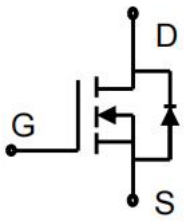
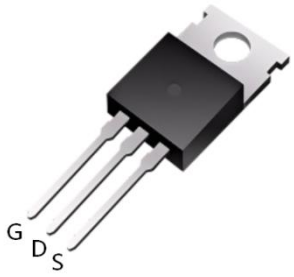
N-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DSS}	30	V
$R_{DS(on)}$	2.55	mΩ
I_D	150	A





TO-220

Features

- Advanced Trench Technology
- Excellent RDS(ON)
- Low Gate Charge

Applications

- Battery protection
- Load switch
- Uninterruptible power supply

Absolute Maximum Ratings (at T_C=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	150	A
Pulsed Drain Current (Note1)	I_{DM}	600	A
Power Dissipation	P_D	110	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	360	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62	°C/W

Note1:Pulse test: 300μs pulse width, 2 % duty cycle

Electrical Characteristics(at TC=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	B_{VDSS}	V_{GS}=0 V,I_D=250μA	30	–	–	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=30V, V_{GS}=0 V	–	–	1	μA
Gate Leakage Current	I_{GSS}	V_{GS}= ± 20V, V_{DS}=0V	–	–	±100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250μA	1.2	–	2.2	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=10A	–	2.55	3	mΩ
		V_{GS}=4.5V, I_D=20A	–	4	6	mΩ
Forward Transconductance	g_{fs}	V_{DS}=5V, I_D=30A	30	–	–	S
Input Capacitance	C_{iss}	V_{DS}=15V , V_{GS}=0V , f=1MHz	–	5100	–	pF
Output Capacitance	C_{oss}		–	1086	–	pF
Reverse Transfer Capacitance	C_{rss}		–	612	–	pF
Turn-on Delay Time(Note2)	$t_{d(ON)}$	V_{DD}=15V , V_{GS}=10V , R_G=3Ω I_D=30A	–	22	–	ns
Rise Time(Note2)	t_r		–	15	–	ns
Turn-Off Delay Time(Note2)	$t_{d(OFF)}$		–	73	–	ns
Fall Time(Note2)	t_f		–	35	–	ns
Total Gate Charge(Note2)	Q_G	V_{DS}=15V , V_{GS}=10V , I_D=30A	–	48	–	nC
Gate to Source Charge(Note2)	Q_{GS}		–	11	–	nC
Gate to Drain Charge(Note2)	Q_{GD}		–	21	–	nC

Source-Drain Diode Characteristics (at Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Maximum Body-Diode Continuous Current	I_S		–	–	150	A
Maximum Body-Diode Pulsed Current(Note2)	I_{SM}		–	–	600	A
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V , I_S=1A , T_J=25℃	–	–	1.2	V

Note2:Pulse test: 300μs pulse width, 2 % duty cycle

Typical Characteristic

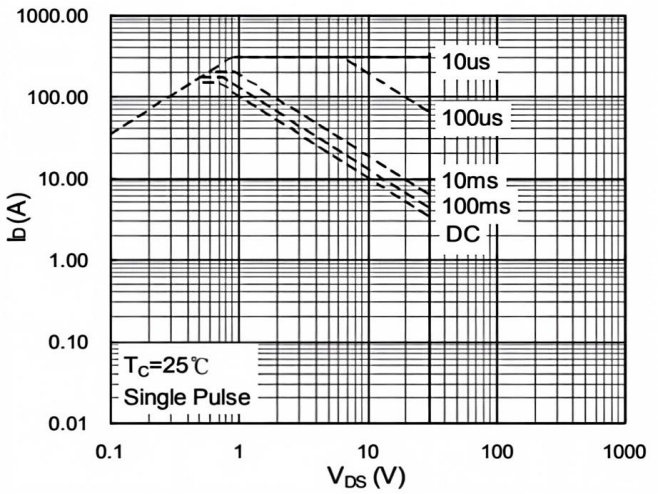


Fig 1:Output Characteristics

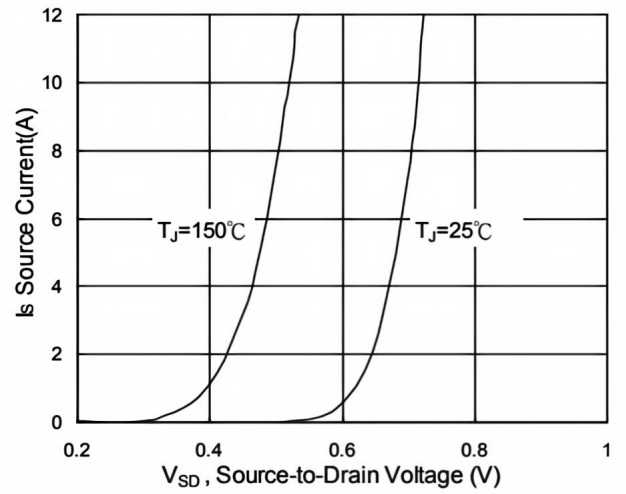


Fig 2:Body-Diode Characteristics

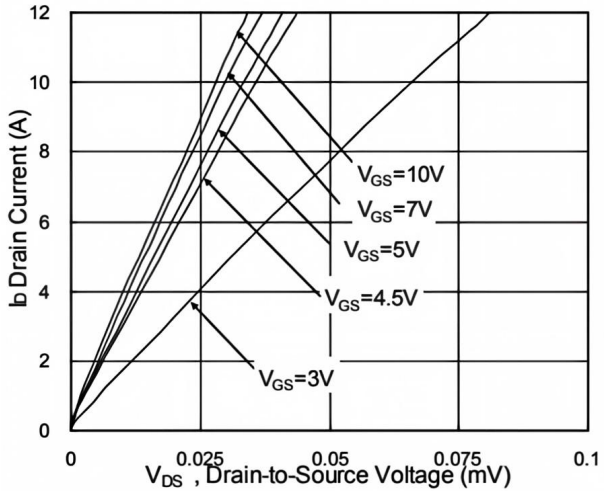


Fig 3. On-Region Characteristics

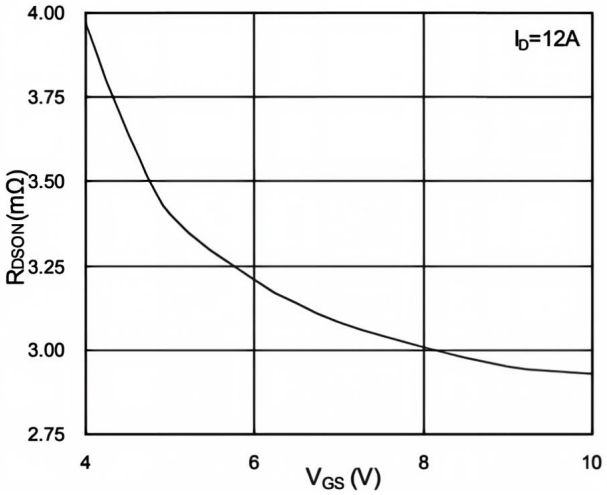


Fig 4. On-Resistance vs Gate Voltage

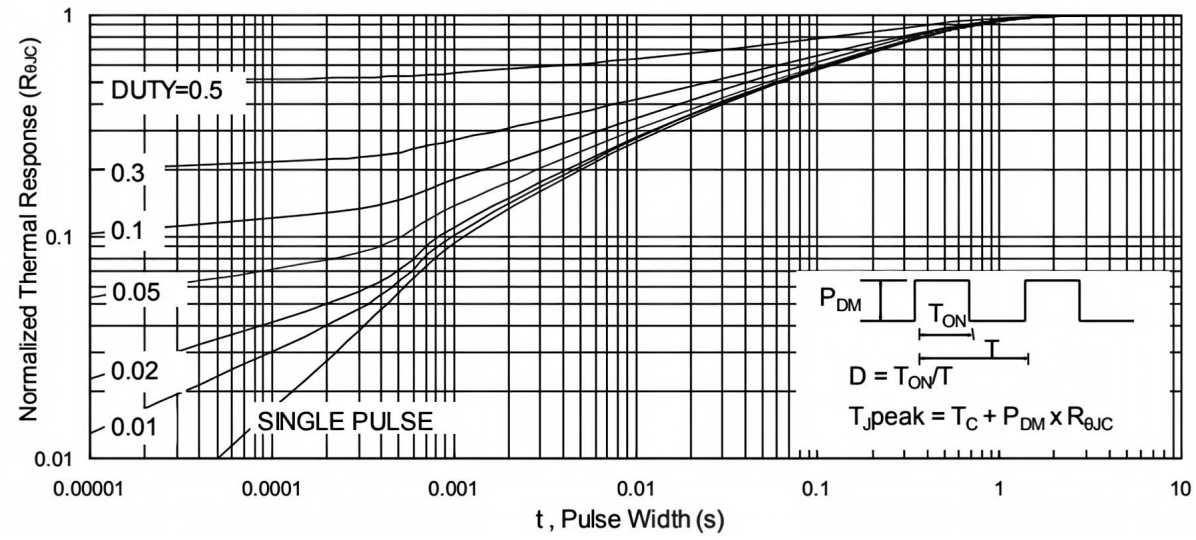
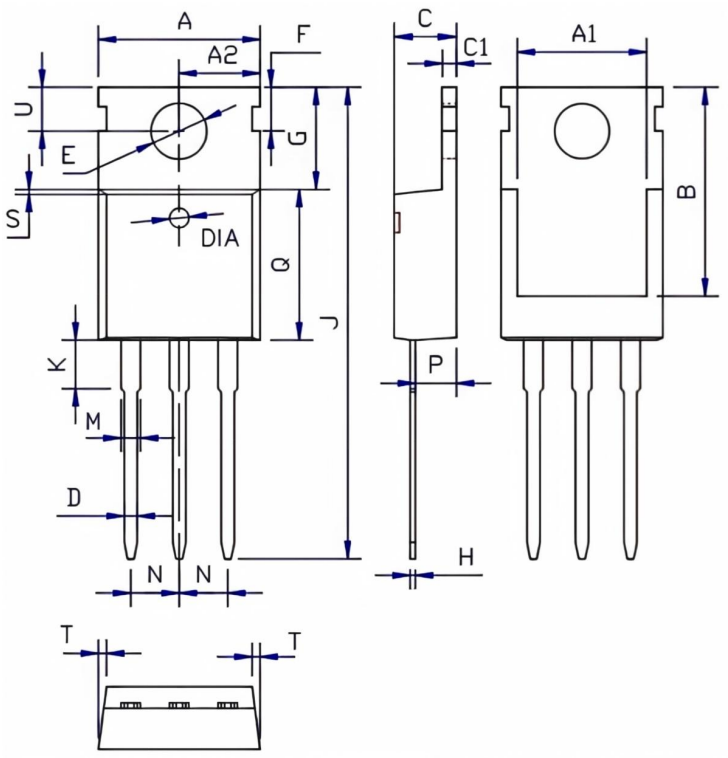


Fig 5.Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions (Units: mm)

TO-220



Dim.	Min.	Max.
A	9.8	10.2
A1	7.8	8.2
A2	4.8	5.2
B	13	13.4
C	4.35	4.65
C1	1.15	1.45
D	0.65	0.95
E	3.45	3.75
F	2.85	3.15
G	6.4	6.8
H	0.35	0.65
J	28.68	29.08
K	2.8	3.2
M	1.15	1.45
N	Typ2.54	
P	2.2	2.6
Q	9	9.4
S	0.15	0.35
T	0.15	0.35
U	2.65	2.95
DIA	Dia 1.5±0.1	D MAX0.5
All Dimensions in millimeter		

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