

### General Description

The 150N85 is a N-channel Power MOSFET. It has specifically been designed to minimize input capacitance and gate charge. The device is therefore suitable in advanced high-efficiency switching applications.

### Features

- Advanced Process Technology
- Ultra Low On-Resistance
- Dynamic dv/dt Rating
- 175°C Operating Temperature
- Fast Switching
- Fully Avalanche Rated
- Lead-Free

### Absolute Maximum Ratings

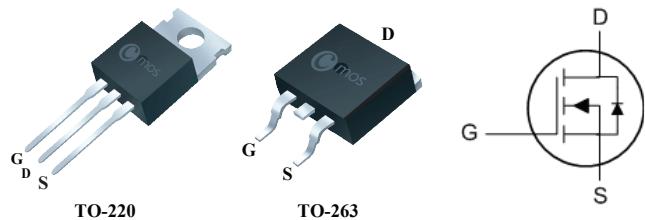
### Product Summary

BVDSS	RDS(on)	ID
85V	6.7mΩ	150A

### Applications

- LED power controller
- DC-DC & DC-AC converters
- High current, High speed switching
- Solenoid and relay drivers
- Motor control, Audio amplifiers

### TO-220/263 Pin Configuration



Type	Package	Marking
CMP150N85	TO-220	CMP150N85
CMB150N85	TO-263	CMB150N85

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	85	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D @ T_c = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	150	A
$I_D @ T_c = 100^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	120	A
$I_{DM}$	Pulsed Drain Current	450	A
EAS	Single Pulse Avalanche Energy	800	mJ
$P_D @ T_c = 25^\circ C$	Power Dissipation	300	W
$T_{STG}$	Storage Temperature Range	-55 to 175	°C
$T_J$	Operating Junction Temperature Range	-55 to 175	°C

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient (PCB mount)	---	65	°C/W
$R_{\theta JC}$	Junction-to-Case	---	0.45	°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> =250uA	85	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =20A	---	---	6.7	mΩ
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	2	---	4	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =85V, V <sub>GS</sub> =0V	---	---	1	uA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =10V, I <sub>D</sub> =20A	---	23	---	S
R <sub>g</sub>	Gate Resistance	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f=1MHz	---	2.0	---	Ω
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =20A	---	106	---	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DD</sub> =50V	---	28	---	
Q <sub>gd</sub>	Gate-Drain Charge	V <sub>GS</sub> =10V	---	41	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =50V	---	27	---	ns
T <sub>r</sub>	Rise Time	R <sub>L</sub> =2.5Ω	---	21	---	
T <sub>d(off)</sub>	Turn-Off Delay Time	R <sub>G</sub> =3Ω	---	43	---	
T <sub>f</sub>	Fall Time	V <sub>GS</sub> =10V	---	14	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =50V, V <sub>GS</sub> =0V, f=1MHz	---	3500	---	pF
C <sub>oss</sub>	Output Capacitance		---	400	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	130	---	

**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	---	---	150	A
I <sub>SM</sub>	Pulsed Source Current		---	---	450	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.