

CMD70R900/CMU70R900



700V, 830mΩ typ., 6A N-Channel Super Junction Power MOSFET

General Description

The series of devices use advanced super junction technology and design to provide excellent RDS(ON) with low gate charge.

This super junction mosfet fits the industry's AC-DC SMPS requirements for PFC, AC/DC power conversion, and industrial power applications.

Features

- Multi-layer Epitaxial Chip Technology
- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	700	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^{\circ}\text{C}$	Continuous Drain Current	6	A
$I_D@T_C=100^{\circ}\text{C}$	Continuous Drain Current	4	A
I_{DM}	Pulsed Drain Current	24	A
EAS	Single Pulse Avalanche Energy ¹	60	mJ
P_D	Total Power Dissipation	60	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	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	134	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	2.08	$^{\circ}\text{C}/\text{W}$

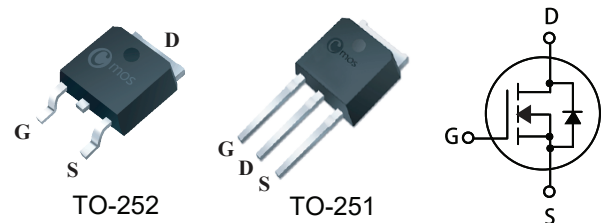
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
700V	950mΩ	6A

Applications

- Switched mode power supplies
- Uninterruptible Power Supply

TO-252/251 Pin Configuration



Type	Package	Marking
CMD70R900	TO-252	CMD70R900
CMU70R900	TO-251	CMU70R900

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 =250μA	700	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =3A	---	830	950	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	3.0	---	5.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =700V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±30V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =20V , I _D =3A	---	3	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	9	---	Ω
Q _g	Total Gate Charge	I _D =3A	---	11	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =480V	---	2.5	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	4.6	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =400V , I _D =3A R _G =25Ω , V _{GS} =10V	---	13	---	ns
T _r	Rise Time		---	14	---	
T _{d(off)}	Turn-Off Delay Time		---	50	---	
T _f	Fall Time		---	61	---	
C _{iss}	Input Capacitance	V _{DS} =100V , V _{GS} =0V , f=1MHz	---	300	---	pF
C _{oss}	Output Capacitance		---	30	---	
C _{rss}	Reverse Transfer Capacitance		---	7	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	6	A
I _{SM}	Pulsed Source Current		---	---	24	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =3A	---	0.84	1.2	V
t _{rr}	Reverse Recovery Time	I _S =3A , T _J =25°C	---	185	---	ns
Q _{rr}	Reverse Recovery Charge	di/dt =100A/μs , V _{DS} =100V	---	1.47	---	μC

Note :

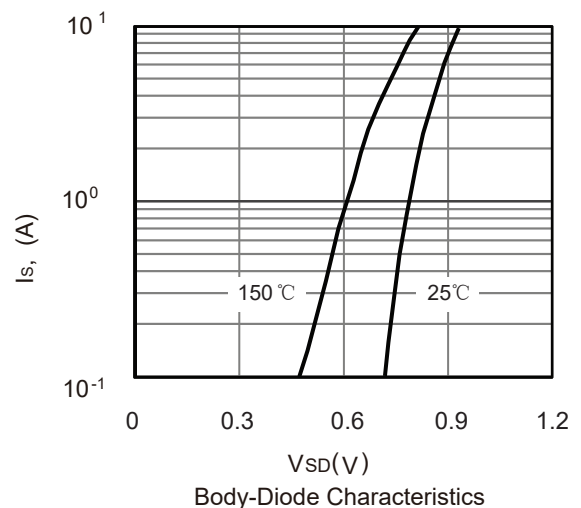
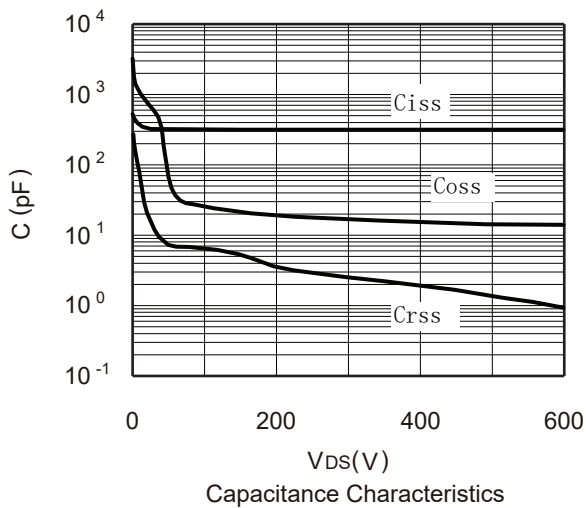
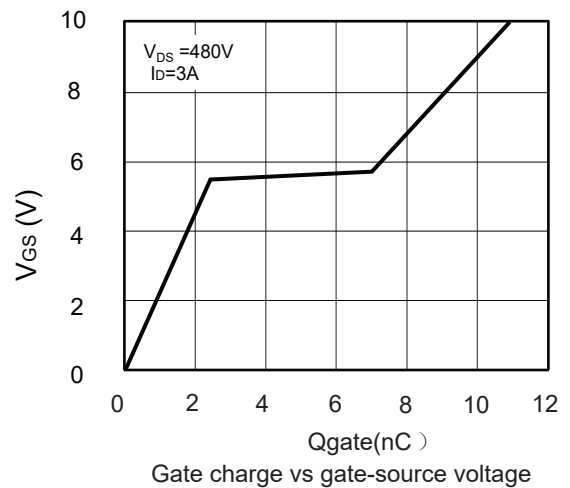
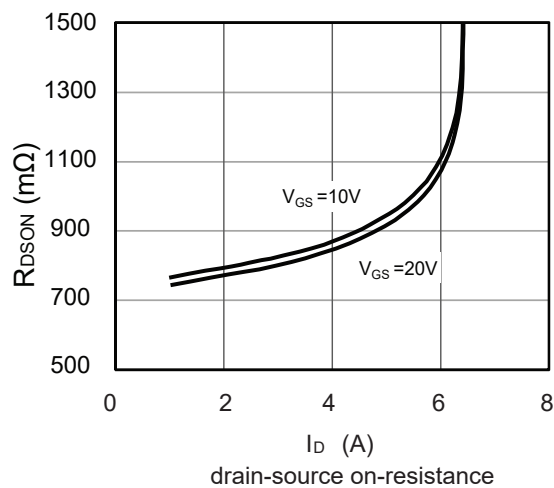
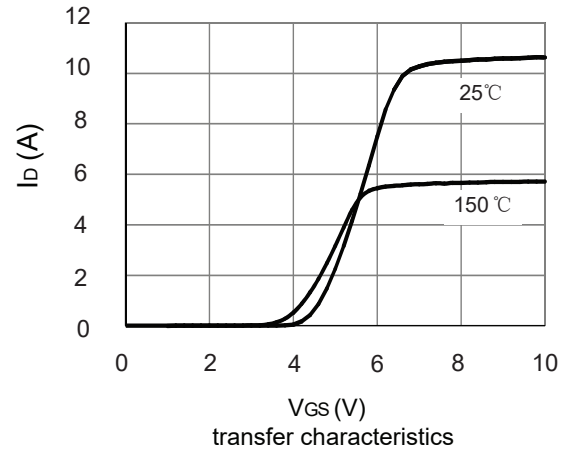
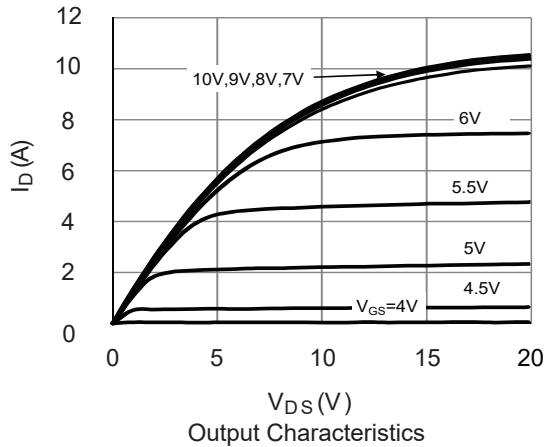
1.The EAS data shows Max. rating . The test condition is V_{DD}=80V,V_{GS}=10V , L=30mH , R_G=30Ω , I_{AS}=2A.

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 withtout notice.Please refer to the latest version of specification.

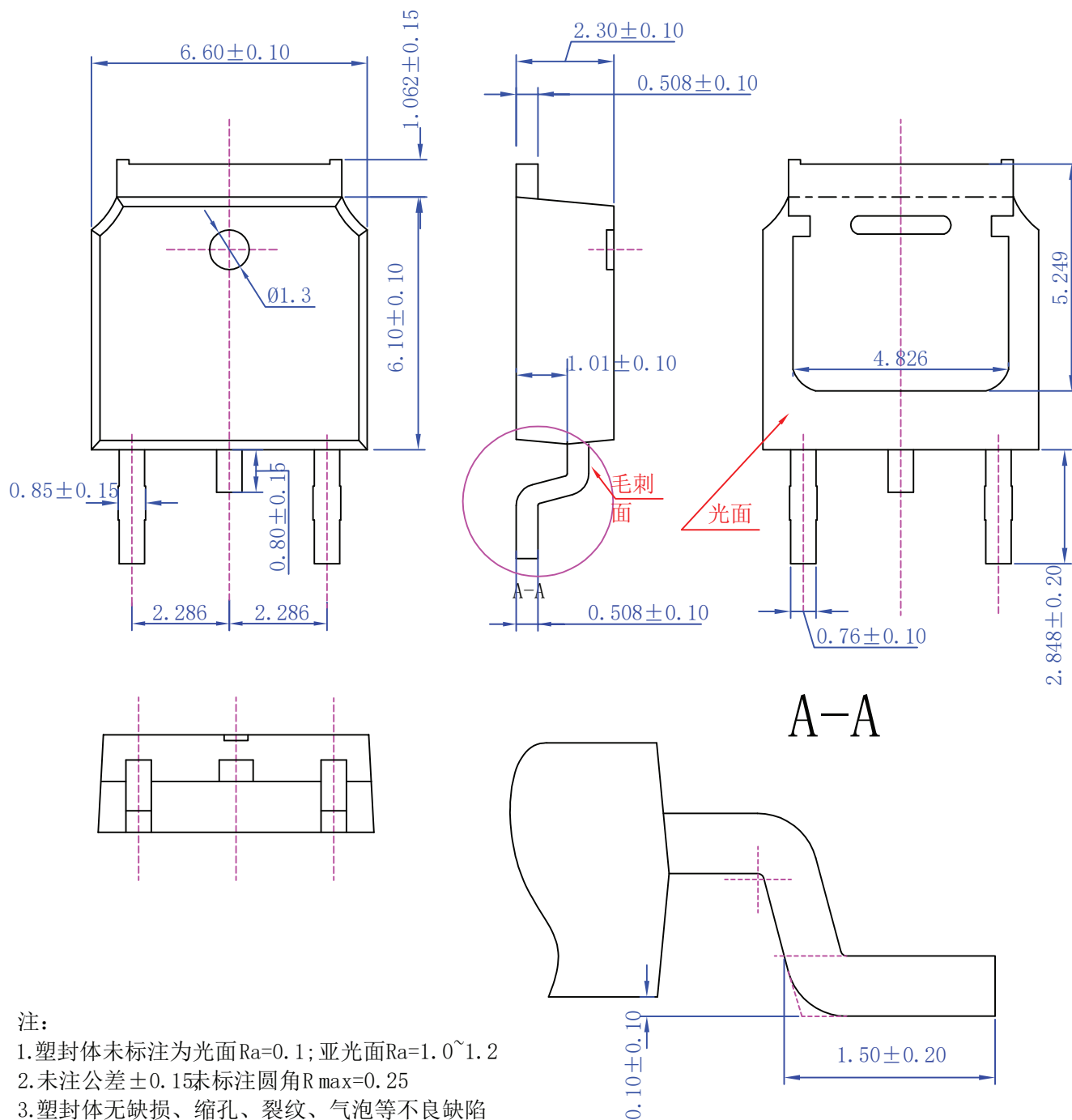
Typical Characteristics



Package Dimension

TO-252

Unit :mm



CMD70R900/CMU70R900



700V, 830mΩ typ., 6A N-Channel Super Junction Power MOSFET

Package Dimension

TO-251A

Unit :mm

