

General Description

These P-Channel enhancement mode power field effect transistors use advanced trench technology and design to provide excellent $R_{DS(on)}$. This device is suitable for use as a load switch or in PWM applications.

Features

- Low On-Resistance
- 100% avalanche tested
- Simple Drive Requirement
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	-90	A
I_{DM}	Pulsed Drain Current	-360	A
EAS	Single Pulse Avalanche Energy ¹	1012	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	90	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient($t \leq 10s$)	---	40	°C/W
$R_{\theta JC}$	Junction-to-Case (Drain)	---	1.4	°C/W

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-30V	6.4mΩ	-90A

Applications

- DC-DC Converters
- LCD Display inverter
- Power Management in Note book

TO-252/251 Pin Configuration



Type	Package	Marking
CMD100P03D	TO-252	CMD100P03D
CMU100P03D	TO-251	CMU100P03D

Electrical Characteristics (T_J=25°C , 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 =-25A	---	6	6.4	mΩ
		V _{GS} =-4.5V, I _D =-20A	---	9.5	12	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-1	---	-3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-24V, V _{GS} =0V , T _J =25°C	---	---	-5	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-10V , I _D =-10A	---	27	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	2	---	Ω
Q _g	Total Gate Charge	V _{DD} =-15V, I _D =-15A V _{GS} =-10V	---	100	---	nC
Q _{gs}	Gate-Source Charge		---	15	---	
Q _{gd}	Gate-Drain Charge		---	23	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =-15V, V _{GS} =-10V, R _L =1Ω R _{GEN} =3Ω	---	15	---	ns
T _r	Rise Time		---	18	---	
T _{d(off)}	Turn-Off Delay Time		---	78	---	
T _f	Fall Time		---	40	---	
C _{iss}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V , f=1MHz	---	4800	---	pF
C _{oss}	Output Capacitance		---	820	---	
C _{rss}	Reverse Transfer Capacitance		---	580	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-90	A
I _{SM}	Pulsed Source Current		---	---	-360	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =-20A	---	-0.85	-1.2	V

Note :

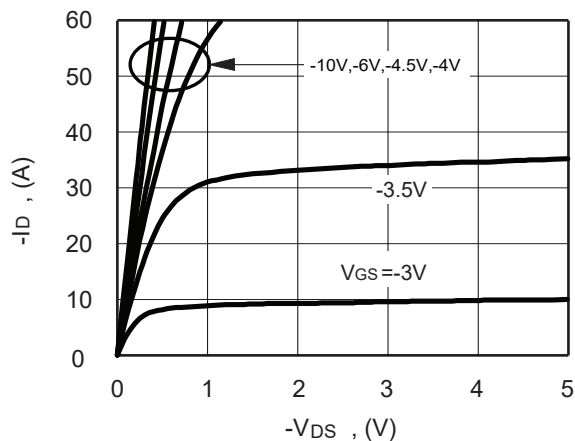
1.The EAS data shows Max. rating . The test condition is V_{DD}=-25V , V_{GS}=-10V , L=1mH , I_{AS}=-45A.

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

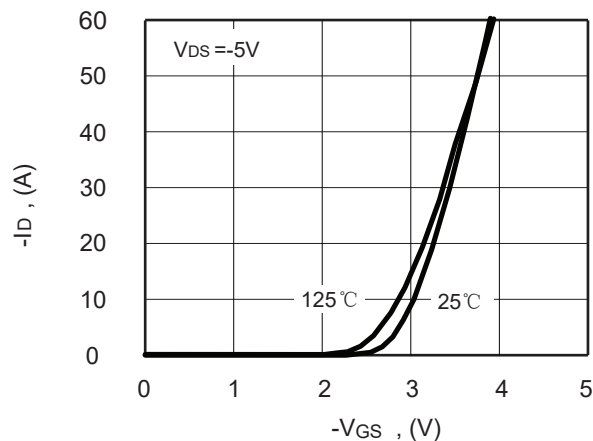
Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

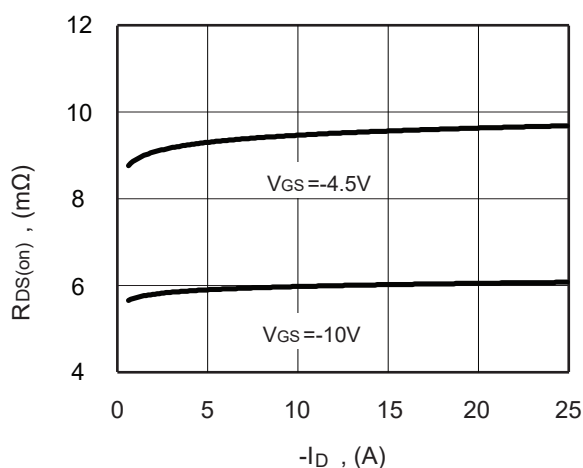
Typical Characteristics



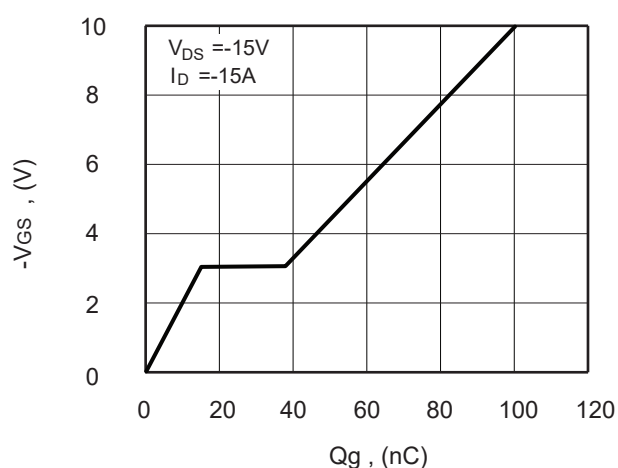
Output Characteristics



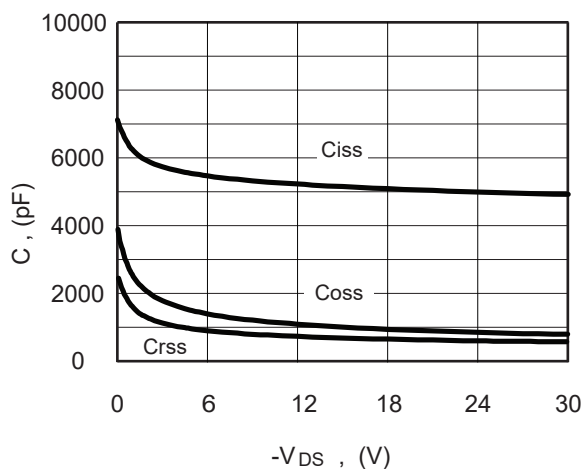
transfer characteristics



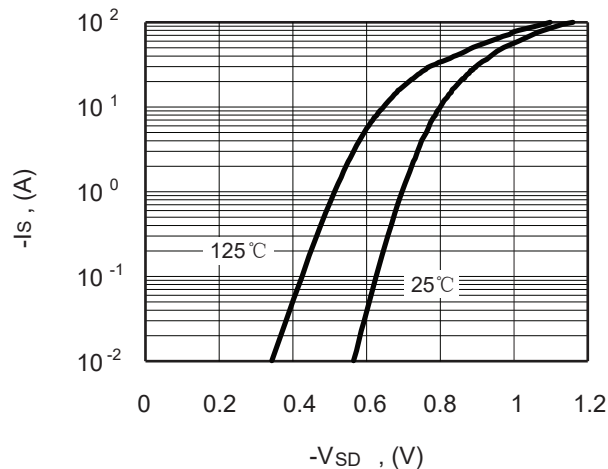
On-Resistance vs. Drain Current



Gate Charge Characteristics



Capacitance Characteristics

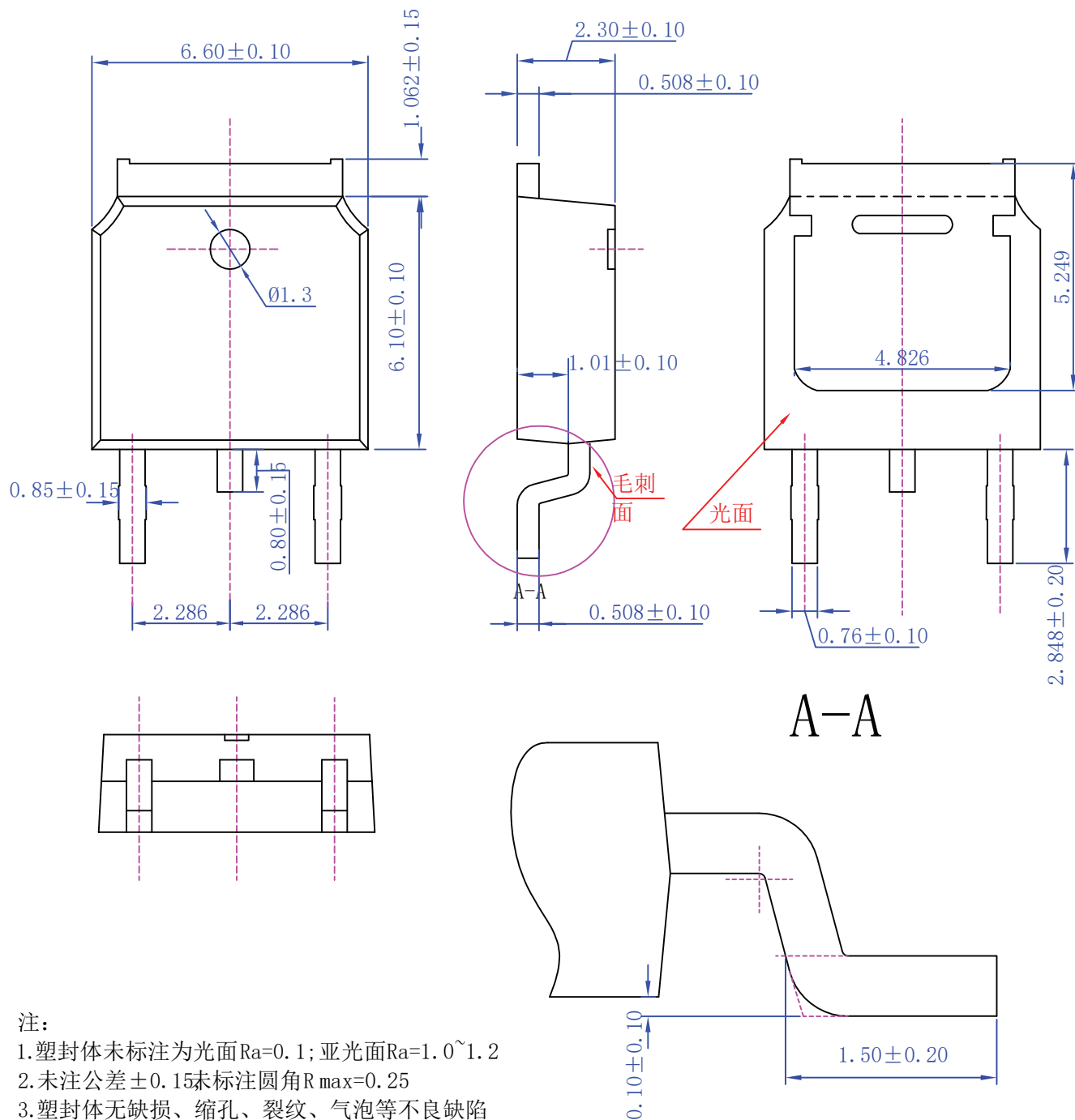


Body-Diode Characteristics

Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

