

General Description

These N-Channel enhancement mode power field effect transistors are produced using Cmos's proprietary, planar stripe, DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance.

These devices are well suited for high efficiency switching DC/DC converters, switch mode power supplies, DC-AC converters for uninterrupted power supplies and motor controls.

Product Summary

BVDSS	R _{DS(on)} max.	ID
200V	95mΩ	32A

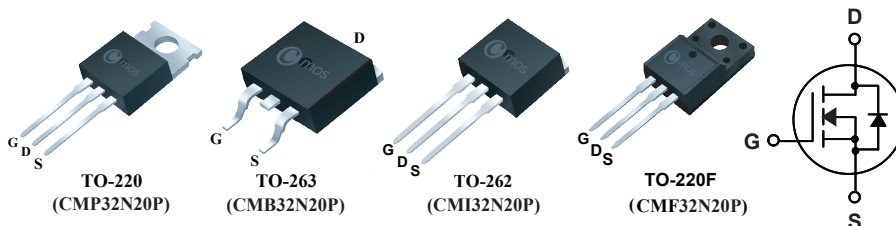
Applications

- UPS
- Inverter
- Lighting

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

Features

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



Absolute Maximum Ratings

Symbol	Parameter	220/263/262	220F	Units
V _{DS}	Drain-Source Voltage	200		V
V _{GS}	Gate-Source Voltage	±20		V
I _D @T _C =25°C	Continuous Drain Current	32	32*	A
I _D @T _C =100°C	Continuous Drain Current	22	22*	A
I _{DM}	Pulsed Drain Current ¹	128	128*	A
EAS	Single Pulse Avalanche Energy ²	1000		mJ
P _D @T _C =25°C	Total Power Dissipation	160	50	W
T _{STG}	Storage Temperature Range	-55 to 150		°C
T _J	Operating Junction Temperature Range	-55 to 150		°C

* Drain current limited by maximum junction temperature

Thermal Data

Symbol	Parameter	220/263/262	220F	Unit
R _{θJA}	Thermal Resistance Junction-ambient	62.5	62.5	°C/W
R _{θJC}	Thermal Resistance Junction-case	0.78	2.50	°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	200	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =16A	---	73	95	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} =200V , V _{GS} =0V	---	---	1	uA
		V _{DS} =160V , V _{GS} =0V , T _C =125°C	---	---	100	
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =15V , I _D =15A	---	20	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	1	---	Ω
Q _g	Total Gate Charge	I _D =32 A	---	83	---	nC
Q _{gs}	Gate-Source Charge	V _{DD} =160 V	---	11	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10 V	---	45	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =100 V I _D =32A R _G =25Ω	---	25	---	ns
T _r	Rise Time		---	270	---	
T _{d(off)}	Turn-Off Delay Time		---	245	---	
T _f	Fall Time		---	210	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	2400	---	pF
C _{oss}	Output Capacitance		---	300	---	
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	---	---	32	A
I _{SM}	Pulsed Source Current		---	---	128	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =16A , T _J =25°C	---	0.85	1.4	V
t _{rr}	Reverse Recovery Time	di _r /dt = 100A/μs	---	200	---	ns
Q _{rr}	Reverse Recovery Charge	V _{GS} =0V , I _{SD} =32A	---	1.4	---	μC

Note :

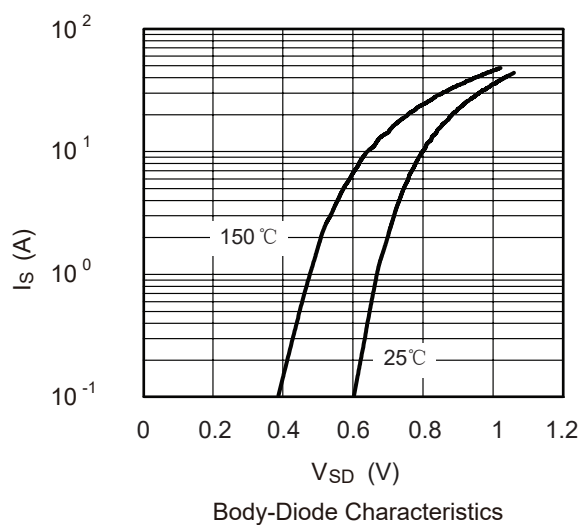
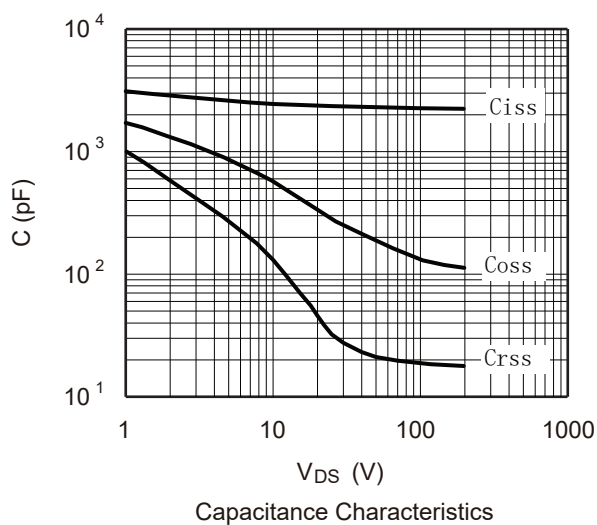
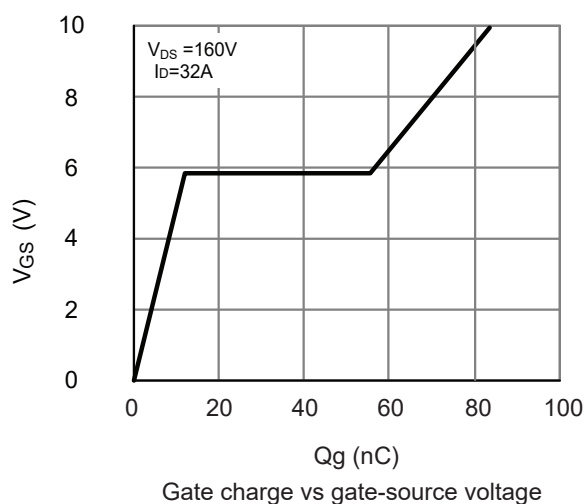
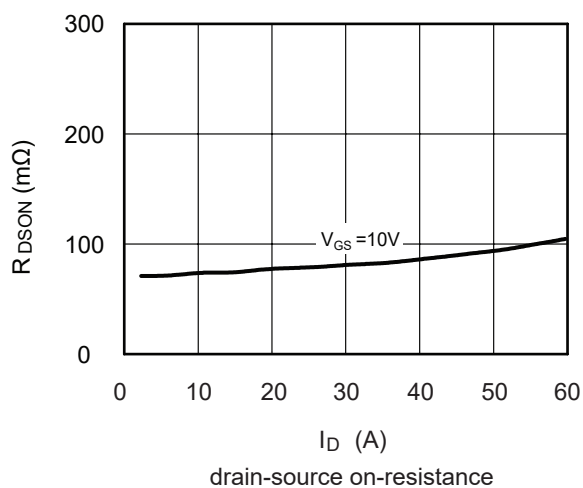
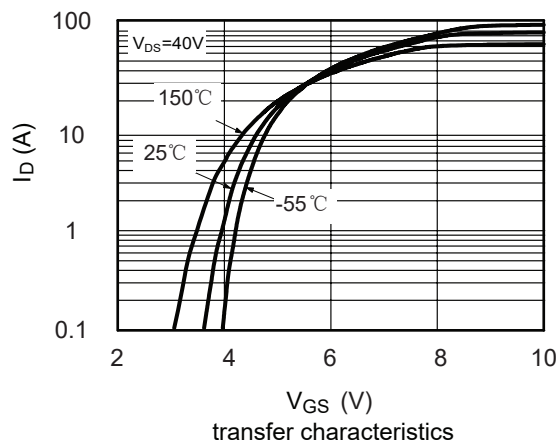
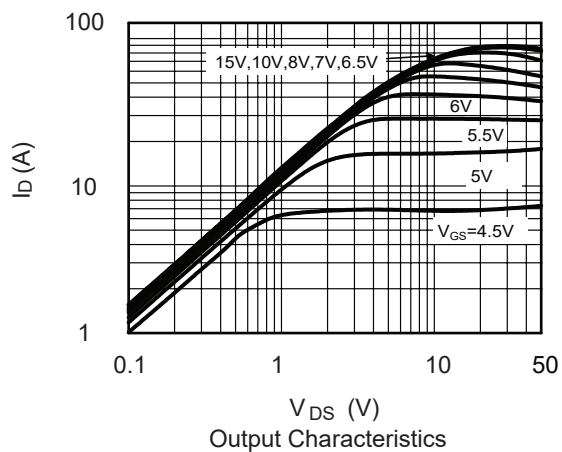
- 1.Repetitive rating; pulse width limited by maximum junction temperature.
- 2.The EAS data shows Max. rating . The test condition is V_{DD}=80V,V_{GS}=10V,L=5.0mH,I_{AS}=20A.

This product has been designed and qualified for the counsumer market.

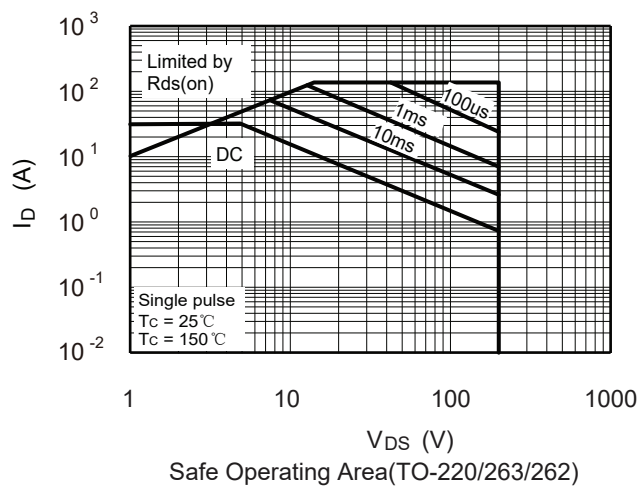
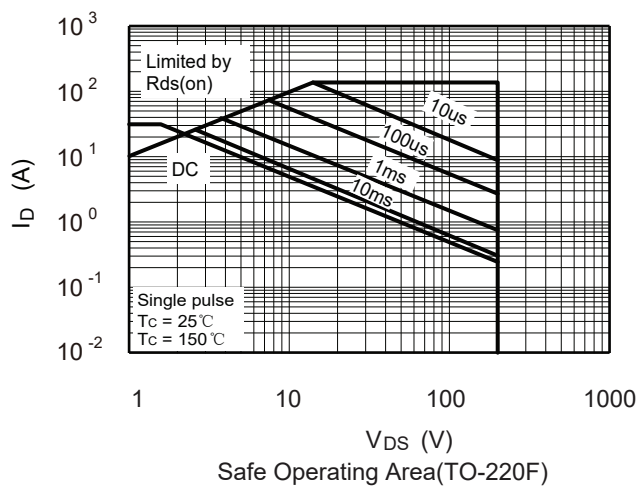
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Cmos reserver the right to improve product design ,functions and reliability wihtout notice.Please refer to the latest version of specification.

Typical Characteristics



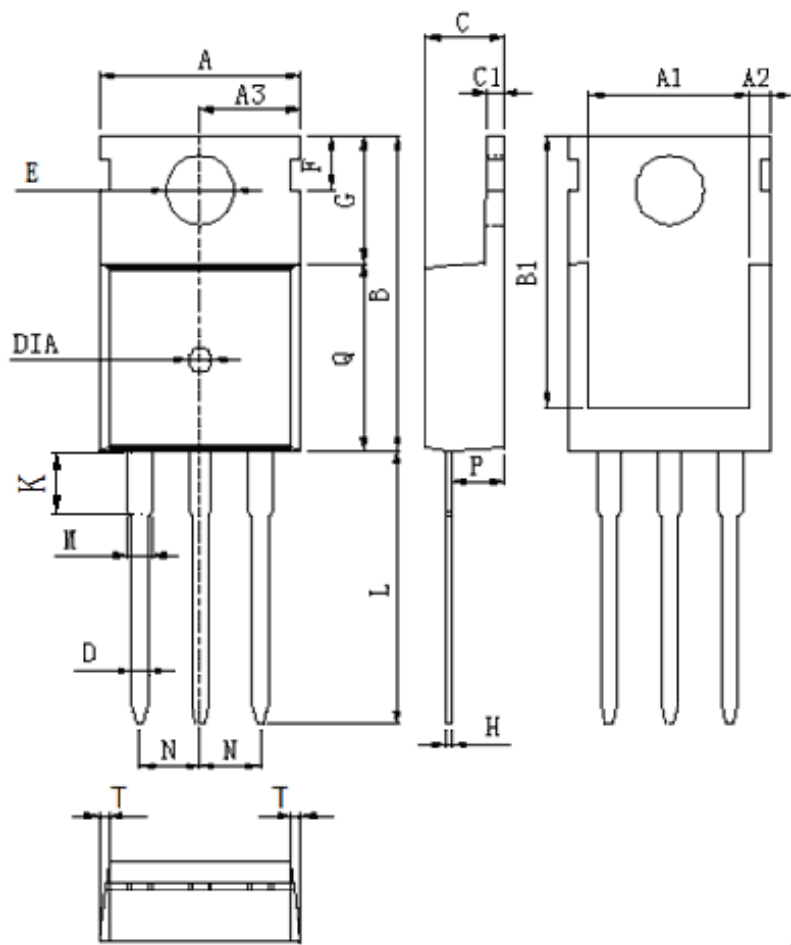
Typical Characteristics



Package Dimension

TO-220

Unit :mm

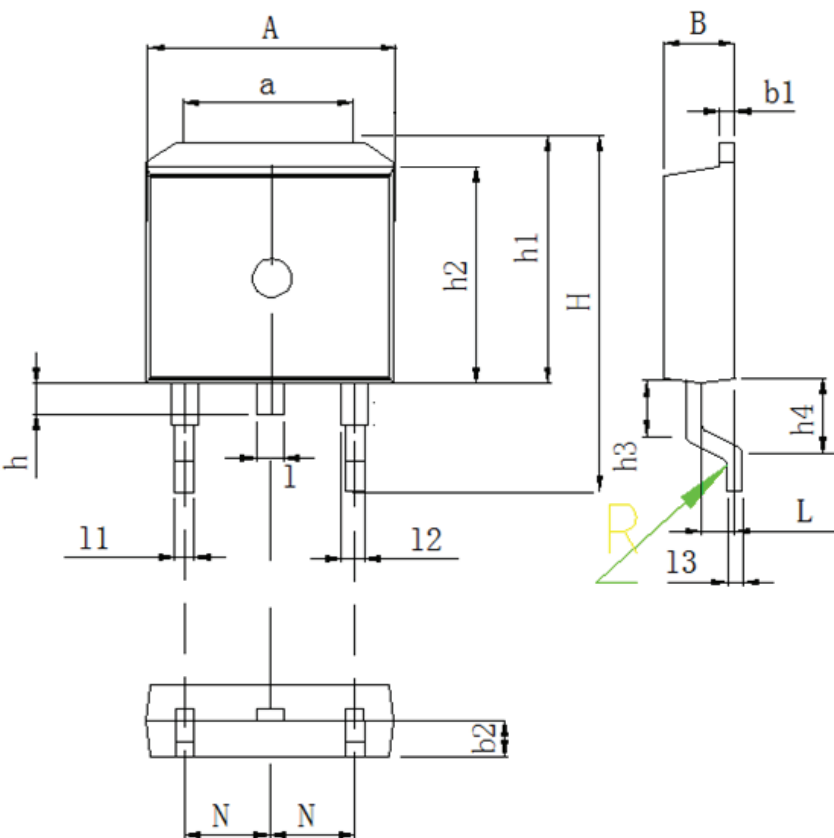


DIM	MILLIMETERS
A	10.0±0.3
A1	8.64±0.2
A2	1.15±0.1
A3	5.0±0.2
B	15.8±0.4
B1	13.2±0.3
C	4.56±0.1
C1	1.3±0.2
D	0.8±0.2
E	3.6±0.2
F	2.95±0.3
G	6.5±0.3
H	0.5±0.1
K	3.1±0.2
L	13.2±0.4
M	1.25±0.1
N	2.54±0.1
P	2.4±0.3
Q	9.0±0.3
T	W:0.35
DIA	⊙1.5 (deep 0.2)

Package Dimension

TO-263

Unit :mm

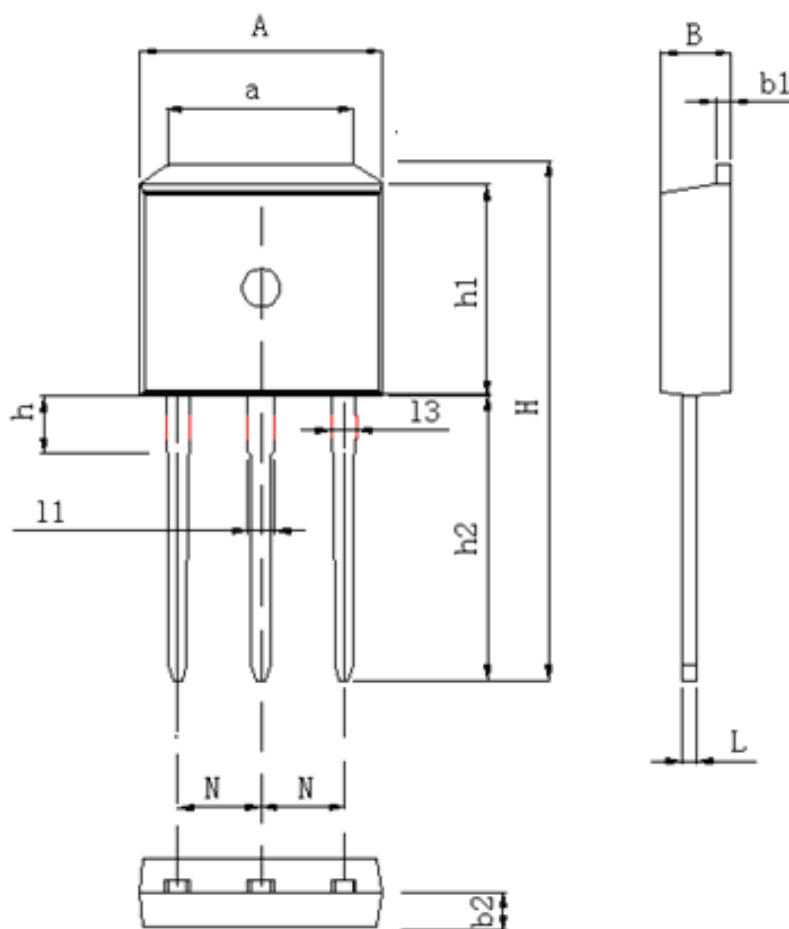


DIM	MILLIMETERS
A	9.8±0.2
a	7.4±0.4
B	4.5±0.2
b1	1.3±0.05
b2	2.4±0.2
H	15.5±0.3
h	1.54±0.2
h1	10.5±0.2
h2	9.2±0.1
h3	1.54±0.2
h4	2.7±0.2
L	2.4±0.2
1	1.3±0.1
11	0.8±0.1
12	1.3±0.1
13	0.5±0.1
N	2.54±0.1
R	0.5R±0.05

Package Dimension

TO-262

Unit :mm

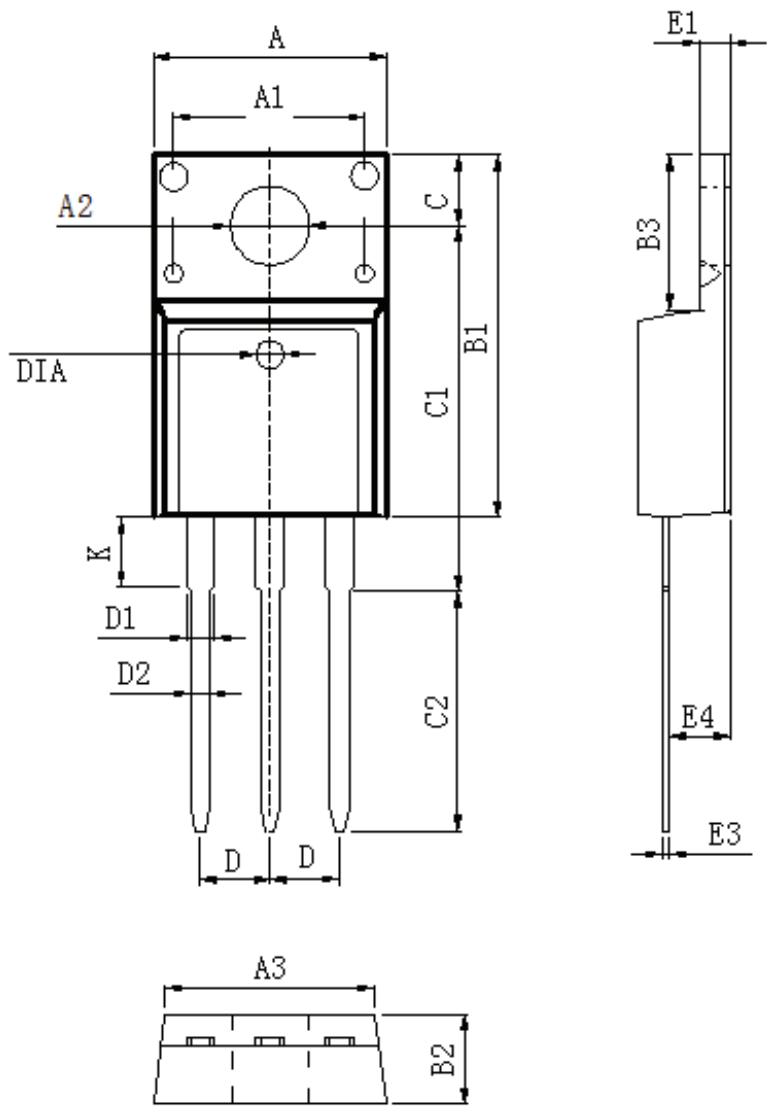


DIM	MILLIMETERS
A	9.98 ± 0.2
a	7.4 ± 0.4
B	4.5 ± 0.2
b1	1.3 ± 0.05
b2	2.4 ± 0.2
H	23.9 ± 0.3
h	3.1 ± 0.2
h1	9.16 ± 0.2
h2	13.2 ± 0.2
L	0.5 ± 0.1
l1	1.3 ± 0.1
l2	0.8 ± 0.1
N	2.45 ± 0.1

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)