

General Description

The 482 is fabricated with DMOS trench technology that combines excellent $R_{DS(ON)}$ with low gate charge and low Q_{rr} .

The result is outstanding efficiency with controlled switching behavior. This universal technology is well suited for PWM, load switching and general purpose applications.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

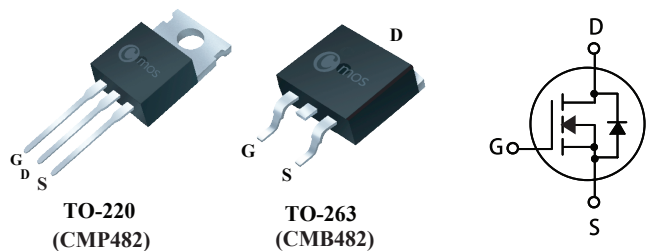
Product Summary

BVDSS	RDSON	ID
80V	6.5mΩ	105A

Applications

- LED power controller
- DC-DC & DC-AC converters
- High current, High speed switching
- Solenoid and relay drivers
- Motor control, Audio amplifiers

TO-220/263 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	± 25	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	105	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	82	A
I_{DM}	Pulsed Drain Current	420	A
EAS	Single Pulse Avalanche Energy ¹	1104	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	330	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient(Steady-State) ^{2,3}	60	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case(Steady-State)	0.45	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	80	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=25A$	---	5.5	6.5	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=80V$, $V_{GS}=0V$	---	---	10	μA
		$V_{DS}=80V$, $V_{GS}=0V$, $T_J=55^{\circ}\text{C}$	---	---	50	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 25V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=25A$	---	32	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	0.8	---	Ω
Q_g	Total Gate Charge	$I_D=20A$	---	67	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=40V$	---	21	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	20	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=40V$	---	26	---	ns
T_r	Rise Time	$R_G=3\Omega$	---	18	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_L=2\Omega$	---	48	---	
T_f	Fall Time	$V_{GS}=10V$	---	21	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	4400	---	pF
C_{oss}	Output Capacitance		---	600	---	
C_{rss}	Reverse Transfer Capacitance		---	220	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	105	A
I_{SM}	Pulsed Source Current		---	---	420	A
t_{rr}	Reverse Recovery Time	$I_F=20A$	---	26	---	ns
Q_{rr}	Reverse Recovery Charge	$dI/dt=500A/\mu s$	---	108	---	nC
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=50A$	---	0.81	1.2	V

Note :

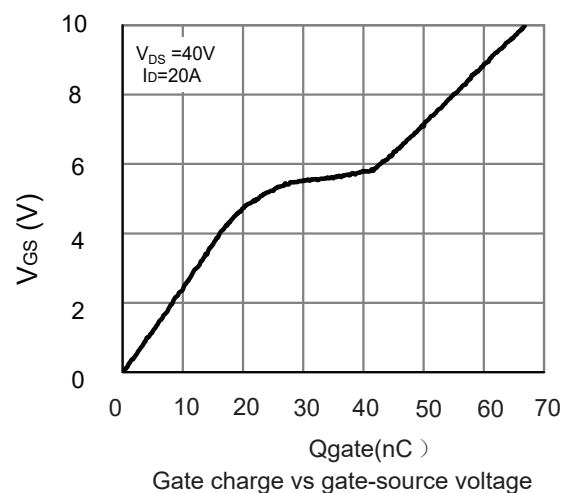
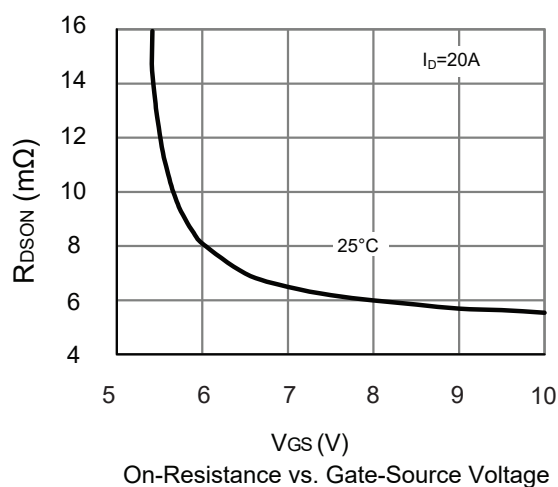
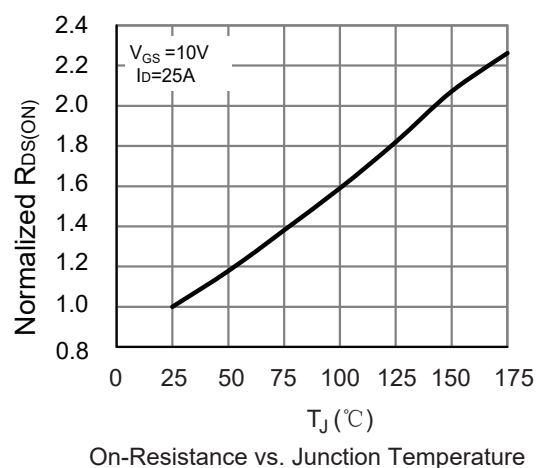
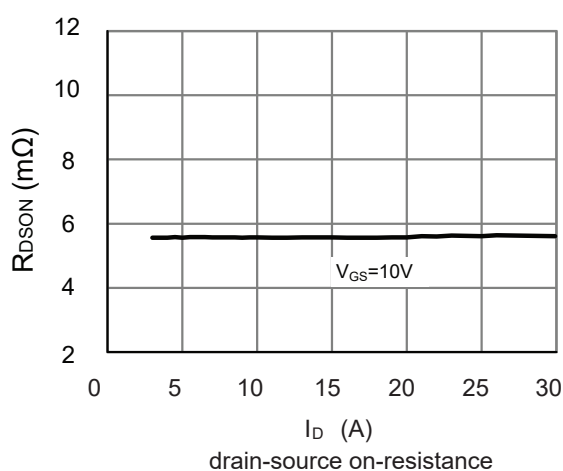
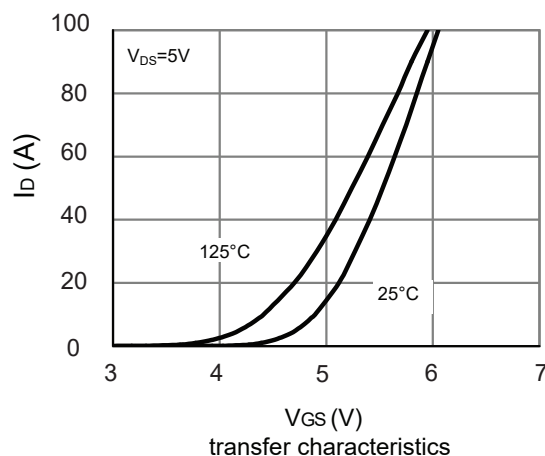
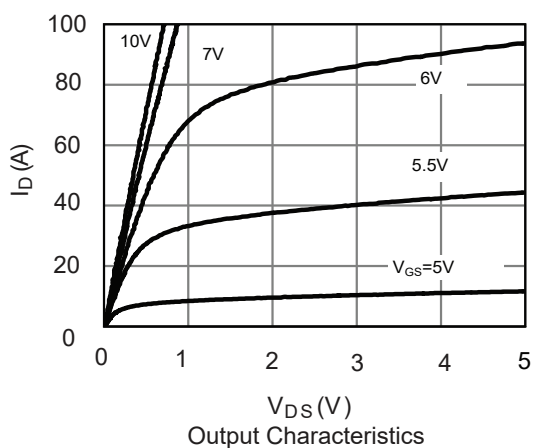
- The EAS data shows Max. rating .The test condition is $V_{DS}=50V$, $V_{GS}=10V$, $L=1mH$, $I_{AS}=47A$.
- The value of $R_{\theta JA}$ is measured with the device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The Power dissipation P_{DSM} is based on $R_{\theta JA}$ and the maximum allowed junction temperature of 150°C . The value in any given application depends on the user's specific board design, and the maximum temperature of 175°C may be used if the PCB allows it.
- The $R_{\theta JA}$ is the sum of the thermal impedance from junction to case $R_{\theta JC}$ and case to ambient

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

