

General Description

The CMA4410 uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications.

Features

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

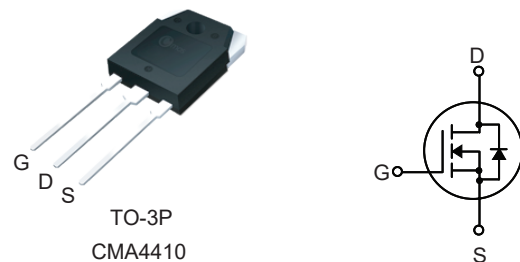
Product Summary

BVDSS	R _{DS(on)} max.	ID
100V	4.5mΩ	160A

Applications

- Power switching application
- UPS (Uninterruptible Power Supply)
- DC-DC converters

TO-3P Pin Configuration



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°C	Continuous Drain Current ^a	160	A
I _D @T _C =100°C	Continuous Drain Current	110	A
I _{DM}	Pulsed Drain Current ^{a b}	640	A
EAS	Single Pulse Avalanche Energy ^c	1300	mJ
P _D @T _C =25°C	Total Power Dissipation	350	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient	---	110	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.36	°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	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=30A$	---	4.1	4.5	mΩ
		$V_{GS}=6V$, $I_D=20A$	---	4.6	5.2	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=80V$, $V_{GS}=0V$	---	---	1	uA
		$V_{DS}=80V$, $V_{GS}=0V$, $TC=85^{\circ}\text{C}$	---	---	30	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=15V$, $I_D=15A$	---	33	---	S
Q_g	Total Gate Charge	$I_D=160A$	---	230	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=80V$	---	42	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	120	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$ $I_D=160A$ $R_G=25\Omega$	---	85	---	ns
T_r	Rise Time		---	900	---	
$T_{d(off)}$	Turn-Off Delay Time		---	250	---	
T_f	Fall Time		---	420	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	8500	---	pF
C_{oss}	Output Capacitance		---	900	---	
C_{rss}	Reverse Transfer Capacitance		---	500	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	160	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=30A$, $T_J=25^{\circ}\text{C}$	---	---	1.3	V

Note :

a : Current may be limited by bonding wire.

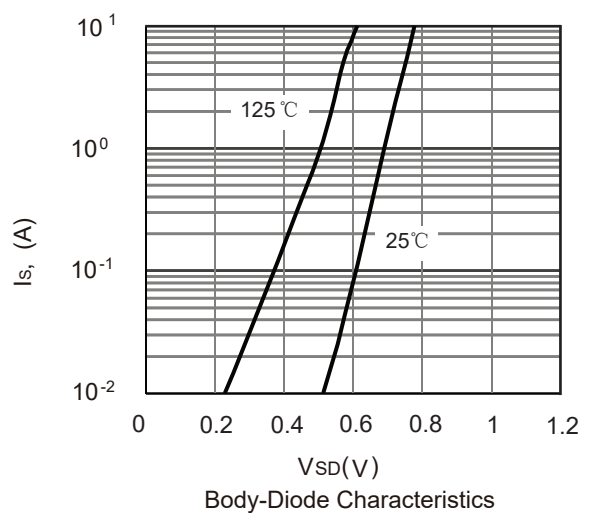
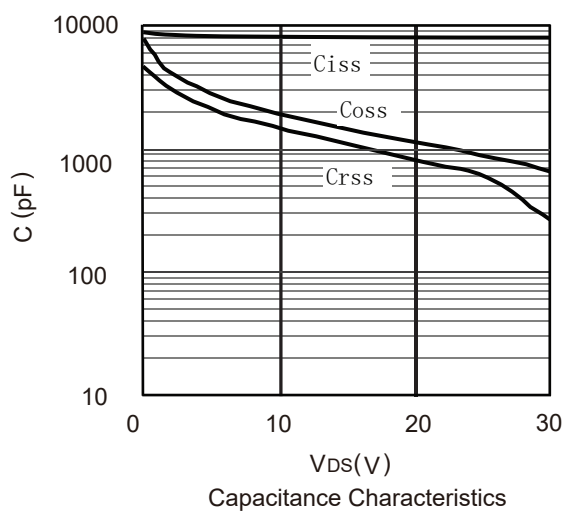
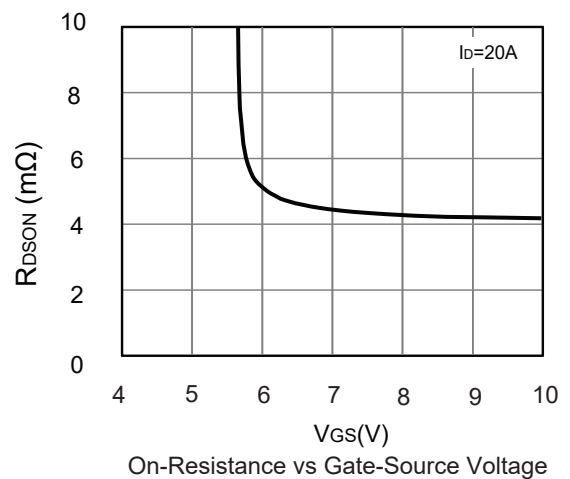
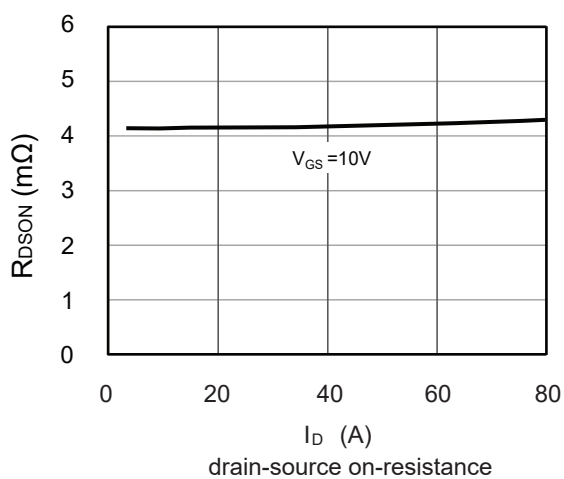
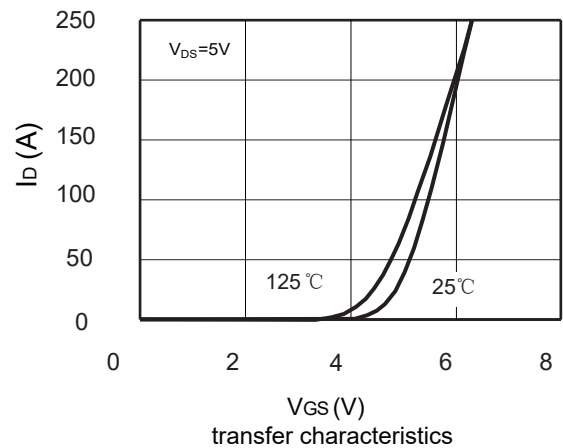
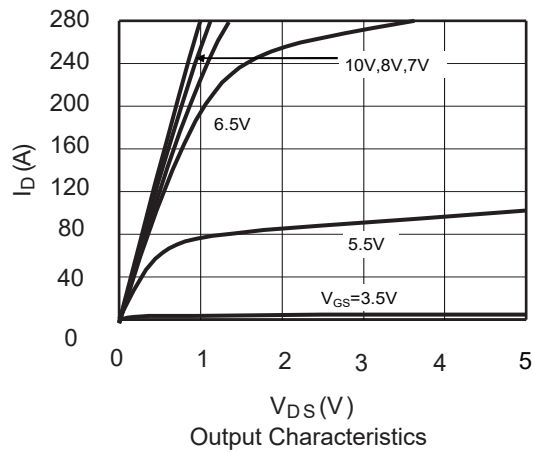
b : Pulse test : pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$ ($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)c : The EAS data shows Max. rating . The test condition is $V_{DD}=50V$, $V_{GS}=10V$, $L=1mH$, $I_{AS}=51A$.

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. Please refer to the latest version of specification.

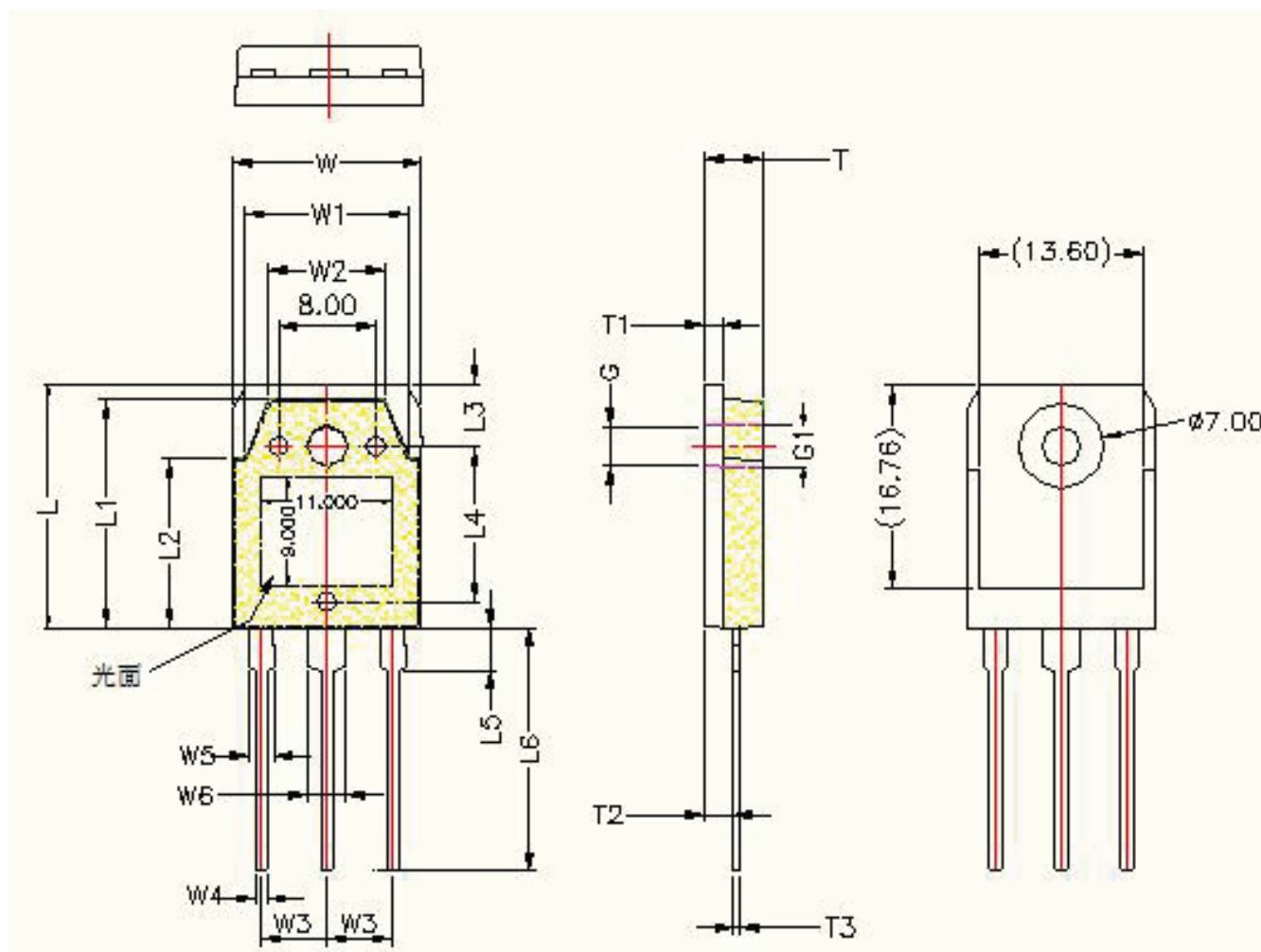
Typical Characteristics



Package Dimension

TO-3P

Unit :mm



Symbol	Dimensions	Symbol	Dimensions	Symbol	Dimensions
W	15.60±0.3	L	19.90±0.3	T	4.80±0.3
W1	13.60±0.3	L1	18.70±0.3	T1	1.50±0.3
W2	9.60±0.3	L2	13.90±0.3	T2	2.40±0.3
W3	5.45(TYP)	L3	5.00±0.3	T3	0.60±0.3
W4	1.00±0.3	L4	12.76±0.3	G	Ø3.25±0.3
W5	2.10±0.2	L5	3.50±0.3	G1	Ø3.58±0.3
W6	3.10±0.2	L6	20.00±0.3		