

General Description

The 65R600Q have been fabricated using an advanced high voltage MOSFET process that is designed to deliver high levels of performance and robustness in popular AC-DC applications.

Features

- Fast switching
- 100% avalanche tested
- Improved dv/dt capability
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	650	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	8	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current	32	A
EAS	Single Pulse Avalanche Energy ¹	12	mJ
P_D	Total Power Dissipation	25	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	75	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	5	$^\circ\text{C/W}$

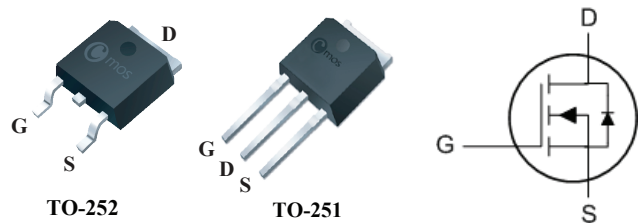
Product Summary

BVDSS	RDSON	ID
650V	0.6Ω	8A

Applications

- DC-DC Converters
- Power switching application

TO-252/251 Pin Configuration



Type	Package	Marking
CMD65R600Q	TO-252	CMD65R600Q
CMU65R600Q	TO-251	CMU65R600Q

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	650	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=4A$	---	---	0.6	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2.0	---	4.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=650V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=30V$, $I_D=4A$	---	6	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	23	---	Ω
Q_g	Total Gate Charge	$I_D=7.3A$	---	14	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=520V$	---	4	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	6	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=325V$, $I_D=7.3A$ $R_G=25\Omega$, $V_{GS}=10V$	---	19	---	ns
T_r	Rise Time		---	34	---	
$T_{d(off)}$	Turn-Off Delay Time		---	81	---	
T_f	Fall Time		---	29	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	550	---	pF
C_{oss}	Output Capacitance		---	640	---	
C_{rss}	Reverse Transfer Capacitance		---	28.6	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	8	A
I_{SM}	Pulsed Source Current		---	---	32	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=8A$, $T_J=25^{\circ}\text{C}$	---	---	1.2	V

Notes:

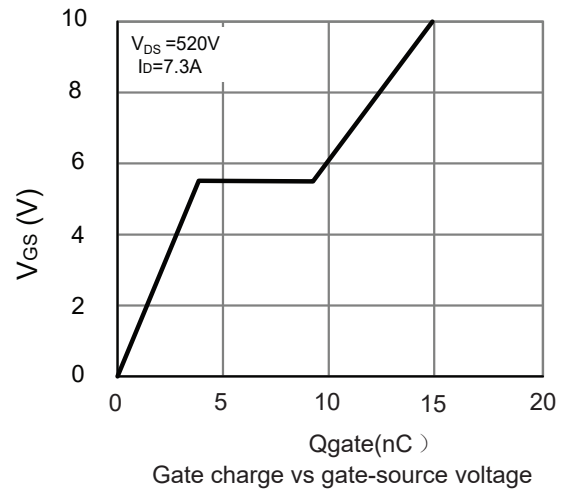
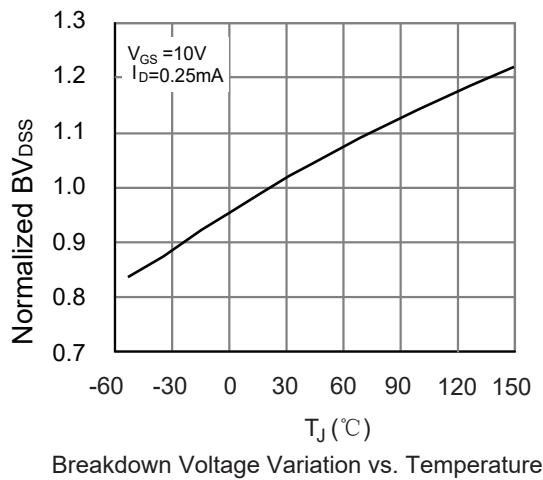
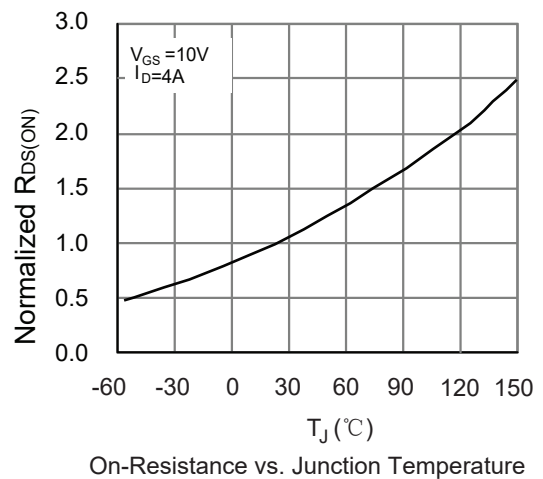
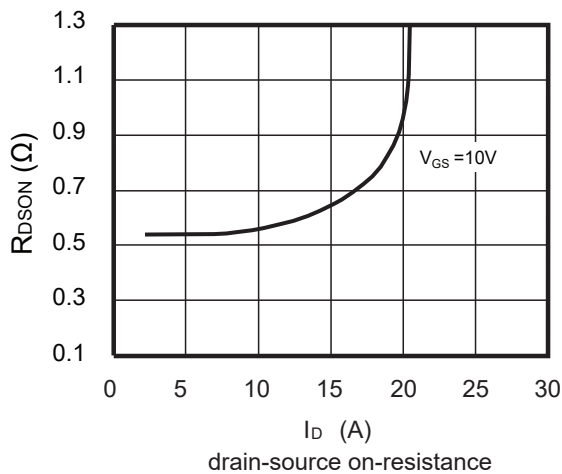
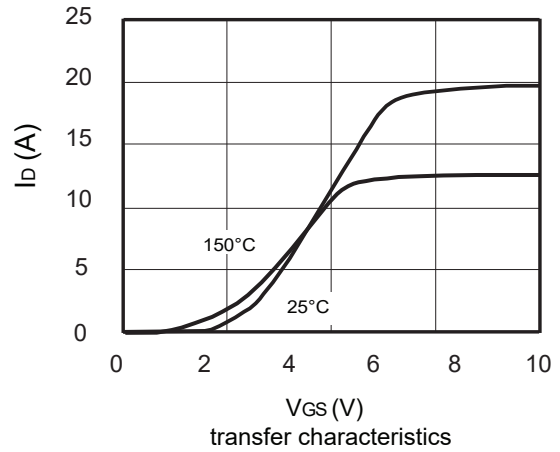
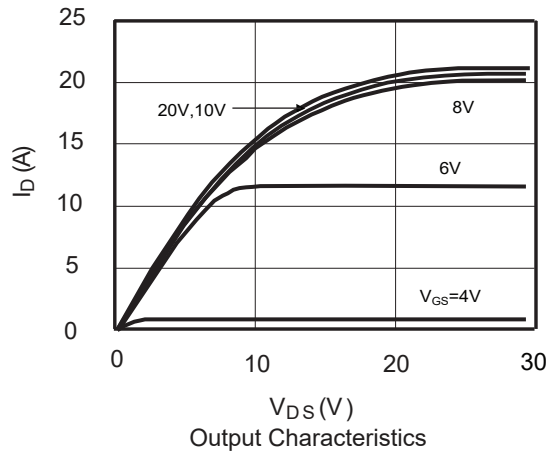
1.The EAS data shows Max. rating .The test condition is $V_{DS}=80V$, $V_{GS}=10V$, $L=5\text{mH}$, $I_{AS}=2.2A$.

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

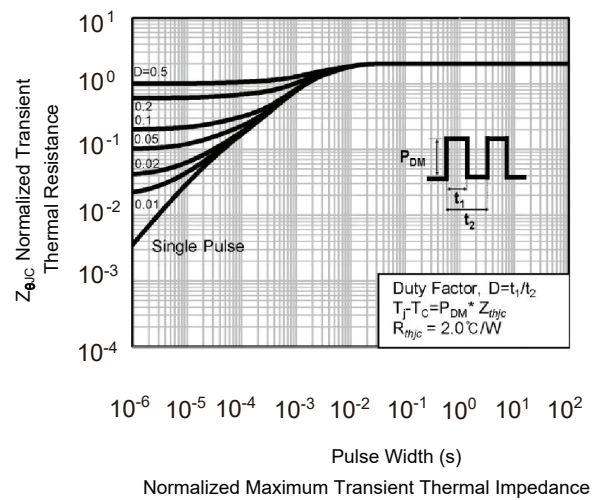
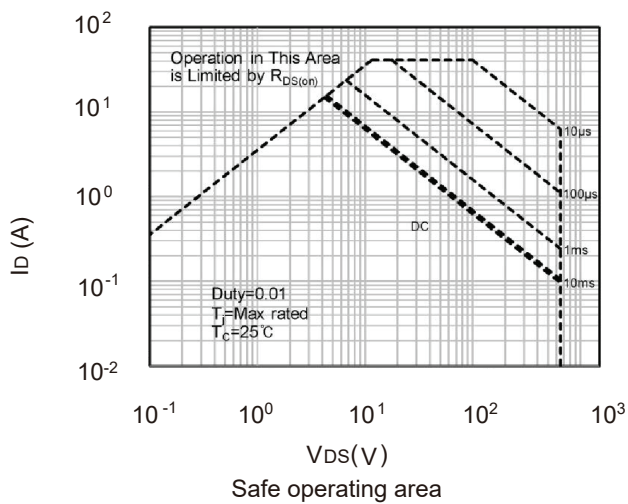
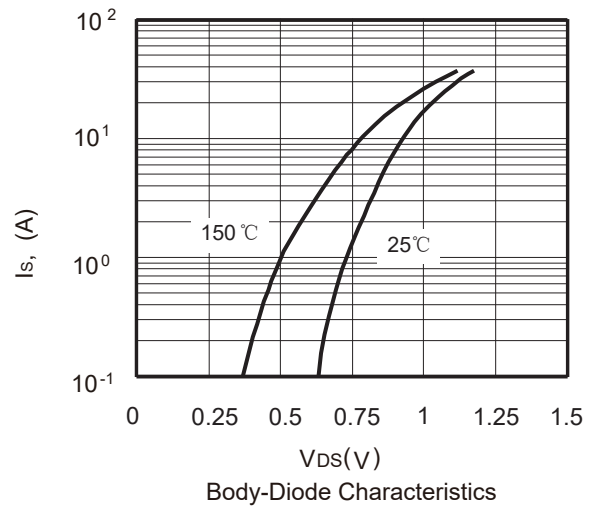
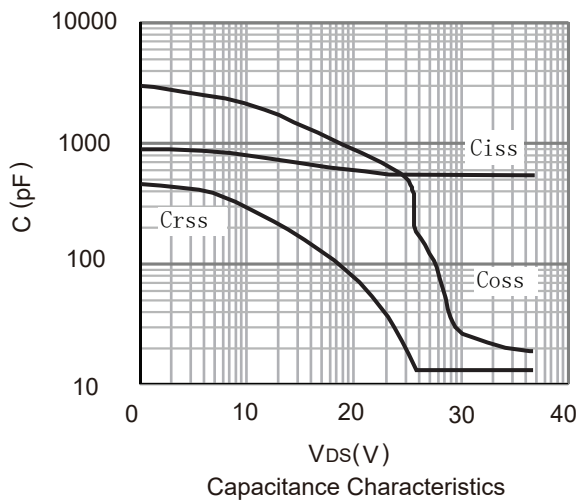
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Cmos reserves the right to improve product design ,functions and reliability without notice.

Typical Characteristics

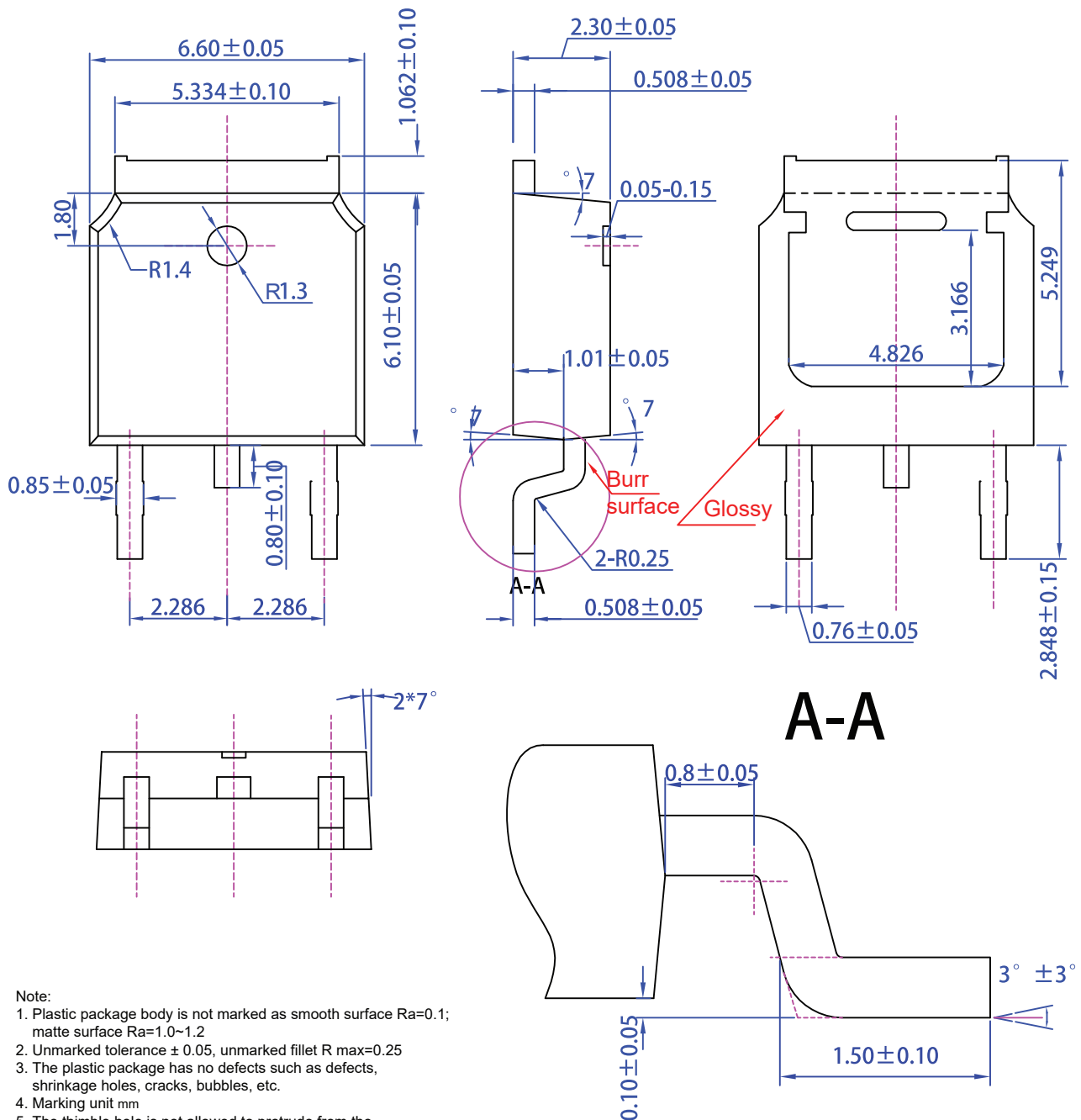


Typical Characteristics



Package Dimension

TO-252



Note:

1. Plastic package body is not marked as smooth surface $Ra=0.1$; matte surface $Ra=1.0\sim 1.2$
2. Unmarked tolerance ± 0.05 , unmarked fillet $R \max=0.25$
3. The plastic package has no defects such as defects, shrinkage holes, cracks, bubbles, etc.
4. Marking unit mm
5. The thimble hole is not allowed to protrude from the surface of the plastic package
6. Dislocation of upper and lower plastic package ≤ 0.05 ; plastic package center and lead Center misalignment of wire frames ≤ 0.05

Part Marking Information

