

General Description

The 044N10B uses advanced SGT technology to provide excellent $R_{DS(ON)}$. This device is ideal for high-frequency switching and synchronous rectification.

Features

- Low On-Resistance
- Fast Switching
- 100% avalanche tested
- RoHS Compliant

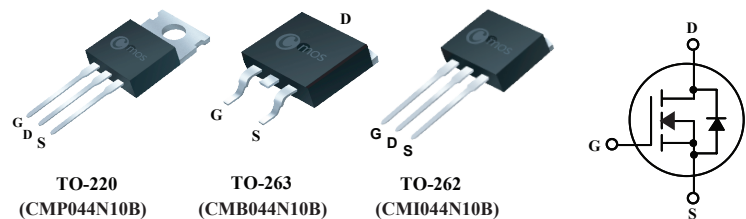
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
100V	4.2mΩ	120A

Applications

- Motor Control
- Synchronous Rectification for power supply
- Ideal for boost converters

TO-220/263/262 Pin Configuration



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(Package limit)	120	A
$I_D@T_C=100^\circ C$	Continuous Drain Current(Silicon limit)	108	A
I_{DM}	Pulsed Drain Current	480	A
EAS	Single Pulse Avalanche Energy ¹	1458	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	227	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.55	°C/W

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 =250uA	100	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =50A	---	3.5	4.2	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2	---	4	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =80V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =25A	---	32	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	2.5	---	Ω
Q _g	Total Gate Charge	I _D =20A	---	74	---	nC
Q _{gs}	Gate-Source Charge	V _{DD} =50V	---	24	---	
Q _{gd}	Gate-Drain Charge	V _{GS} = 10V	---	18	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} = 50V	---	25	---	ns
T _r	Rise Time	I _D =60A	---	47	---	
T _{d(off)}	Turn-Off Delay Time	R _G =1.6Ω	---	50	---	
T _f	Fall Time	V _{GS} =10V	---	15	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	7900	---	pF
C _{oss}	Output Capacitance		---	2400	---	
C _{rss}	Reverse Transfer Capacitance		---	260	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	120	A
I _{SM}	Pulsed Source Current		---	---	480	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =40A , T _J =25°C	---	0.84	1.3	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=50V,V_{GS}=10V , L=1mH , I_{AS}=54A.

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Typical Characteristics

