

CMD90R900D/CMU90R900D

900V, 0.81Ω typ., 6A N-Channel Super Junction Power MOSFET

General Description

The 90R900D is power MOSFET using Cmos's advanced super junction technology that can realize very low on resistance and gate charge. It will provide much high efficiency by using optimized charge coupling technology. These user friendly devices give an advantage of Low EMI to designers as well as low switching loss.

Features

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

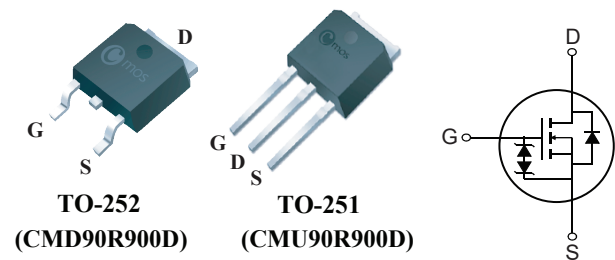
Product Summary

BVDSS	R _{DS(on)} max.	ID
900V	900mΩ	6A

Applications

- Adapter
- Switching Applications
- PFC Power Supply Stages

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	900	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	6	A
I _D @T _C =100°C	Continuous Drain Current	3.8	A
I _{DM}	Pulsed Drain Current	24	A
EAS	Single Pulse Avalanche Energy ¹	183	mJ
P _D @T _C =25°C	Total Power Dissipation	65	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	---	62.5	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	1.92	°C/W

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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	900	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =4A	---	810	900	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2.5	---	4.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =800V, V _{GS} =0V	---	---	1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±10	μA
g _{fs}	Forward Transconductance	V _{DS} =30V, I _D =4A	---	4.5	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	25	---	Ω
Q _g	Total Gate Charge	I _D =6A	---	13	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =640V	---	4.3	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	5.3	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =400V	---	18	---	ns
T _r	Rise Time	V _{GS} =10V	---	30	---	
T _{d(off)}	Turn-Off Delay Time	R _G =25Ω	---	85	---	
T _f	Fall Time	I _D =6A	---	20	---	
C _{iss}	Input Capacitance	V _{DS} =100V, V _{GS} =0V, f=1MHz	---	500	---	pF
C _{oss}	Output Capacitance		---	21	---	
C _{rss}	Reverse Transfer Capacitance		---	0.8	---	

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 =8A, T _J =25°C	---	0.90	1.4	V
t _{rr}	Reverse Recovery Time	di/dt = 100A/μs	---	375	---	ns
Q _{rr}	Reverse Recovery Charge	V _{DD} =100V, I _{SD} =6A	---	2.7	---	μC

Note :

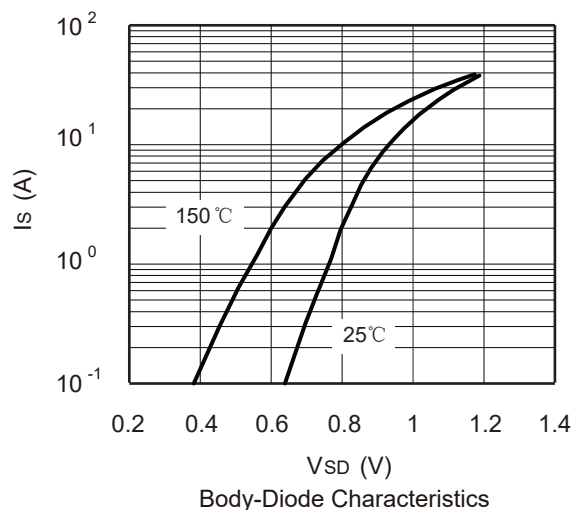
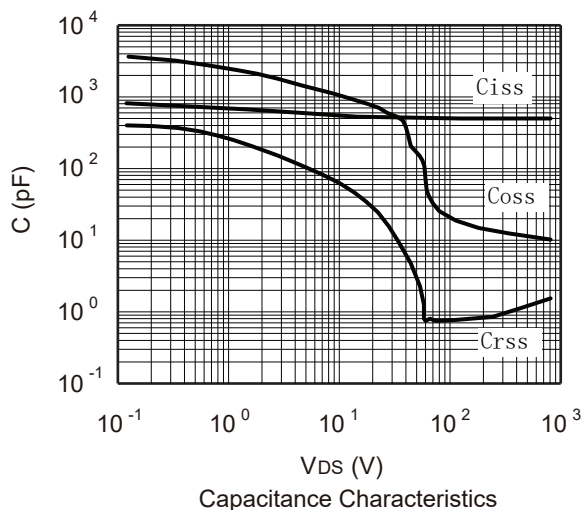
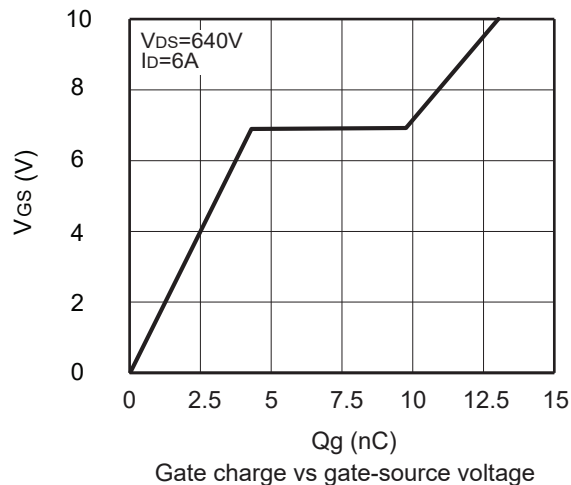
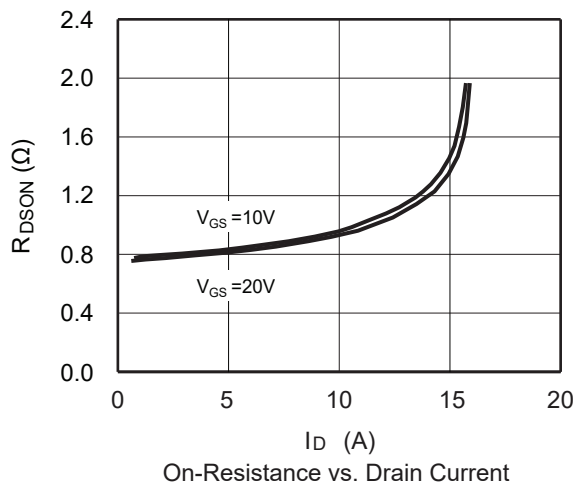
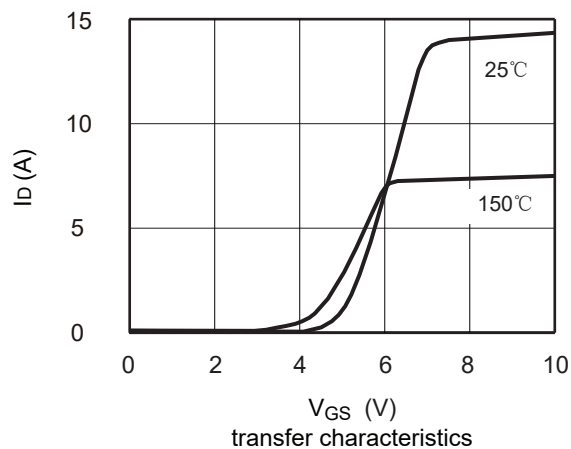
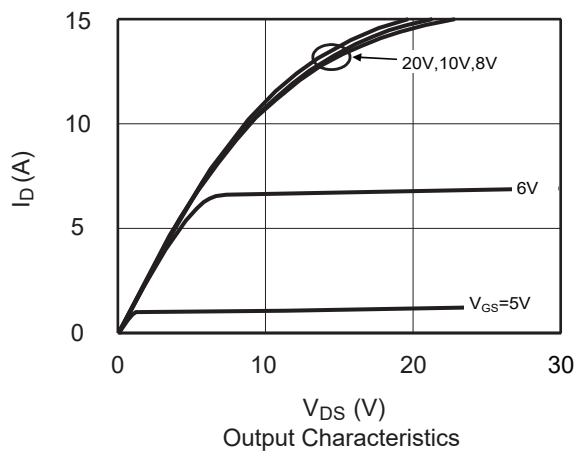
1.The EAS data shows Max. rating . The test condition is V_{DD}=100V, V_{GS}=10V, L=30mH, I_{AS}=3.5A.

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

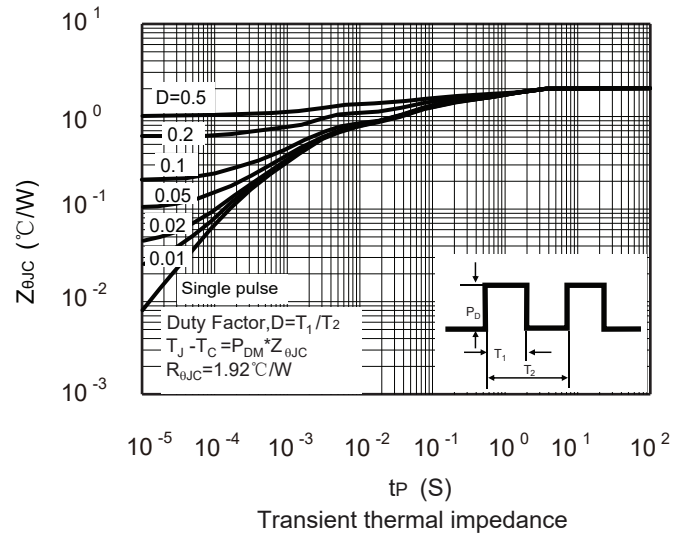
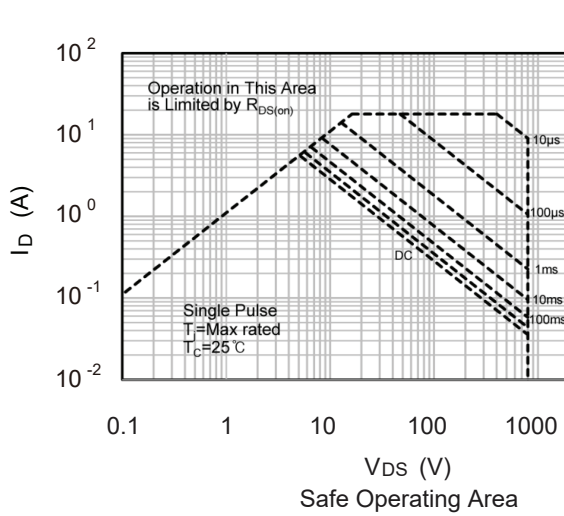
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Cmos reserver the right to improve product design ,functions and reliability wihtout notice.Please refer to the latest version of specification.

Typical Characteristics



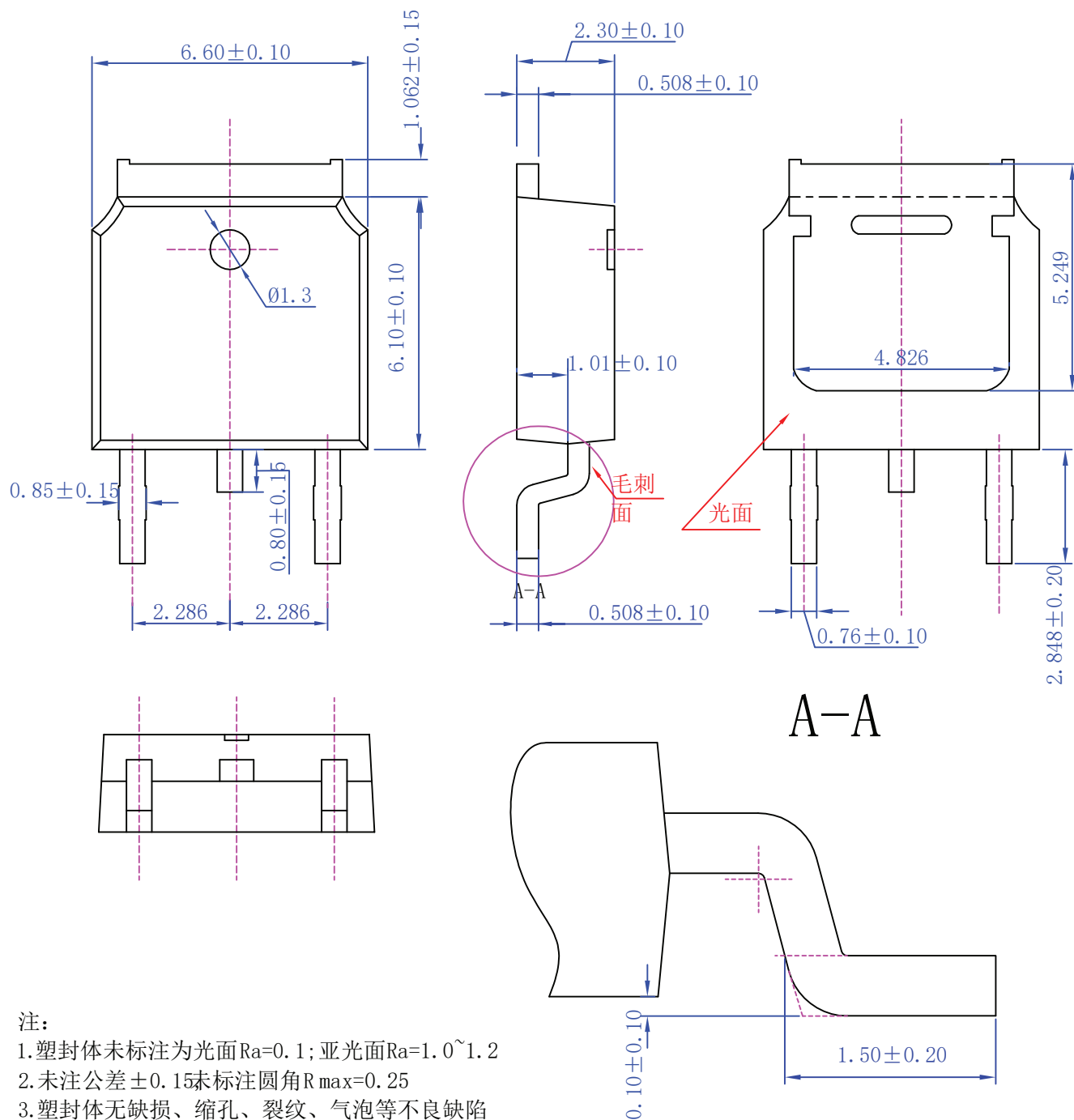
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

