

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.

Features

- Fast switching
- 100% avalanche tested
- RoHS Compliant

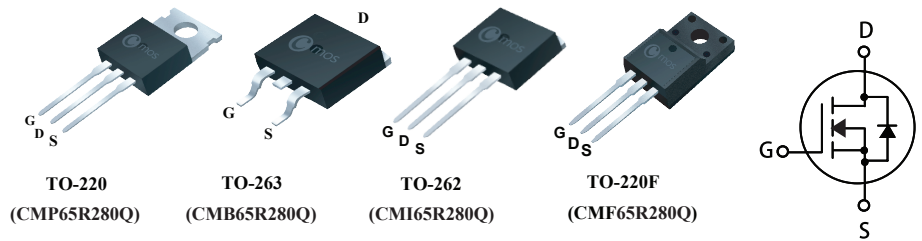
Product Summary

BVDSS	RDSON	ID
650V	0.3Ω	14A

Applications

- Charger
- Adaptor
- Power Supply

TO-220/263/262/220F Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	220/263/262	220F	Units
V_{DS}	Drain-Source Voltage	650		V
V_{GS}	Gate-Source Voltage	±30		V
$I_D@T_C=25^\circ C$	Continuous Drain Current	14	14*	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	9	9*	A
I_{DM}	Pulsed Drain Current (Note 1)	56	56*	A
EAS	Single Pulse Avalanche Energy (Note 2)	400		mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	105	35	W
T_{STG}	Storage Temperature Range	-55 to 150		°C
T_J	Operating Junction Temperature Range	150		°C

Thermal Data

Symbol	Parameter	220/263/262	220F	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (Note 3,4)	62	80	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	1.2	3.9	°C/W

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	650	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =4.4A	---	---	0.3	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2	---	4	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =650V , V _{GS} =0V , T _J = 25°C	---	---	1	uA
		V _{DS} =650V , V _{GS} =0V , T _J = 150°C	---	10	---	
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±30V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =20V , I _D =4.4A	---	9.5	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	21	---	Ω
Q _g	Total Gate Charge	I _D =14A	---	30	---	nC
Q _{gs}	Gate-Source Charge	V _{DD} =520V	---	7.1	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	10	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =325V V _{GS} =10V I _D =14A R _G =25Ω	---	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	---	1050	---	pF
C _{oss}	Output Capacitance		---	1200	---	
C _{rss}	Reverse Transfer Capacitance		---	50	---	

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 =13.8A	---	---	1.2	V

Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. The EAS data shows Max. rating .The test condition is V_{DS}=50V , V_{GS}=10V , L=20mH , I_{AS}=6.4A.
3. The value of R_{θJA} is measured with the device in a still air environment with T_A=25°C.
4. The R_{θJA} is the sum of the thermal impedance from junction to case R_{θJC} and case to ambient.

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