

General Description

The 80N08 uses advanced trench technology and design to provide excellent RDS(ON). This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- N-channel-Enhancement mode
- Lower On-resistance
- 100% Avalanche Tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	80	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	56	A
I_{DM}	Pulsed Drain Current	240	A
EAS	Single Pulse Avalanche Energy ¹	850	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	130	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	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	50	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	1.2	$^\circ C/W$

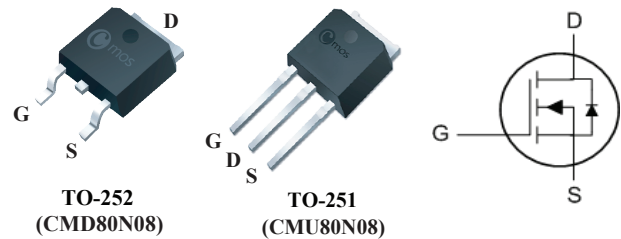
Product Summary

BVDSS	RDSON	ID
80V	7m Ω	80A

Applications

- DC-DC converters
- Power switching application
- Ideal for high-frequency switching and synchronous rectification

TO-252/251 Pin Configuration



N-Channel Enhancement Mode Field Effect Transistor

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	80	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=20A$	---	6	7	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=80V, V_{GS}=0V, T_J=25^{\circ}\text{C}$	---	---	1	uA
		$V_{DS}=80V, V_{GS}=0V, T_J=100^{\circ}\text{C}$	---	---	100	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=20A$	---	18	---	S
R_g	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	2.2	---	Ω
Q_g	Total Gate Charge	$I_D=20A$ $V_{DD}=40V$ $V_{GS}=10V$	---	40	---	nC
Q_{gs}	Gate-Source Charge		---	4.5	---	
Q_{gd}	Gate-Drain Charge		---	8	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=40V$ $R_G=10\Omega$ $V_{GS}=10V$ $I_D=20A$	---	10	---	ns
T_r	Rise Time		---	6.5	---	
$T_{d(off)}$	Turn-Off Delay Time		---	30	---	
T_f	Fall Time		---	10	---	
C_{iss}	Input Capacitance	$V_{DS}=40V, V_{GS}=0V, f=1\text{MHz}$	---	7000	---	pF
C_{oss}	Output Capacitance		---	250	---	
C_{rss}	Reverse Transfer Capacitance		---	13	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	80	A
I_{SM}	Pulsed Source Current		---	---	240	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=20A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=20V, V_{GS}=10V, L=1\text{mH}, I_{AS}=41A$.

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