

650V, 89mΩ typ., 26A N-Channel Super Junction Power MOSFET

General Description

The CMSV65R105 uses advanced SGT technology to provide excellent RDS(ON). The product portfolio provides all benefits of fast switching superjunction MOSFETs offering better efficiency, reduced gate charge, easy implementation and outstanding reliability.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

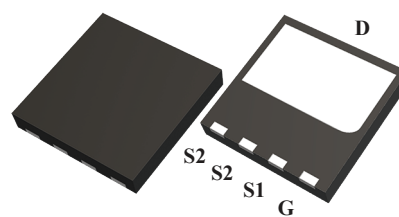
Product Summary

BVDSS	RDS(on) max.	ID
650V	100mΩ	26A

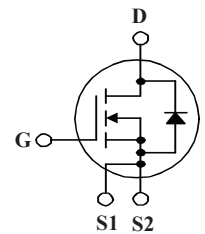
Applications

- Solar
- Power Supply
- Uninterruptible Power Supply

DFN-8 8x8 Pin Configuration



DFN-8 8x8
CMSV65R105



S1: Driver Source
S2: Power Source

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°C	Continuous Drain Current	26	A
I _D @T _C =100°C	Continuous Drain Current	16	A
I _{DM}	Pulsed Drain Current	78	A
EAS	Single Pulse Avalanche Energy ¹	960	mJ
P _D @T _C =25°C	Total Power Dissipation	150	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 _{θJA}	Thermal Resistance Junction-ambient	---	56	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.83	°C/W

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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	$V_{GS}=10V$, $I_D=17A$	---	89	100	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	3.0	---	5.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=650V$, $V_{GS}=0V$	---	---	10	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=15A$	---	15	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1.2	---	Ω
Q_g	Total Gate Charge	$I_D=17A$	---	57	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=480V$	---	19.5	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	30	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=400V$	---	63	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	106	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=27\Omega$	---	132	---	
T_f	Fall Time	$I_D=17A$	---	30	---	
C_{iss}	Input Capacitance	$V_{DS}=40V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	2050	---	pF
C_{oss}	Output Capacitance		---	1450	---	
C_{rss}	Reverse Transfer Capacitance		---	3	---	

Diode Characteristics

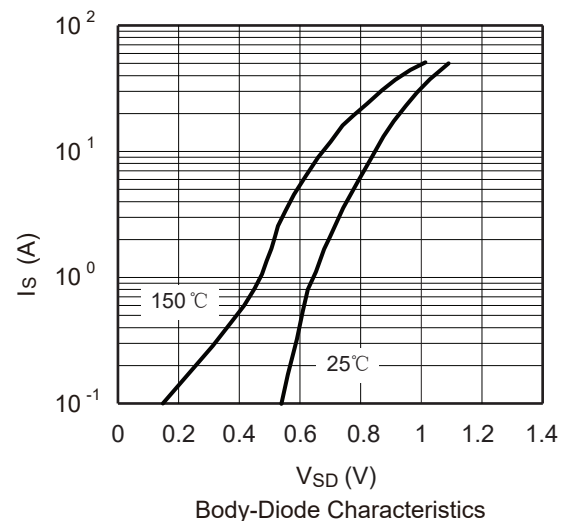
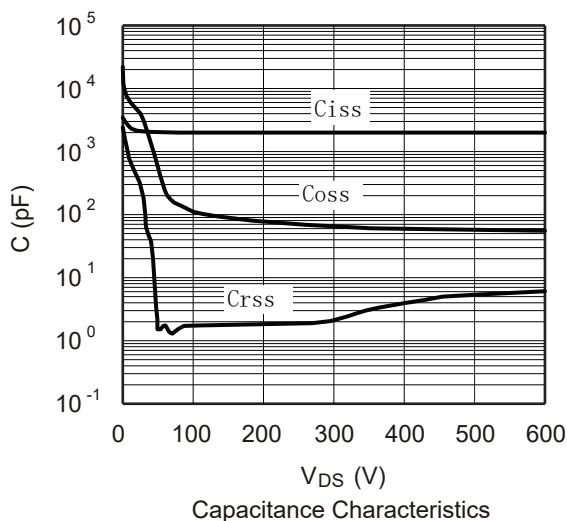
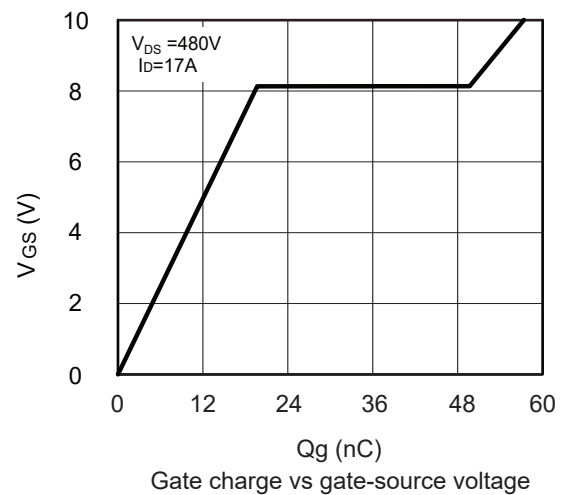
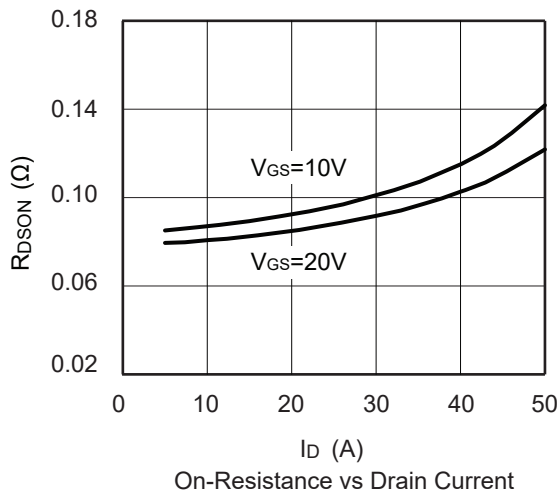
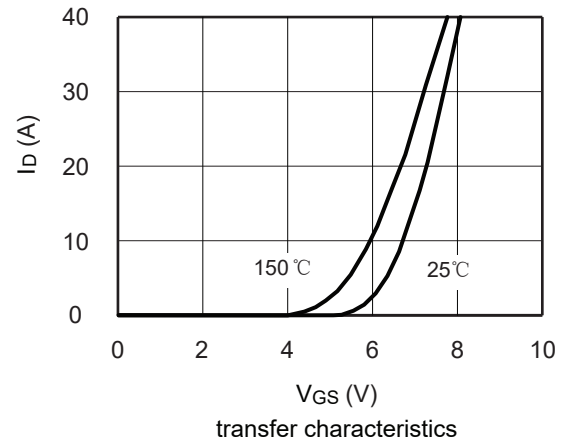
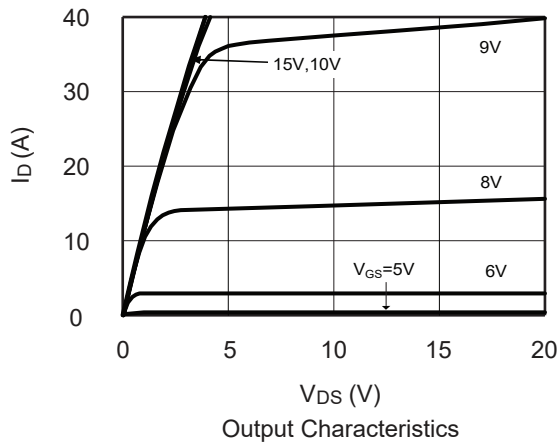
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	26	A
I_{SM}	Pulsed Source Current		---	---	78	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=17A$, $T_J=25^{\circ}\text{C}$	---	0.89	1.4	V

Note :

1. The EAS data shows Max. rating . The test condition is $V_{DD}=100V$, $V_{GS}=10V$, $L=30\text{mH}$, $I_{AS}=8A$.

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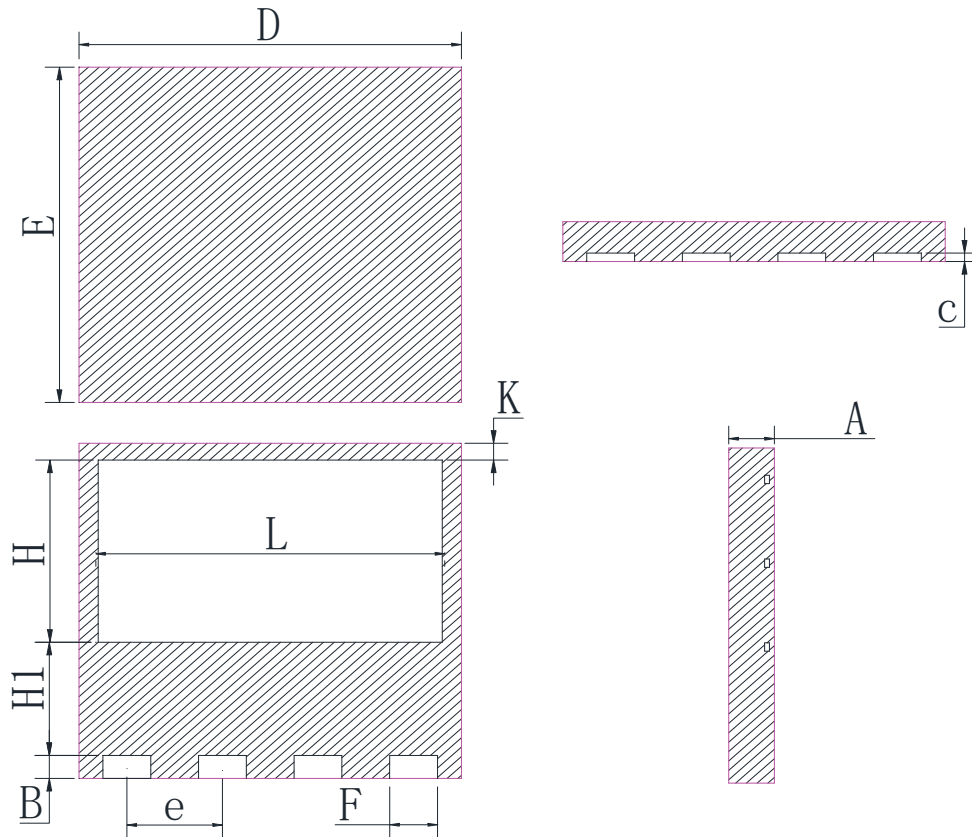
Typical Characteristics



Package Dimension

DFN-8 8x8

Unit :mm



Symbol	Min	Typ	Max
A	0.90	0.95	1.00
B	0.45	0.55	0.65
C	0.153	0.203	0.253
D	7.90	8.00	8.10
E	7.90	8.00	8.10
e	1.90	2.00	2.10
F	0.90	1.00	1.10
H	4.20	4.35	4.45
H1	2.60	2.70	2.80
K	0.30	0.40	0.50
L	7.10	7.20	7.30