

### General Description

CMF5N65 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.

### Features

- RDS(ON)<3Ω @ VGS=10V
- 100% avalanche tested
- RoHS Compliant
- Low Power Loss by High Speed Switching and Low On-Resistance

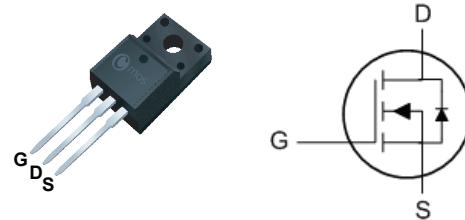
### Product Summary

BVDSS	RDSON	ID
650V	3Ω	5A

### Applications

- Charger
- Adaptor
- Power Supply
- Electrodeless lamp

### TO-220F Pin Configuration



TO-220F

Type	Package	Marking
CMF5N65	TO-220F	CMF5N65

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	650	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D @ T_C = 25^\circ\text{C}$	Continuous Drain Current	5	A
$I_D @ T_C = 100^\circ\text{C}$	Continuous Drain Current	4	A
$I_{DM}$	Pulsed Drain Current	20	A
EAS	Single Pulse Avalanche Energy	360	mJ
$P_D @ T_C = 25^\circ\text{C}$	Total Power Dissipation	35	W
$T_{STG}$	Storage Temperature Range	-55 to 150	°C
$T_J$	Operating Junction Temperature Range	-55 to 150	°C

### Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62.5	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	3.5	°C/W

Electrical Characteristics ( $T_J=25^\circ\text{C}$  , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$\text{BV}_{\text{DSS}}$	Drain-Source Breakdown Voltage	$\text{V}_{\text{GS}}=0\text{V}$ , $\text{I}_{\text{D}}=250\text{uA}$	650	---	---	V
$\text{R}_{\text{DS(ON)}}$	Static Drain-Source On-Resistance	$\text{V}_{\text{GS}}=10\text{V}$ , $\text{I}_{\text{D}}=2.5\text{A}$	---	---	3	$\Omega$
$\text{V}_{\text{GS(th)}}$	Gate Threshold Voltage	$\text{V}_{\text{GS}}=\text{V}_{\text{DS}}$ , $\text{I}_{\text{D}}=250\text{uA}$	3	---	5	V
$\text{I}_{\text{DSS}}$	Drain-Source Leakage Current	$\text{V}_{\text{DS}}=650\text{V}$ , $\text{V}_{\text{GS}}=0\text{V}$	---	---	1	$\text{uA}$
$\text{I}_{\text{GSS}}$	Gate-Source Leakage Current	$\text{V}_{\text{GS}}=\pm 30\text{V}$ , $\text{V}_{\text{DS}}=0\text{V}$	---	---	$\pm 100$	$\text{nA}$
$\text{g}_{\text{fs}}$	Forward Transconductance	$\text{V}_{\text{DS}}=15\text{V}$ , $\text{I}_{\text{D}}=2.5\text{A}$	---	5	---	S
$\text{Q}_{\text{g}}$	Total Gate Charge	$\text{I}_{\text{D}}=4.5\text{A}$	---	15	---	nC
$\text{Q}_{\text{gs}}$	Gate-Source Charge	$\text{V}_{\text{DS}}=520\text{V}$	---	2	---	
$\text{Q}_{\text{gd}}$	Gate-Drain Charge	$\text{V}_{\text{GS}}=10\text{V}$	---	7	---	
$\text{T}_{\text{d(on)}}$	Turn-On Delay Time	$\text{V}_{\text{GS}}=10\text{V}$	---	11	---	ns
$\text{T}_{\text{r}}$	Rise Time	$\text{V}_{\text{DD}}=325\text{V}$	---	41	---	
$\text{T}_{\text{d(off)}}$	Turn-Off Delay Time	$\text{I}_{\text{D}}=4.5\text{A}$	---	40	---	
$\text{T}_{\text{f}}$	Fall Time	$\text{R}_{\text{G}}=25\Omega$	---	51	---	
$\text{C}_{\text{iss}}$	Input Capacitance	$\text{V}_{\text{DS}}=25\text{V}$ , $\text{V}_{\text{GS}}=0\text{V}$ , $f=1\text{MHz}$	---	730	---	pF
$\text{C}_{\text{oss}}$	Output Capacitance		---	55	---	
$\text{C}_{\text{rss}}$	Reverse Transfer Capacitance		---	7	---	

## Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$\text{I}_{\text{s}}$	Continuous Source Current	$\text{V}_{\text{G}}=\text{V}_{\text{D}}=0\text{V}$ , Force Current	---	---	5	A
$\text{I}_{\text{SM}}$	Pulsed Source Current		---	---	20	A
$\text{V}_{\text{SD}}$	Diode Forward Voltage	$\text{V}_{\text{GS}}=0\text{V}$ , $\text{I}_{\text{s}}=5\text{A}$	---	---	1.2	V

Notes:

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.