

General Description

The 044N10 is N-Channel 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

- Minimize input capacitance and gate charge
- 100% avalanche tested
- Low On-Resistance

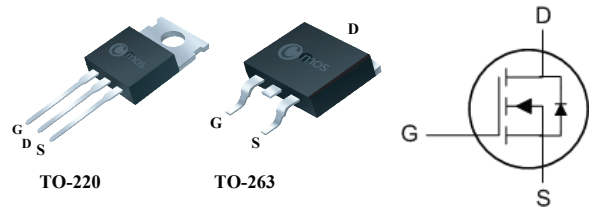
Product Summary

BVDSS	RDSON	ID
100V	4.5mΩ	160A

Applications

- Motor Control
- DC-DC converters
- Switching applications

TO-220/263 Pin Configuration



Type	Package	Marking
CMP044N10	TO-220	CMP044N10
CMB044N10	TO-263	CMB044N10

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	160	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	115	A
I_{DM}	Pulsed Drain Current	640	A
EAS	Single Pulse Avalanche Energy	1330	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	260	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.0	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=20A$	---	---	4.5	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	$V_{DS}=100V, V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=20A$	---	32	---	S
R_g	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	4.2	---	Ω
Q_g	Total Gate Charge	$I_D=100A$	---	49	---	nC
Q_{gs}	Gate-Source Charge	$V_{DD}=50V$	---	20	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	10	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=50V$	---	30	---	ns
T_r	Rise Time	$I_D=100A$	---	50	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=6\Omega$	---	42	---	
T_f	Fall Time	$V_{GS}=10V$	---	14	---	
C_{iss}	Input Capacitance	$V_{DS}=50V, V_{GS}=0V, f=1\text{MHz}$	---	6700	---	pF
C_{oss}	Output Capacitance		---	2300	---	
C_{rss}	Reverse Transfer Capacitance		---	19	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V, \text{Force Current}$	---	---	160	A
I_{SM}	Pulsed Source Current		---	---	640	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=50A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

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