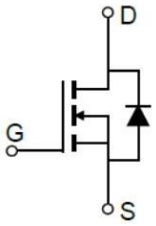
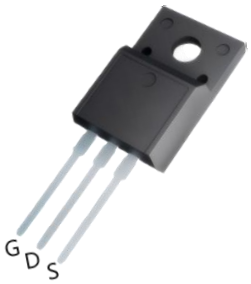
N-Channel Super Junction MOSFET

Parameter	Value	Unit
V_{DS}	850	V
$R_{DS(max)}$	260	mΩ
I_D	19	A





TO-220F

Features

- Multi-layer Epitaxial Chip Technology
- Low On-Resistance
- 100% avalanche tested

Applications

- Charger
- Adaptor
- Power Supply

Absolute Maximum Ratings (T_C=25℃,unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	850	V
V_{GS}	Gate-Source Voltage	±30	V
I_D@T_C=25℃	Continuous Drain Current	19*	A
I_D@T_C= 100℃	Continuous Drain Current	12*	A
I_{DM}	Pulsed Drain Current	76*	A
E_{AS}	Single Pulse Avalanche Energy (Note 1)	29.4	mJ
P_D@T_C=25℃	Total Power Dissipation	43	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	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient Max.	63.6	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case Max.	2.9	℃/W

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

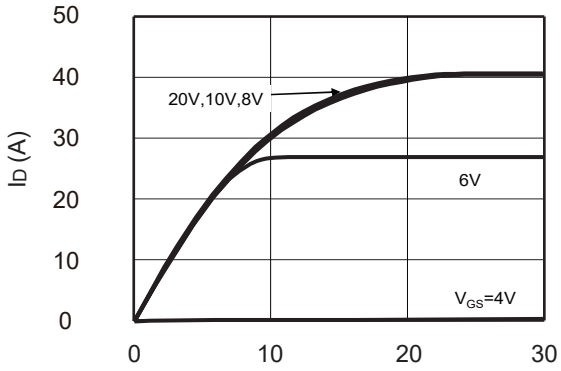
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	850	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=10A	---	0.22	0.26	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=VDS , I_D =250uA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=800V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±30V , V_{DS}=0V	---	---	±100	nA
g_{fs}	Forward Transconductance	V_{DS}=10V , I_D=10A	---	15	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	3	---	Ω
Q_g	Total Gate Charge	I_D=17A V_{DS}=640V V_{GS}=10V	---	39	---	nC
Q_{gs}	Gate-Source Charge		---	7.3	---	
Q_{gd}	Gate-Drain Charge		---	19.2	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=400V V_{GS}=10V I_D=17A R_G =25Ω	---	28	---	ns
T_r	Rise Time		---	50	---	
$T_{d(off)}$	Turn-Off Delay Time		---	129	---	
T_f	Fall Time		---	44	---	
C_{iss}	Input Capacitance	V_{DS}=400V V_{GS}=0V f= 1MHz	---	1400	---	pF
C_{oss}	Output Capacitance		---	29.7	---	
C_{rss}	Reverse Transfer Capacitance		---	3.8	---	

Diode Characteristics

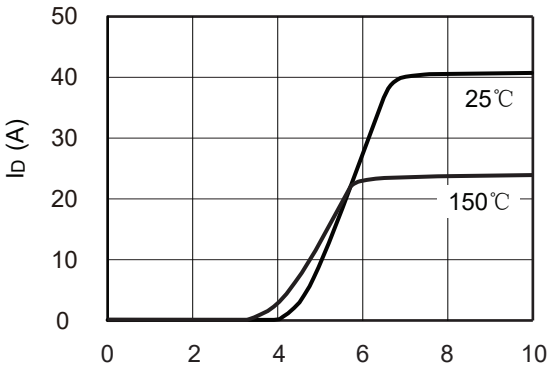
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	19	A
I_{SM}	Pulsed Source Current		---	---	76	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S= 10A ,T_J=25℃	---	0.84	1.4	V
t_{rr}	Reverse Recovery Time	di/dt=100A/μs V_{DD}=100V , I_{SD}=17A	---	466	---	ns
Q_{rr}	Reverse Recovery Charge		---	7.6	---	μC

Note :
1.The EAS data shows Max. rating .The test condition is VDS=100V , VGS=10V , L=30mH , IAS=1.4A.

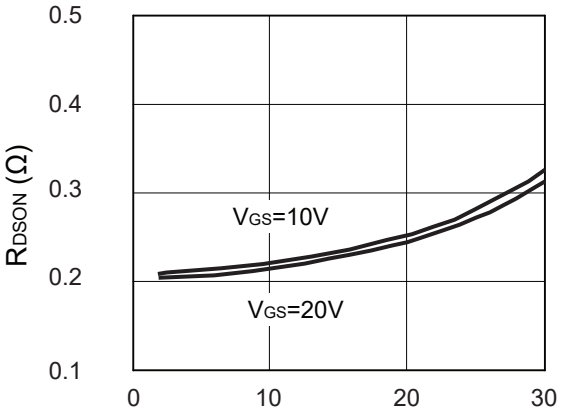
Typical Characteristics



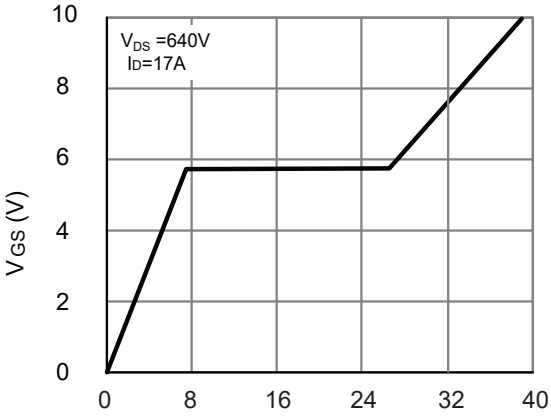
Output Characteristics



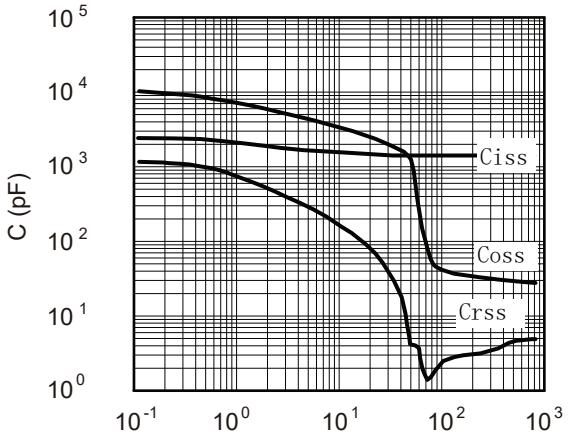
transfer characteristics



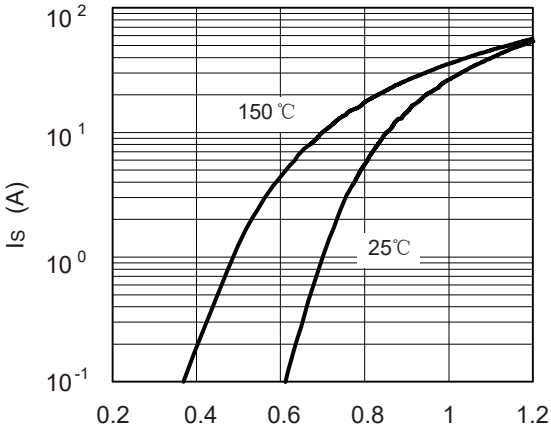
On-Resistance vs Drain Current



Gate charge vs gate-source voltage



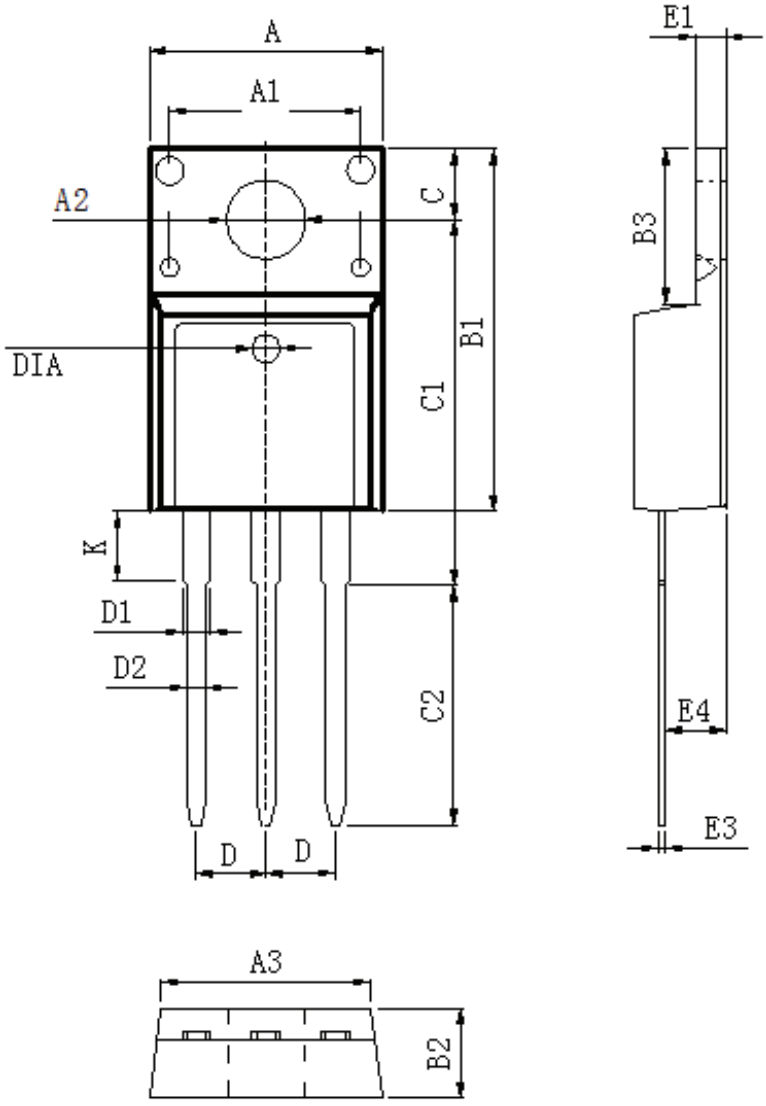
Capacitance Characteristics



Body-Diode Characteristics

Package Outline(Unit :mm)

TO-220F



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)

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