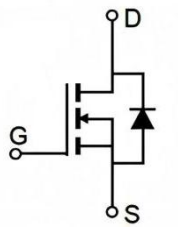
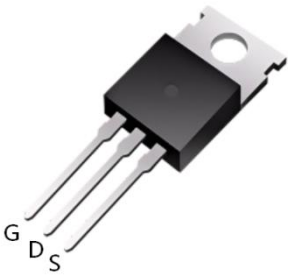
N-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	120	V
$R_{DS(on)}$	2.6	mΩ
I_D	200	A





TO-220

Features

- Split Gate Trench MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low RDS(ON)

Applications

- DC-DC Converters
- Power management functions
- Synchronous-rectification applications

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

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	120	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	T_C=25℃	I_D	200	A
	T_C=100℃		127	
Peak Drain Current, Pulsed		I_{DM}	655	A
Single Pulse Avalanche Energy		E_{AS}	1479	mJ
Power Dissipation	T_C=25℃	P_D	300	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.42	℃/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62	℃/W

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	120			V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=120V, V_{GS}=0V			1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			±100	nA
Drain-source on-state resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=84A		2.6	3.4	mΩ
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS}=V_{DS},I_D=250μA	2.0	3.0	4.0	V
Gate resistance	R_g	V_{DS} =0V, f=1MHz		2.7		Ω
Forward Transconductance	g_{fs}	V_{DS}=5V, I_D=84A		195		S
Input Capacitance	C_{iss}	V_{GS}=0V,V_{DS}=60V, f=1MHz		9560		pF
Output Capacitance	C_{oss}			1220		
Reverse Transfer Capacitance	C_{rss}			42		
Total gate charge	Q_g	V_{DS}=60V,V_{GS}=10V, I_D=84A		146.9		nC
Gate-source charge	Q_{gs}			57.7		
Gate-drain charge	Q_{gd}			32.3		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=60V, R_G=2.7Ω		32.7		nS
Rise time	t_r			80.3		
Turn-Off Delay Time	$t_{d(off)}$			78.7		
Fall time	t_f			47.3		
Continuous Source Current	I_S	V_G=V_D=0V , Force Current			200	A
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=84A, T_J=25℃			1.4	V
Reverse Recovery Time	t_{rr}	dIF/dt=100A/μs, I_F=84A T_J=25℃	--	90.2	--	ns
Reverse Recovery Charge	Q_{rr}		--	239.9	--	nC

Typical Characteristics

Fig 1: Output Characteristics

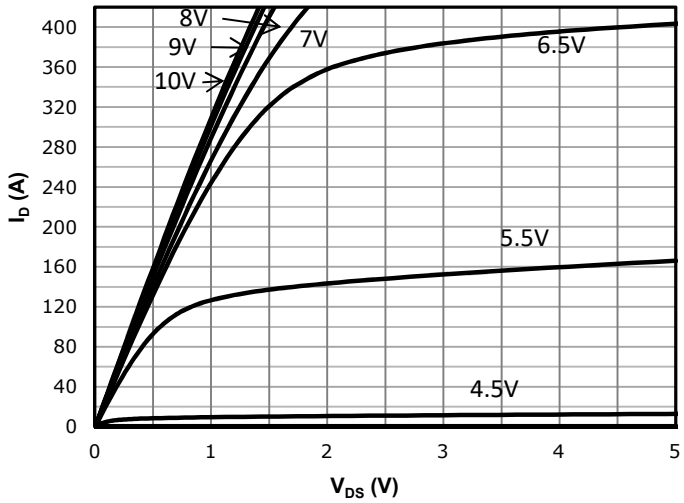


Fig 2: Transfer Characteristics

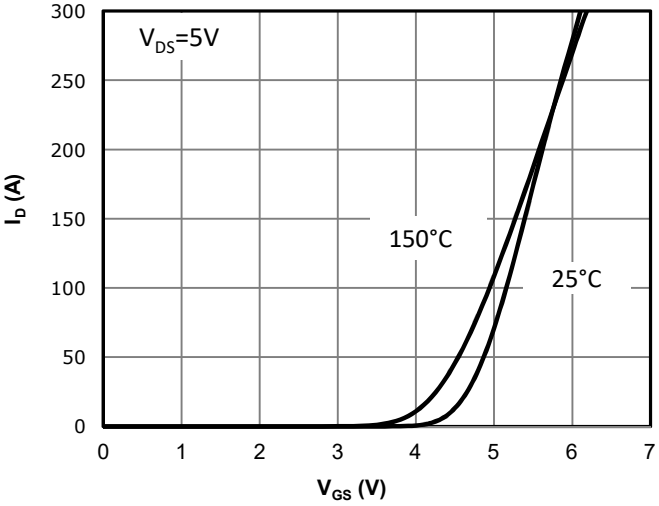


Fig 3: Rds(on) vs Drain Current and Gate Voltage

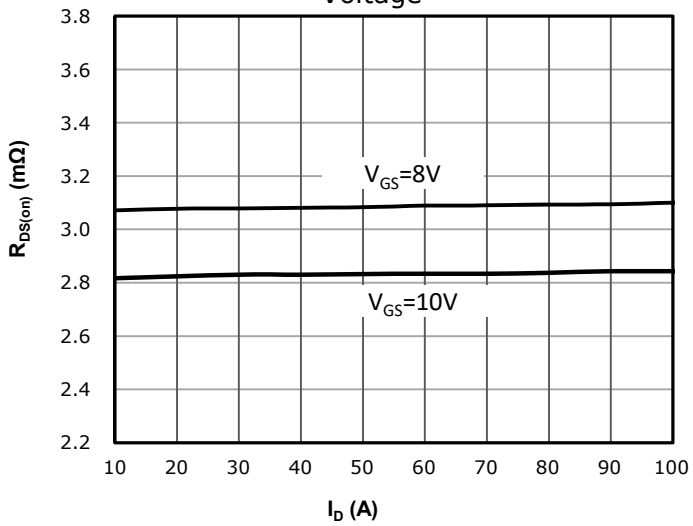


Fig 4: Rds(on) vs Gate Voltage

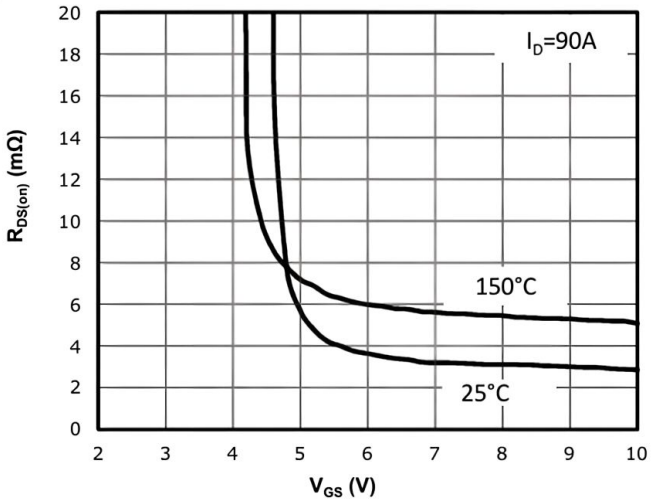


Fig 5: Rds(on) vs. Temperature

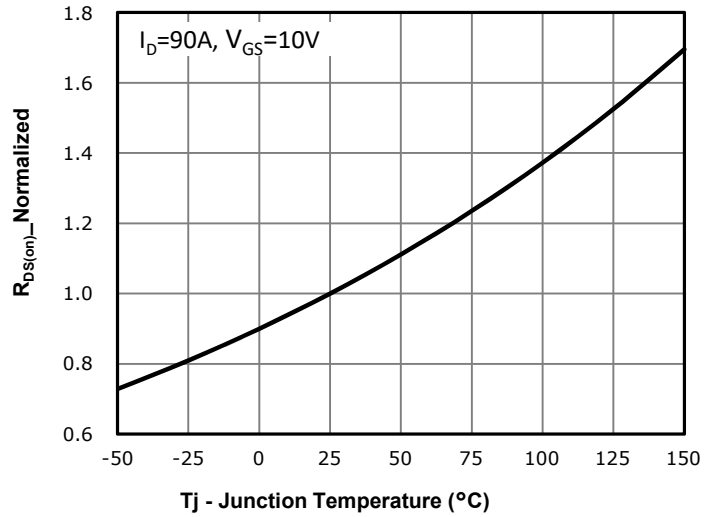


Fig 6: Vgs(th) vs. Temperature

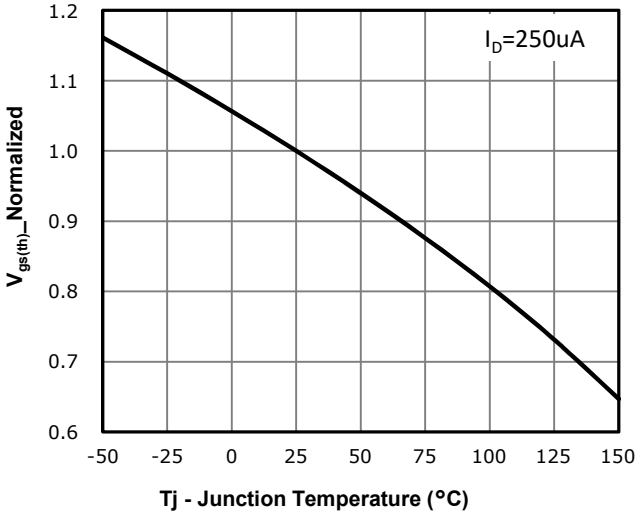


Fig 7: BVdss vs. Temperature

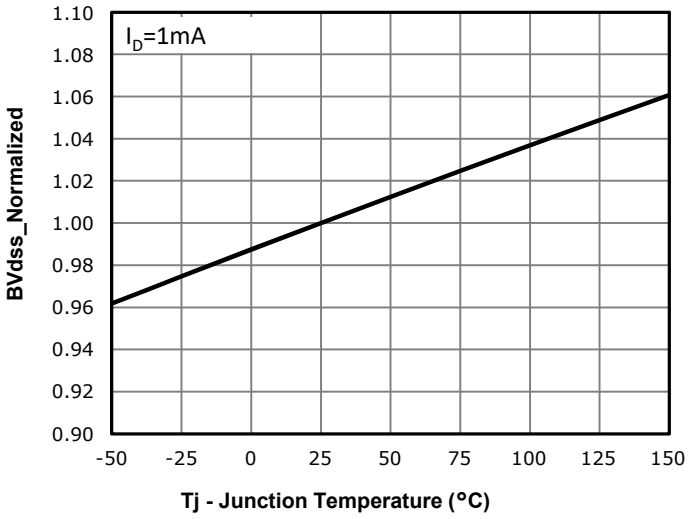


Fig 8: Capacitance Characteristics

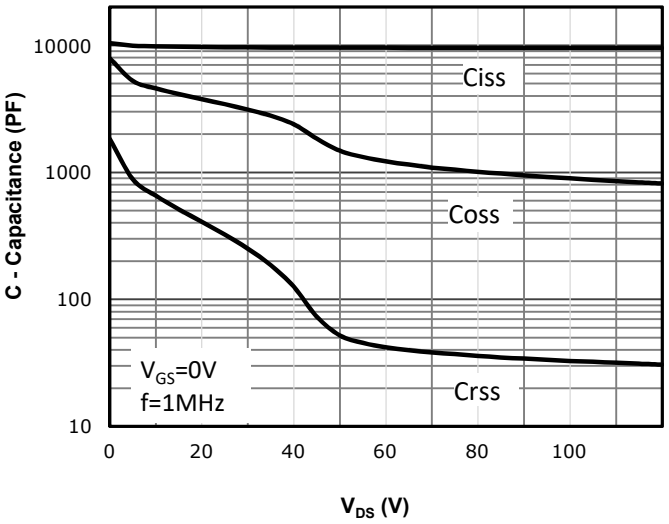


Fig 9: Gate Charge Characteristics

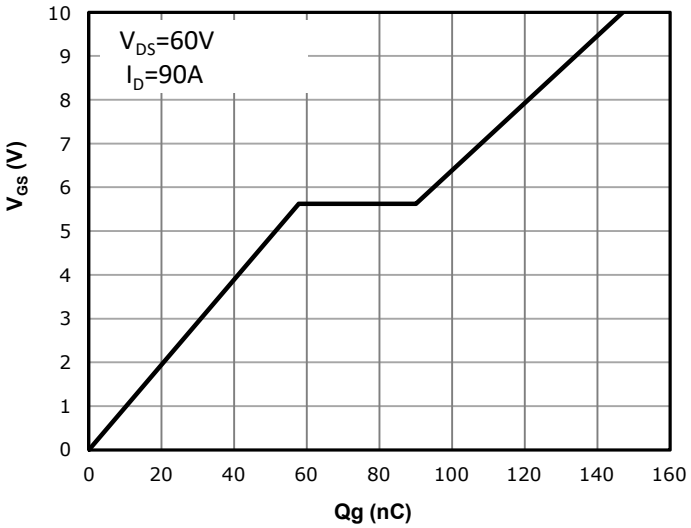


Fig 10: Body-diode Forward Characteristics

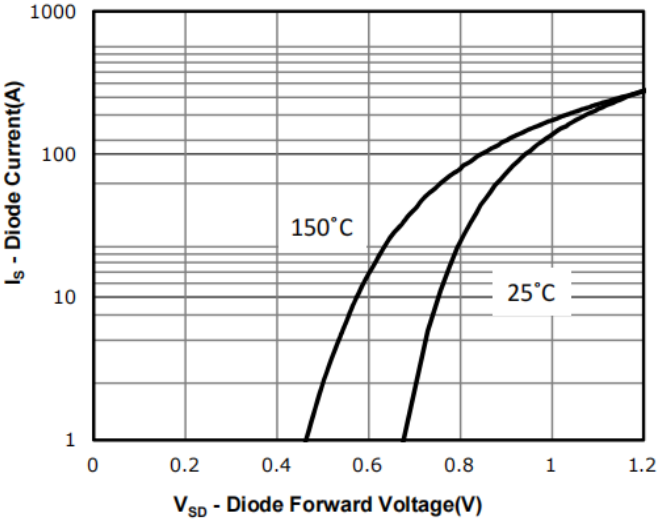


Fig 11: Power Dissipation

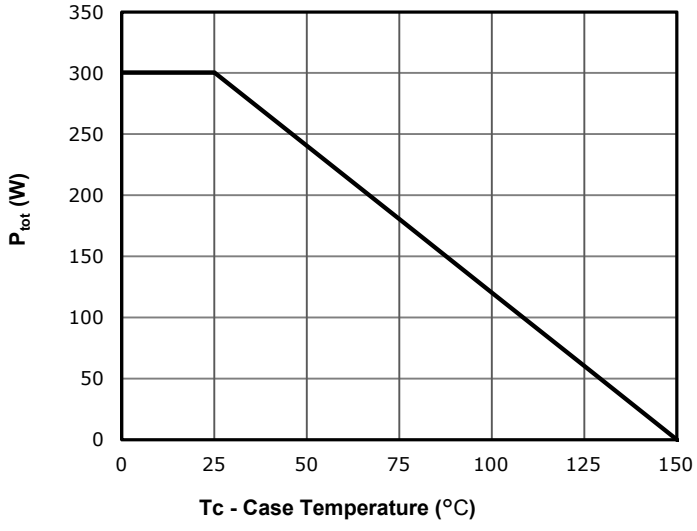


Fig 12: Drain Current Derating

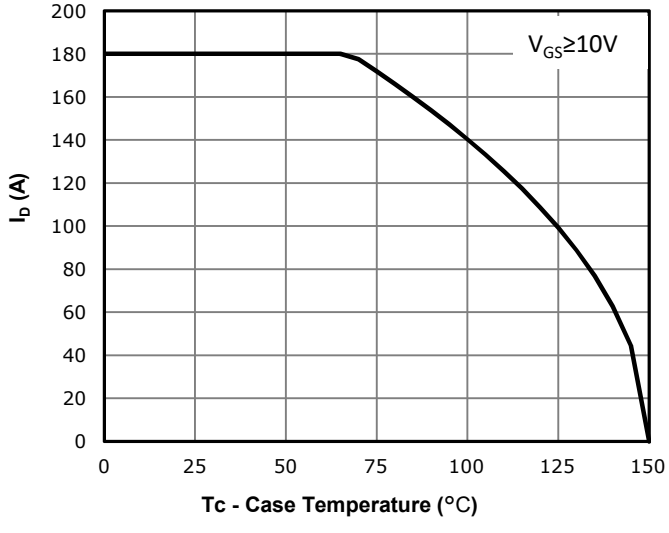


Fig 13: Safe Operating Area

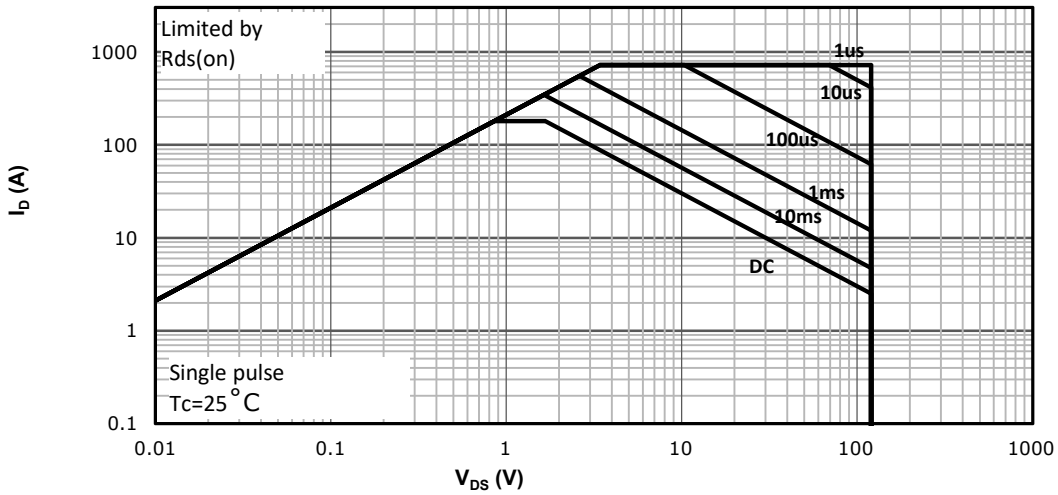
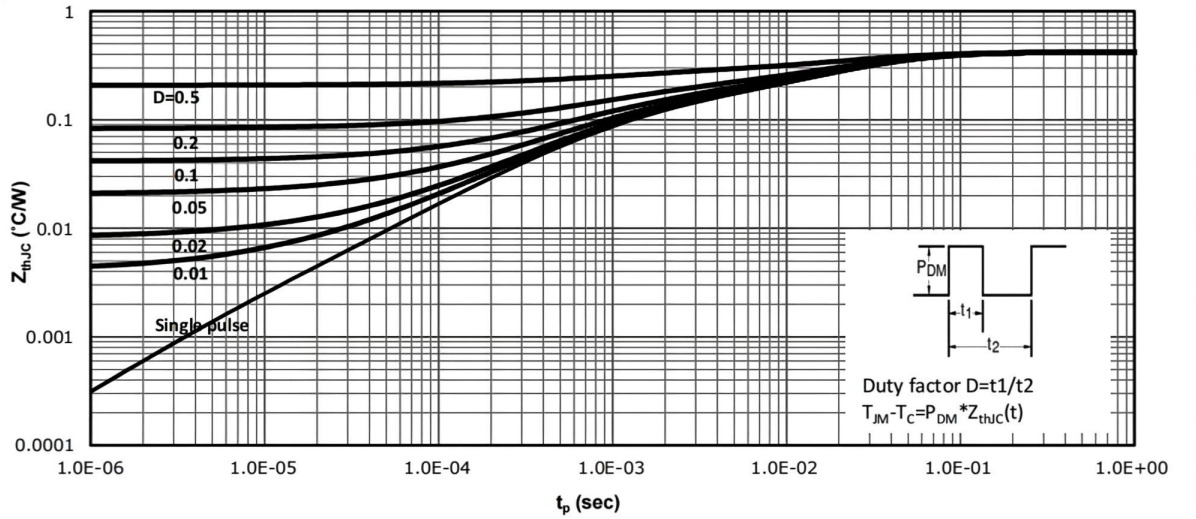
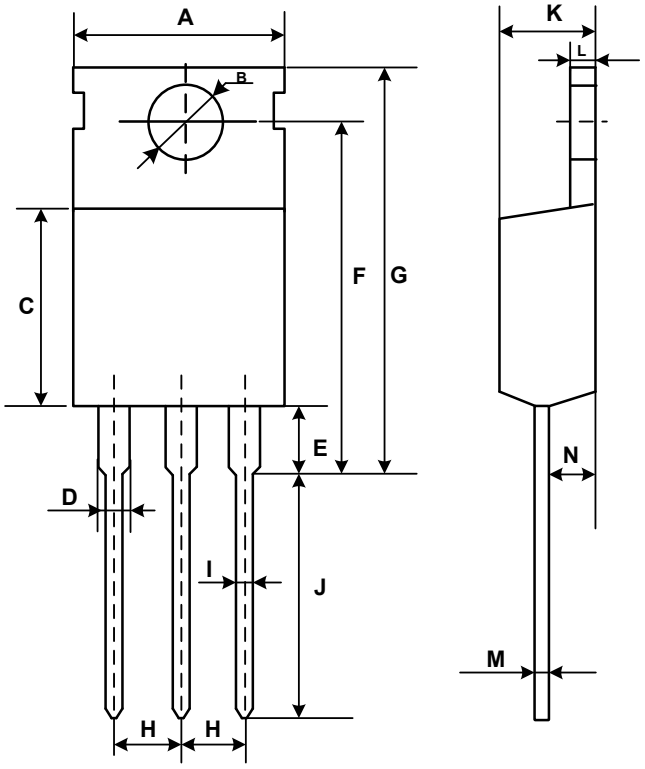


Fig 14: Max. Transient Thermal Impedance



Package Outline

TO-220



OMMON DIMENSIONS

SYMBOL	MM	
	MIN	MAX
A	9.70	10.30
B	3.40	3.80
C	8.80	9.40
D	1.17	1.47
E	2.60	3.50
F	15.10	16.70
G	19.55MAX	
H	2.54REF	
I	0.70	0.95
J	9.35	11.00
K	4.30	4.77
L	1.20	1.45
M	0.40	0.65
N	2.20	2.60

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