CME4410M

30V, 10.2mΩ typ., 12A N-Channel MOSFET

General Description

The CME4410M uses advanced process technology and design to provide excellent RDS(ON). This device is suitable for use as a Battery protection or in other switching application.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
30V	12mΩ	12A

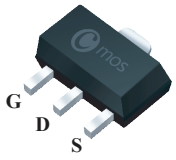
Applications

- Battery switch
- DC/DC converter

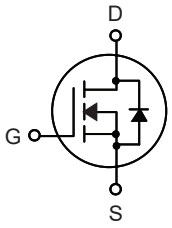
Features

- Low On-Resistance
- Simple Drive Requirements
- RoHS Compliant

SOT-89 Pin Configuration



SOT-89



Type	Package	Marking
CME4410M	SOT-89	4410M

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25℃	Continuous Drain Current	12	A
I_D@T_A=100℃	Continuous Drain Current	7	A
I_{DM}	Pulsed Drain Current	48	A
P_D@T_A=25℃	Total Power Dissipation	4	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(Steady-State)	---	31.2	℃/W

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	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=4A	---	10.2	12	mΩ
		V_{GS}=4.5V , I_D=2A	---	12.2	14.5	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1	---	2.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V , V_{GS} =0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=5V , I_D=4A	---	5	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1.5	---	Ω
Q_g	Total Gate Charge	I_D=10A V_{DS}=15V V_{GS}=10V	---	16	---	nC
Q_{gs}	Gate-Source Charge		---	2.3	---	
Q_{gd}	Gate-Drain Charge		---	3	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=15V V_{GS}=10V R_{GEN}=6Ω I_D=1A	---	8	---	ns
T_r	Rise Time		---	5	---	
$T_{d(off)}$	Turn-Off Delay Time		---	25	---	
T_f	Fall Time		---	6	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	980	---	pF
C_{oss}	Output Capacitance		---	110	---	
C_{rss}	Reverse Transfer Capacitance		---	95	---	

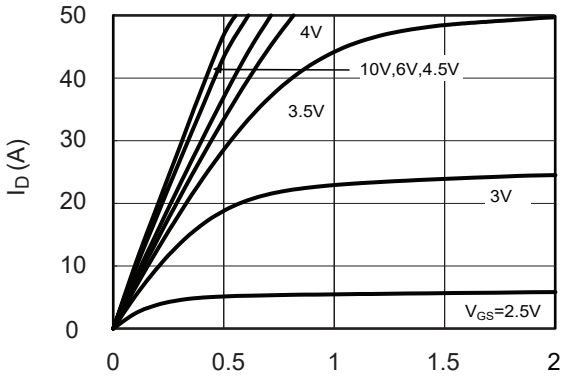
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	12	A
I_{SM}	Pulsed Source Current		---	---	48	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=1A ,T_J=25℃	---	0.72	1.2	V

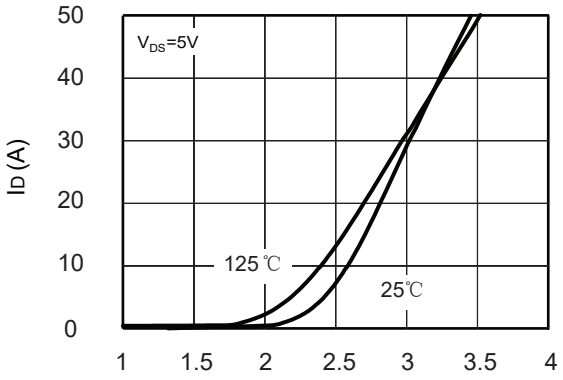
Note :

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.

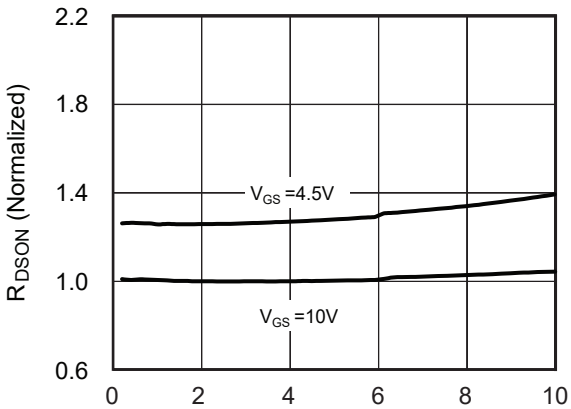
Typical Characteristics



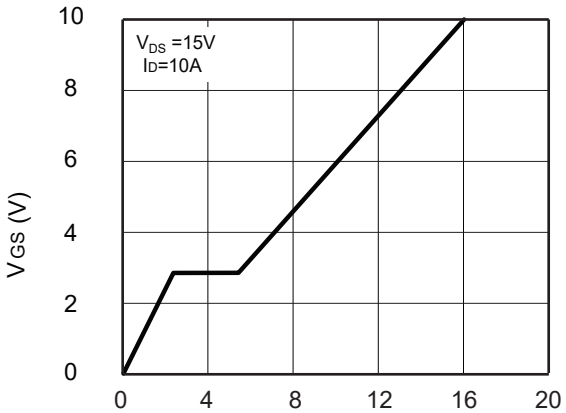
Output Characteristics



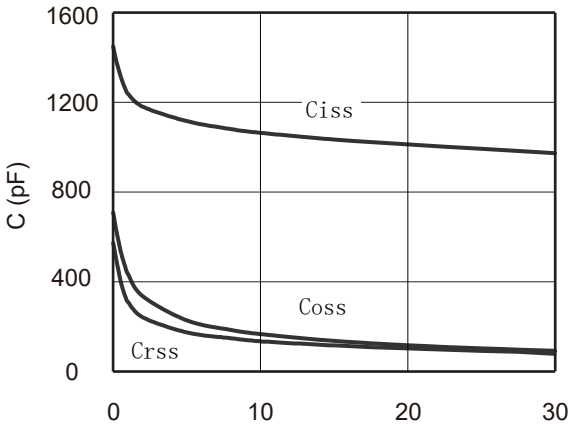
transfer characteristics



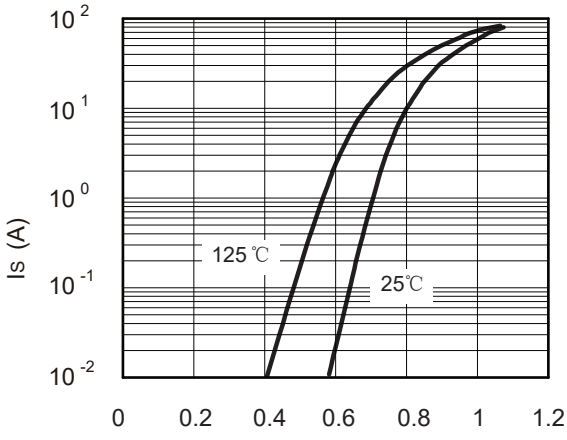
On-Resistance vs. Drain Current



Gate charge vs gate-source voltage



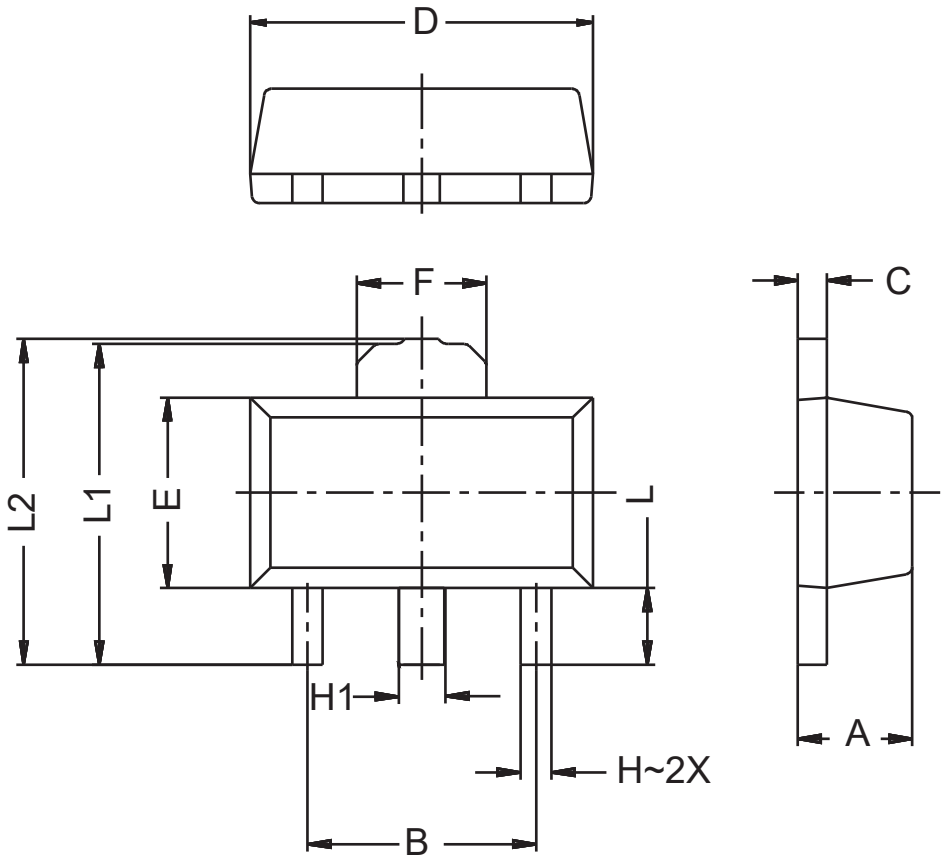
Capacitance Characteristics



Body-Diode Characteristics

Package Dimension

SOT-89 Unit :mm



Symbol	Dim in mm		
	Min	Nor	Max
A	1.45	1.50	1.55
B	2.95	3.00	3.05
C	0.37	0.38	0.40
D	4.45	4.50	4.55
E	2.45	2.50	2.55
F	1.65	1.70	1.75
H	0.37	0.40	0.48
H1	0.45	0.48	0.58
L	0.95	1.00	1.05
L1	4.15	4.20	4.25
L2	4.17	4.27	4.37