

CMD60N68K/CMU60N68K

68V N-Channel MOSFET

General Description

The 60N68K uses advanced technology and design to provide excellent $R_{DS(ON)}$. This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- Low On-Resistance
- 100% Avalanche Tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current ¹	60	A
$I_D@T_C=100^\circ C$	Continuous Drain Current ¹	48	A
I_{DM}	Pulsed Drain Current ²	180	A
EAS	Single Pulse Avalanche Energy ³	312	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	110	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	40	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	1.36	$^\circ C/W$

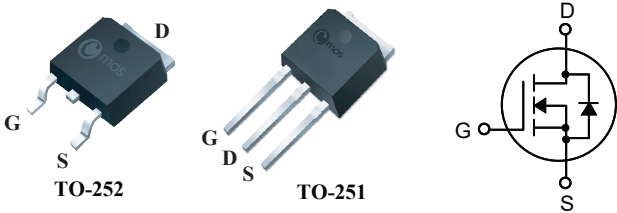
Product Summary

BVDSS	$R_{DS(ON)}$	ID
68V	11m Ω	60A

Applications

- LED controller
- Power Supplies
- DC-DC Converters

TO-252/251 Pin Configuration



Type	Package	Marking
CMD60N68K	TO-252	CMD60N68K
CMU60N68K	TO-251	CMU60N68K

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 =250μA	68	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =20A	---	---	11	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	2	---	4	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =60V , V _{GS} =0V , T _J =25°C	---	---	1	μA
		V _{DS} =60V , V _{GS} =0V , T _J =125°C	---	---	100	
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V , I _D =20A	---	20	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	2.0	---	Ω
Q _g	Total Gate Charge	V _{DS} =48V , V _{GS} =10V , I _D =65A	---	36	---	nC
Q _{gs}	Gate-Source Charge		---	16	---	
Q _{gd}	Gate-Drain Charge		---	10	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =27V , V _{GS} =10V , R _{GEN} =4.7Ω I _D =1A	---	21	---	ns
T _r	Rise Time		---	51	---	
T _{d(off)}	Turn-Off Delay Time		---	37	---	
T _f	Fall Time		---	12	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	3000	---	pF
C _{oss}	Output Capacitance		---	500	---	
C _{rss}	Reverse Transfer Capacitance		---	25	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ¹	V _G =V _D =0V , Force Current	---	---	60	A
I _{SM}	Pulsed Source Current ²		---	---	180	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =20A , T _J =25°C	---	---	1.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
- 3.The EAS data shows Max. rating . The test condition is V_{DD}=20V,V_{GS}=10V,L=1.0mH,I_{AS}=25A.

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