CMP26N50/CMB26N50/CMI26N50/CMF26N50

500V, 185mΩ typ., 26A N-Channel MOSFET

General Description

These Power MOSFETs are produced using Cmos's proprietary, planar stripe, DMOS technology.These devices are well suited for high efficient switching mode power supplies and active power factor correction.

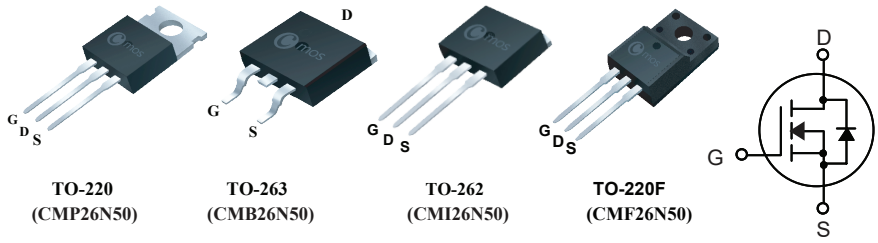
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
500V	0.21Ω	26A

Applications

- Switch Mode Power Supply
- Uninterruptible Power Supply

TO-220/263/262/220F Pin Configuration



Features

- 100% avalanche tested
- Improved dv/dt capability
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	220/263/262	220F	Units
V_{DS}	Drain-Source Voltage	500		V
V_{GS}	Gate-Source Voltage	±30		V
I_D@T_C=25℃	Continuous Drain Current	26	26*	A
I_D@T_C=100℃	Continuous Drain Current	18	18*	A
I_{DM}	Pulsed Drain Current (Note 1)	104	104*	A
EAS	Single Pulse Avalanche Energy (Note 2)	2311		mJ
P_D@T_C=25℃	Total Power Dissipation	320	50	W
T_{STG}	Storage Temperature Range	-55 to 150		℃
T_J	Operating Junction Temperature Range	-55 to 150		℃

* Drain current limited by maximum junction temperature.

Thermal Data

Symbol	Parameter	220/263/262	220F	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient Max.	62.5	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case Max.	0.39	2.5	℃/W

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Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	500	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=13A	---	185	210	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250μA	2.5	---	4.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=500V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±30V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D =13A	---	23	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1.1	---	Ω
Q_g	Total Gate Charge	V_{DS} =400V , I_D=26A V_{GS}=10V (Note 3)	---	82	---	nC
Q_{gs}	Gate-Source Charge		---	23	---	
Q_{gd}	Gate-Drain Charge		---	34	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=250V , I_D=26A R_{GS}=25Ω (Note 3)	---	47	---	ns
T_r	Rise Time		---	70	---	
$T_{d(off)}$	Turn-Off Delay Time		---	200	---	
T_f	Fall Time		---	70	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	3000	---	pF
C_{oss}	Output Capacitance		---	360	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

Diode Characteristics

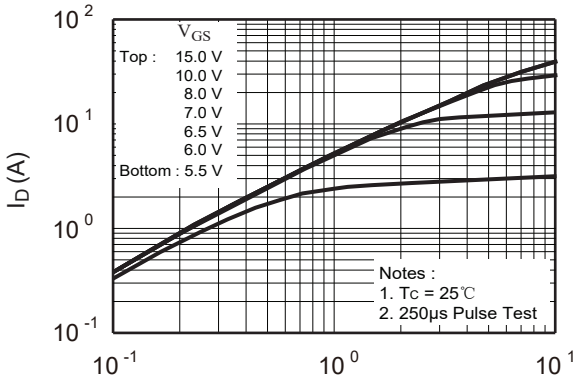
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	26	A
I_{SM}	Pulsed Source Current		---	---	104	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=26A ,T_J=25℃	---	0.93	1.4	V
t_{rr}	Reverse Recovery Time	di/dt = 100A/μs T_j =25℃ , I_f =26A (Note 3)	---	530	---	ns
Q_{rr}	Reverse Recovery Charge		---	8.2	---	μC

Note :

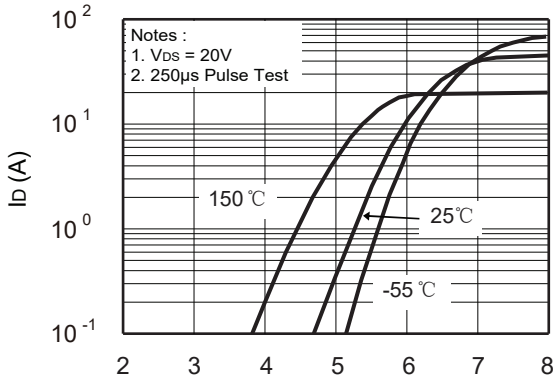
1. Repetitive rating: Pulse width limited by maximum junction temperature.
2. The EAS data shows Max. rating . The test condition is V_{DD}=80V , V_{GS}=10V , L=10mH , I_{AS} =21.5A.
3. Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2%.

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Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.Please refer to the latest version of specification.

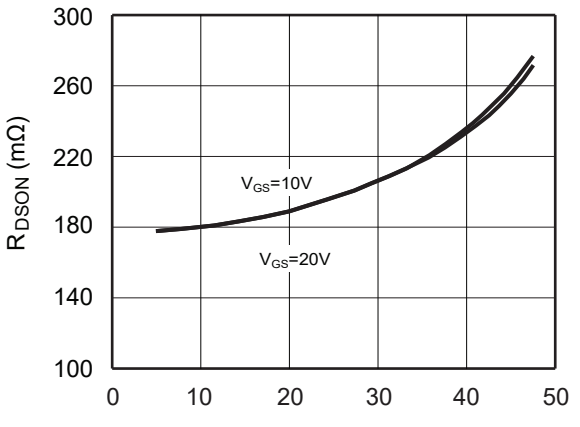
Typical Characteristics



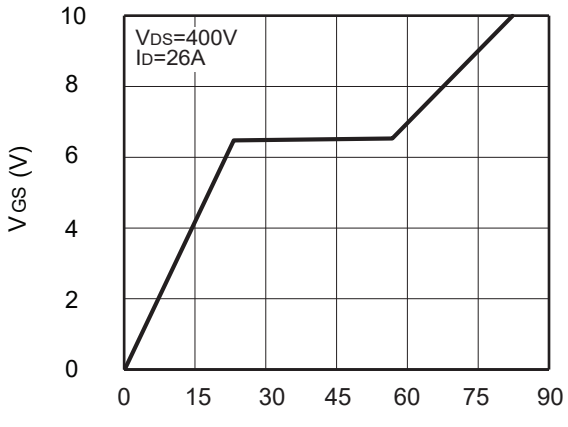
Output Characteristics



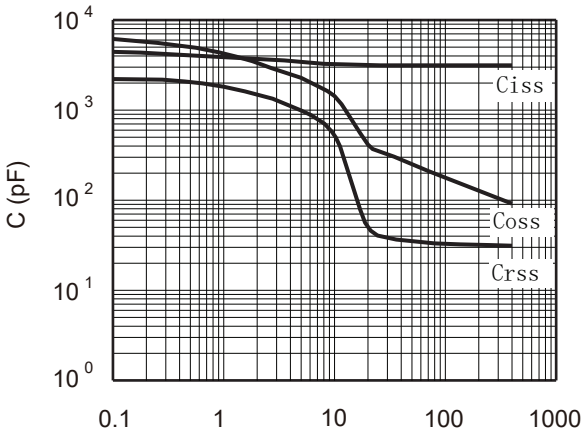
transfer characteristics



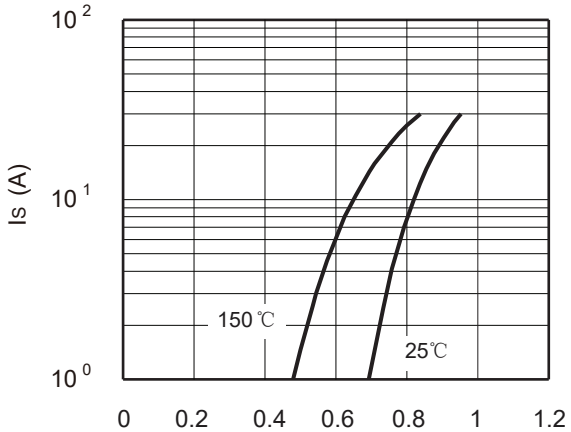
On-Resistance vs. Drain Current



Gate charge vs gate-source voltage



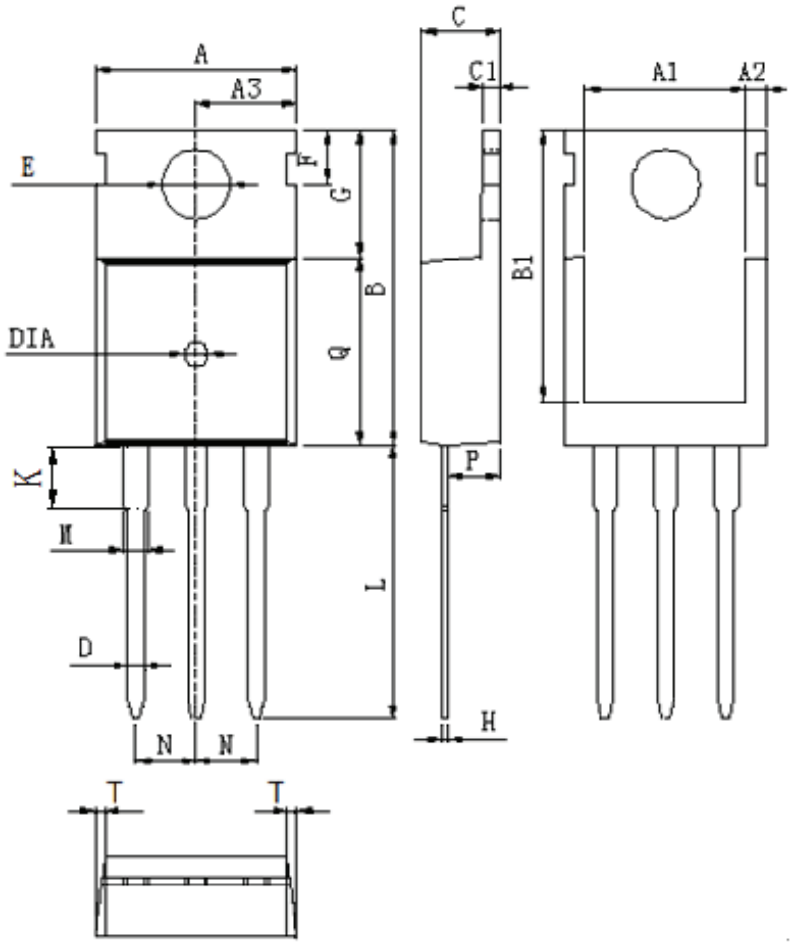
Capacitance Characteristics



Body-Diode Characteristics

Package Dimension

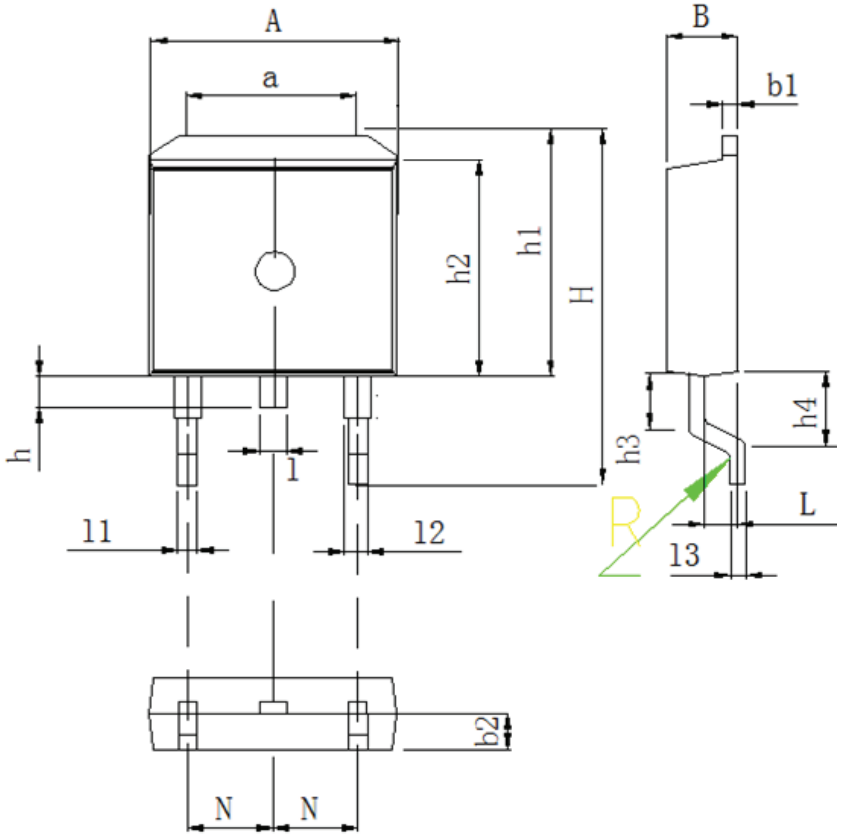
TO-220 Unit :mm



DIM	MILLIMETERS
A	10.0±0.3
A1	8.64±0.2
A2	1.15±0.1
A3	5.0±0.2
B	15.8±0.4
B1	13.2±0.3
C	4.56±0.1
C1	1.3±0.2
D	0.8±0.2
E	3.6±0.2
F	2.95±0.3
G	6.5±0.3
H	0.5±0.1
K	3.1±0.2
L	13.2±0.4
M	1.25±0.1
N	2.54±0.1
P	2.4±0.3
Q	9.0±0.3
T	W:0.35
DIA	⊙1.5(deep 0.2)

Package Dimension

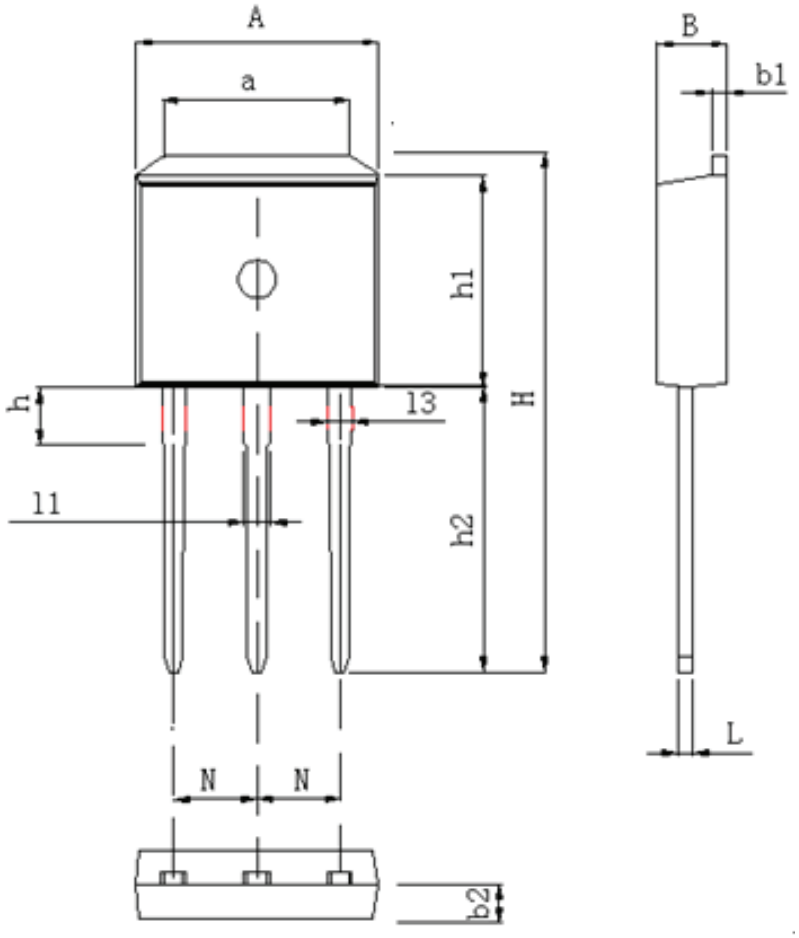
TO-263 Unit :mm



DIM	MILLIMETERS
A	9.8±0.2
a	7.4±0.4
B	4.5±0.2
b1	1.3±0.05
b2	2.4±0.2
H	15.5±0.3
h	1.54±0.2
h1	10.5±0.2
h2	9.2±0.1
h3	1.54±0.2
h4	2.7±0.2
L	2.4±0.2
l	1.3±0.1
l1	0.8±0.1
l2	1.3±0.1
l3	0.5±0.1
N	2.54±0.1
R	0.5R±0.05

Package Dimension

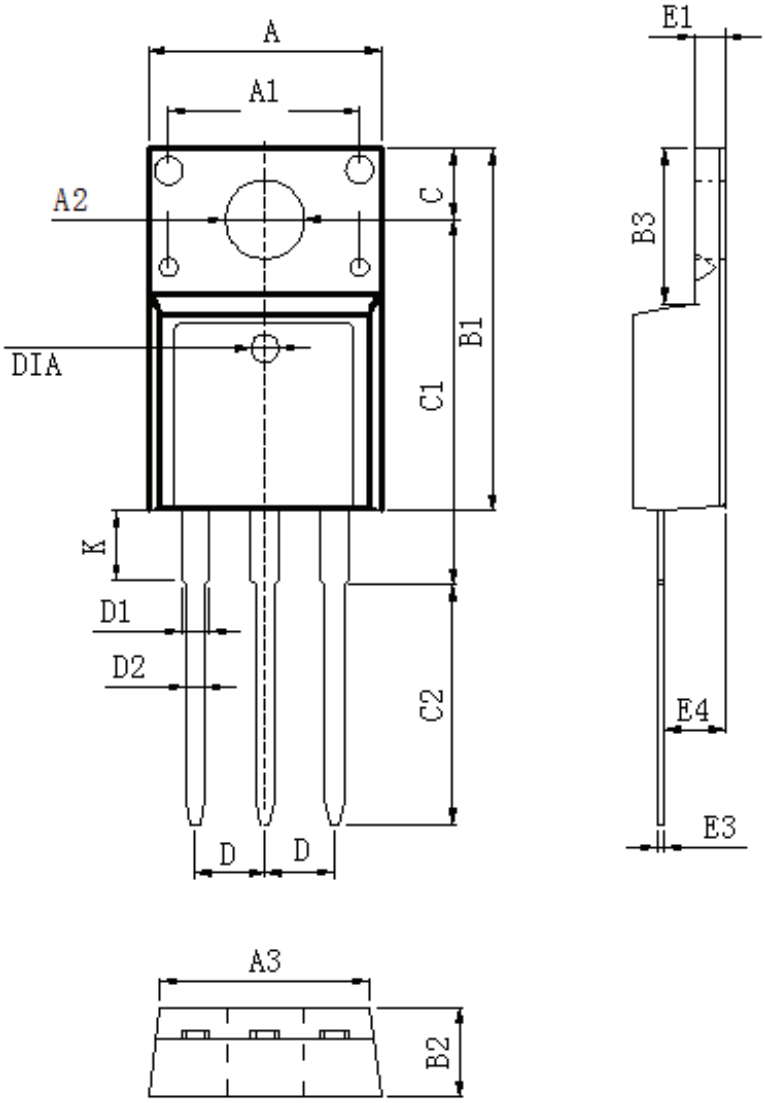
TO-262 Unit :mm



DIM	MILLIMETERS
A	9.98±0.2
a	7.4±0.4
B	4.5±0.2
b1	1.3±0.05
b2	2.4±0.2
H	23.9±0.3
h	3.1±0.2
h1	9.16±0.2
h2	13.2±0.2
L	0.5±0.1
l1	1.3±0.1
l2	0.8±0.1
N	2.45±0.1

Package Dimension

TO-220F Unit :mm



DIM	MILLIMETERS
A	10.16±0.3
A1	7.00±0.1
A2	3.3±0.2
A3	9.5±0.2
B1	15.87±0.3
B2	4.7±0.2
B3	6.68±0.4
C	3.3±0.2
C1	12.57±0.3
C2	10.02±0.5
D	2.54±0.05
D1	1.28±0.2
D2	0.8±0.1
K	3.1±0.3
E1	2.54±0.1
E3	0.5±0.1
E4	2.76±0.2
DIA	⊙1.5(deep 0.2)