

### General Description

The series of devices use advanced super junction technology and design to provide excellent RDS(ON) with low gate charge.

This super junction MOSFET fits the industry's AC-DC SMPS requirements for PFC, AC/DC power conversion, and industrial power applications.

### Features

- 11A, 650V, R DS (on) = 0.37Ω @VGS = 10 V
- Low On-Resistance
- 100% avalanche tested
- Low on-resistance and low conduction losses
- ROHS compliant

### Absolute Maximum Ratings

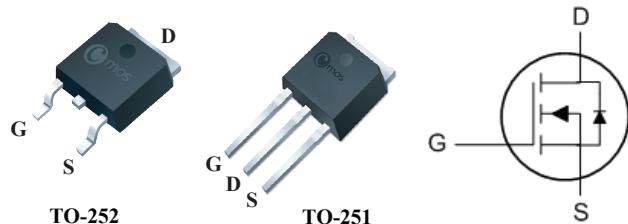
### Product Summary

BVDSS	RDSON	ID
650V	0.38Ω	11A

### Applications

- Power factor correction ( PFC)
- Switched mode power supplies(SMPS)
- Uninterruptible Power Supply ( UPS)

### TO252 / TO251 Pin Configuration



Type	Package	Marking
CMD65R380Q	TO-252	CMD65R380Q
CMU65R380Q	TO-251	CMU65R380Q

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	650	V
V <sub>GS</sub>	Gate-Source Voltage	±30	V
I <sub>D</sub> @T <sub>C</sub> =25°C	Continuous Drain Current	11	A
I <sub>D</sub> @T <sub>C</sub> =100°C	Continuous Drain Current	9	A
I <sub>DM</sub>	Pulsed Drain Current	33	A
EAS	Single Pulse Avalanche Energy	215	mJ
P <sub>D</sub> @T <sub>C</sub> =25°C	Total Power Dissipation	85	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 175	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 175	°C

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R <sub>θJA</sub>	Thermal Resistance Junction-ambient	---	62	°C/W
R <sub>θJC</sub>	Thermal Resistance Junction -Case	---	1.5	°C/W

**Electrical Characteristics (T<sub>J</sub>=25 °C, unless otherwise noted)**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	650	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =20A	---	---	0.38	Ω
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2	---	4	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =650V, V <sub>GS</sub> =0V, T <sub>J</sub> =25°C	---	---	1	uA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =30V, I <sub>D</sub> =4A	---	8	---	S
R <sub>g</sub>	Gate Resistance	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f=1MHz	---	23	---	Ω
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =520V, V <sub>GS</sub> =10V, I <sub>D</sub> =10.6A	---	21	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	8	---	
Q <sub>gd</sub>	Gate-Drain Charge		---	6	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DS</sub> =325V, R <sub>G</sub> =25Ω	---	20	---	ns
T <sub>r</sub>	Rise Time		---	39	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	109	---	
T <sub>f</sub>	Fall Time		---	37	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =50V, V <sub>GS</sub> =0V, f=1MHz	---	780	---	pF
C <sub>oss</sub>	Output Capacitance		---	896	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	38.7	---	

**Diode Characteristics**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I <sub>S</sub>	Continuous Source Current	V <sub>G</sub> =V <sub>D</sub> =0V, Force Current	---	---	11	A
I <sub>SM</sub>	Pulsed Source Current		---	---	33	A
V <sub>SD</sub>	Diode Forward Voltage	V <sub>GS</sub> =0V, I <sub>S</sub> =20A, T <sub>J</sub> =25°C	---	---	1.2	V

Note :

This product has been designed and qualified for the consumer market.  
 Cmos assumes no liability for customers' product design or applications.  
 Cmos reserves the right to improve product design, functions and reliability without notice.