

General Description

CMSV60R190Q 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

- Fast switching
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	20	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	12	A
I_{DM}	Pulsed Drain Current	60	A
EAS	Single Pulse Avalanche Energy (Note 1)	605	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	140	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	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	75	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.89	$^\circ\text{C/W}$

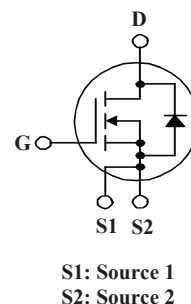
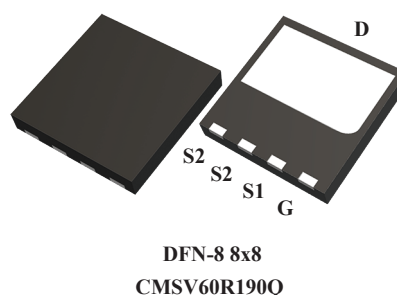
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
600V	0.199Ω	20A

Applications

- Server and Telecom Power Supplies
- Solar Inverters
- Adaptors

DFN-8 8x8 Pin Configuration



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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	600	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=10A$	---	0.18	0.199	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=600V$, $V_{GS}=0V$	---	---	1	μA
		$V_{DS}=600V$, $T_C=150^{\circ}\text{C}$	---	10	---	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=10A$	---	16	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	8.2	---	Ω
Q_g	Total Gate Charge	$I_D=20A$	---	36	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=480V$	---	9	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	14	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=300V$	---	25	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	90	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=20A$	---	212	---	
T_f	Fall Time	$R_G=25\Omega$	---	68	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1460	---	pF
C_{oss}	Output Capacitance		---	1500	---	
C_{rss}	Reverse Transfer Capacitance		---	55	---	

Diode Characteristics

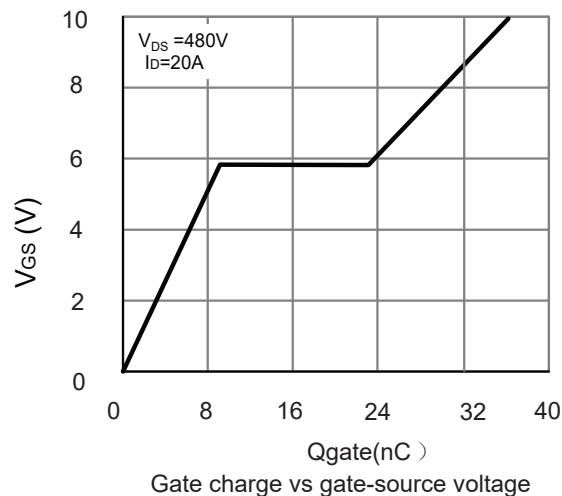
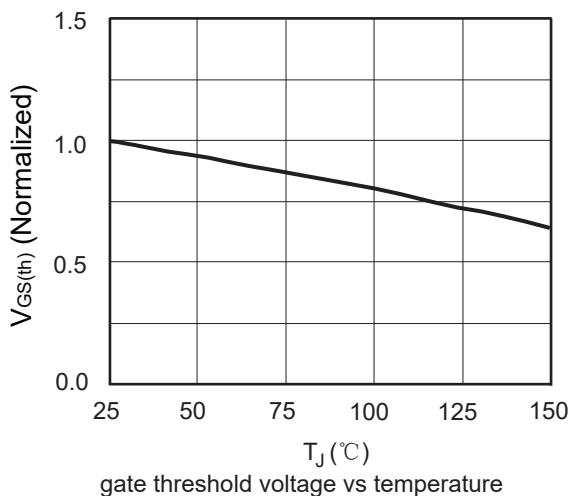
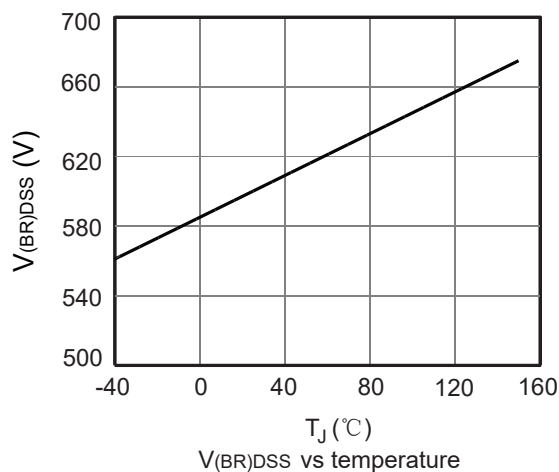
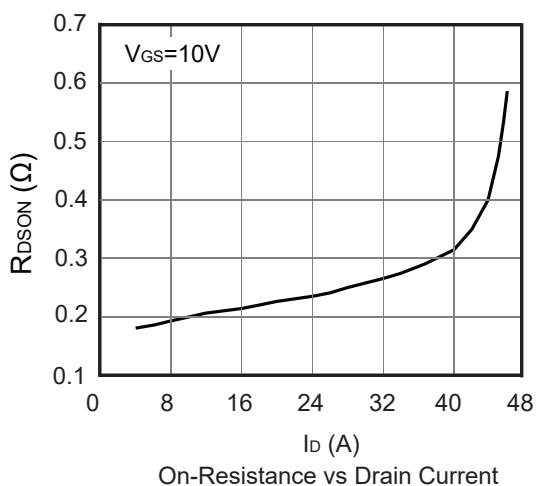
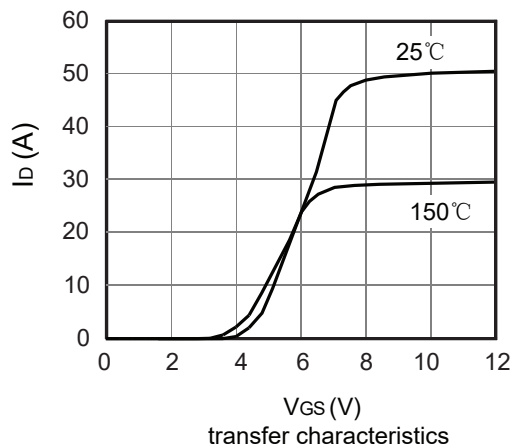
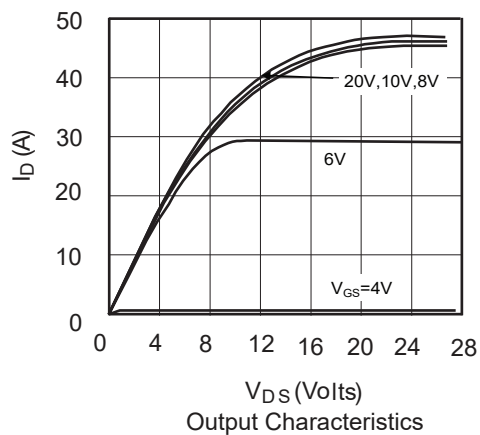
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	20	A
I_{SM}	Pulsed Source Current		---	---	60	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=20A$	---	0.95	1.4	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=50V$, $V_{GS}=10V$, $L=10\text{mH}$, $I_{AS}=11A$.

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 Cmos assumes no liability for customers' product design or applications.
 Cmos reserves the right to improve product design , functions and reliability without notice.

Typical Characteristics



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