CMSA65R280Q

N-Channel Super Junction Power MOSFET

General Description

The 65R280Q 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.

Product Summary

BVDSS	RDSON	ID
650V	0.3Ω	14A

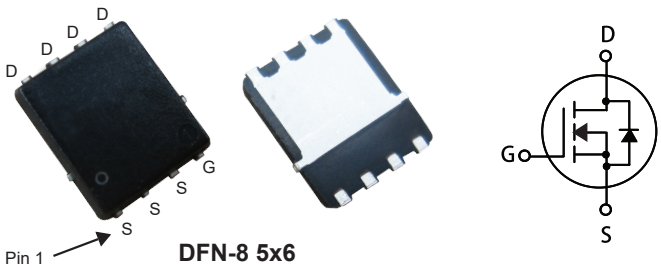
Applications

- LCD & PDP TV
- Adaptor
- UPS

Features

- Low On-Resistance
- 100% avalanche tested
- ROHS compliant

DFN-8 5x6 Pin Configuration



DFN-8 5x6

Type	Package	Marking
CMSA65R280Q	DFN-8 5*6	CMSA65R280Q

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	14	A
I_D@T_C=100°C	Continuous Drain Current	11	A
I_{DM}	Pulsed Drain Current	56	A
EAS	Single Pulse Avalanche Energy[1]	360	mJ
P_D@T_C=25°C	Total Power Dissipation	57	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	59	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	2.2	°C/W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	650	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=6A	---	---	0.3	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D = 250μA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=650V , V_{GS}=0V , T_J=25℃	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±30V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=20V, I_D=6A	---	10	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	23	---	Ω
Q_g	Total Gate Charge	V_{DS}=520V, V_{GS}=10V , I_D=14A	---	30	---	nC
Q_{gs}	Gate-Source Charge		---	7.1	---	
Q_{gd}	Gate-Drain Charge		---	10	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=325V , R_G=25Ω I_D =14A V_{GS} =10V	---	25	---	ns
T_r	Rise Time		---	60	---	
$T_{d(off)}$	Turn-Off Delay Time		---	150	---	
T_f	Fall Time		---	52	---	
C_{iss}	Input Capacitance	V_{DS}=25V ,V_{GS}=0V , f=1MHz	---	1100	---	pF
C_{oss}	Output Capacitance		---	1200	---	
C_{rss}	Reverse Transfer Capacitance		---	70	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	14	A
I_{SM}	Pulsed Source Current		---	---	56	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=12A , T_J=25℃	---	---	1.2	V

Notes:

1.The EAS data shows Max. rating .The test condition is V_{DS}=50V , V_{GS}=10V , L=20mH , I_{AS}=6A.

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