GS}=10V$, $I_D=10A$	---	25	---	nC
Q_{gs}	Gate-Source Charge		---	2.3	---	
Q_{gd}	Gate-Drain Charge		---	6.8	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$, $V_{GS}=10V$, $R_G=12\Omega$ $I_D=10A$	---	7	---	ns
T_r	Rise Time		---	31	---	
$T_{d(off)}$	Turn-Off Delay Time		---	51	---	
T_f	Fall Time		---	53	---	
C_{iss}	Input Capacitance	$V_{DS}=15V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	250	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	9	---	

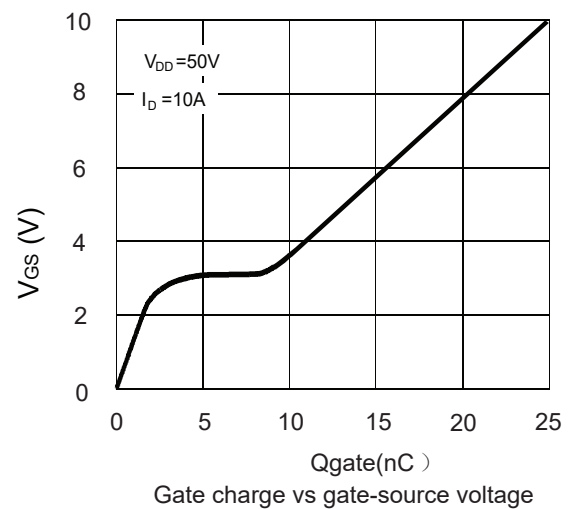
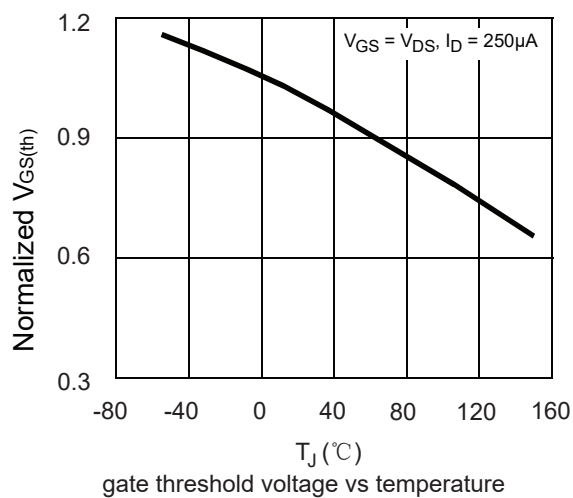
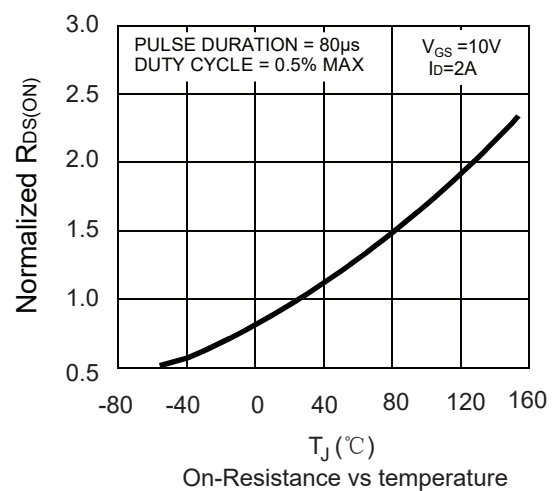
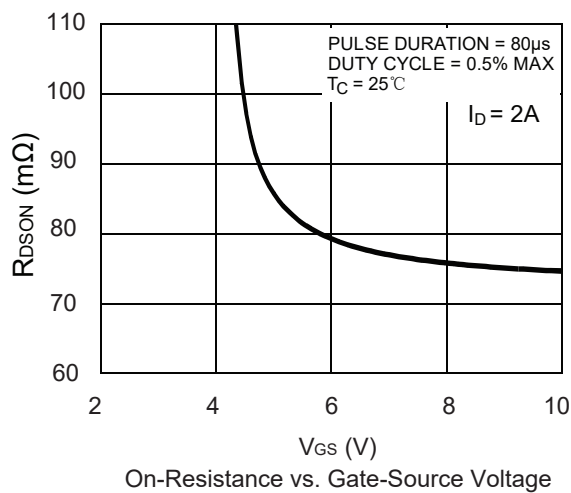
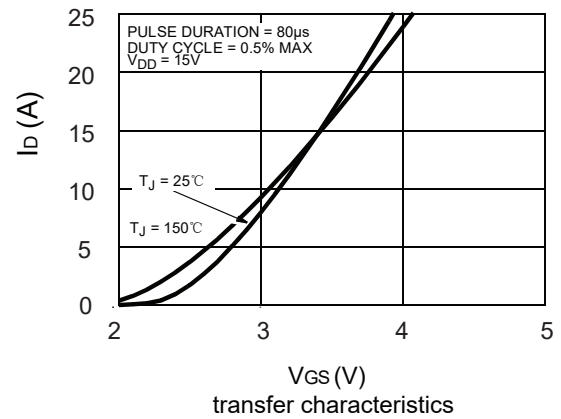
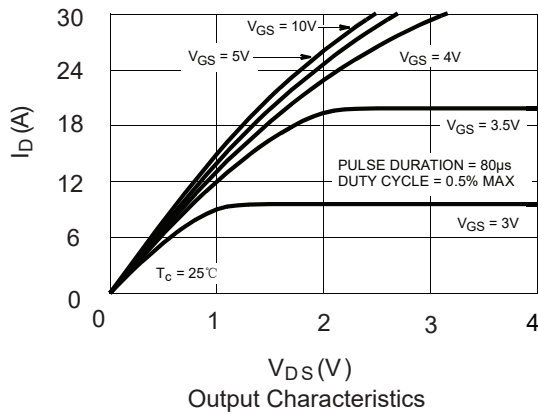
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	15	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=2A$, $T_J=25^{\circ}\text{C}$	---	---	1.2	V

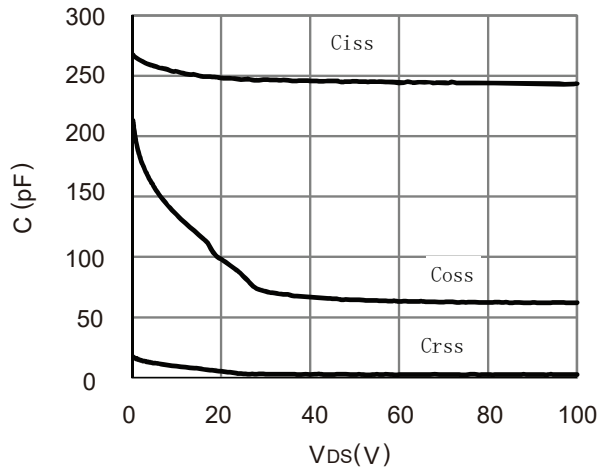
Note :

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 Cmos assumes no liability for customers' product design or applications.
 Cmos reserves the right to improve product design ,functions and reliability without notice.

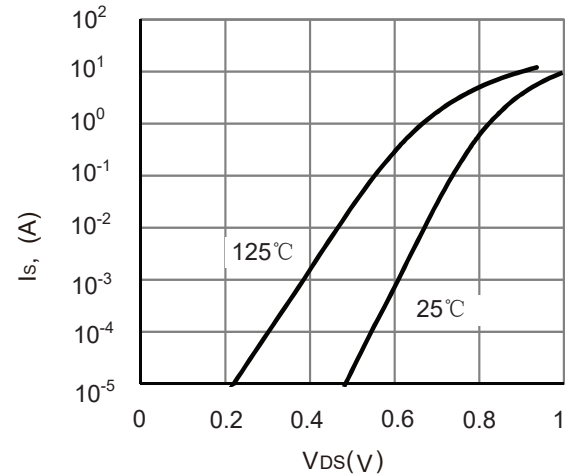
Typical Characteristics



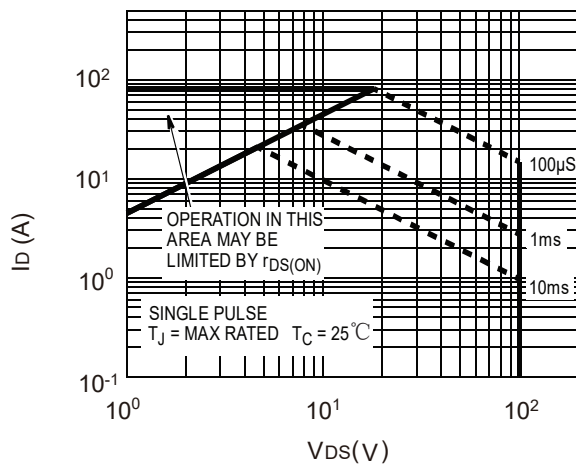
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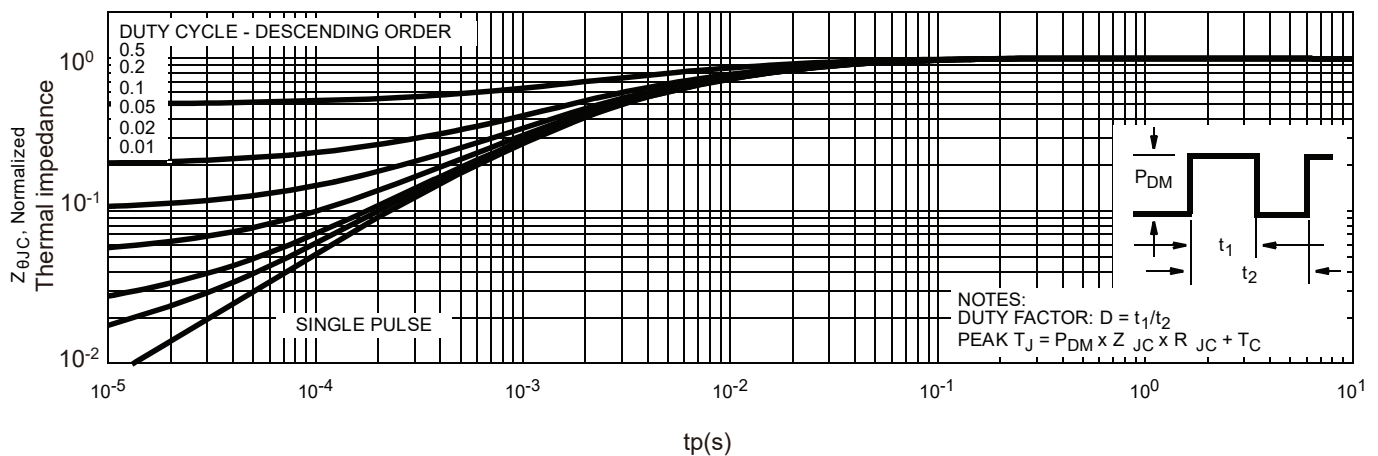
Capacitance Characteristics



Body-Diode Characteristics



Safe operating area



Normalized maximum transient thermal impedance