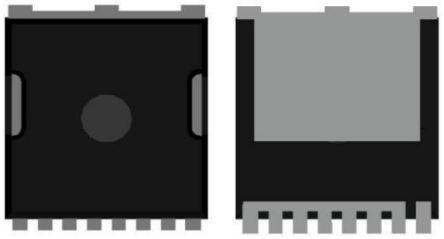
N-Channel Enhancement Mode MOSFET

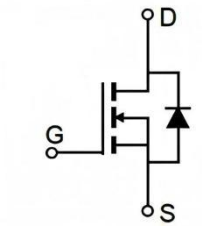
Parameter	Value	Unit
V_{DS}	85	V
$R_{DS(on)}$	1	mΩ
I_D	390	A

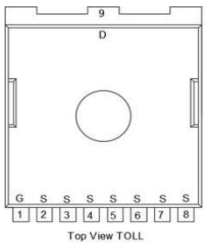


TOLL

Features

- Fast Switching
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test





Applications

- Power switching application
- DC-DC Converter
- Power Management

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

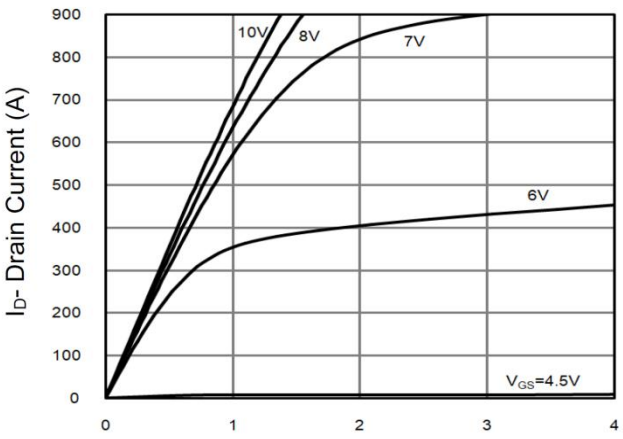
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	85	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current1 (Tc=25℃)	I_D	390	A
Continuous Drain Current1 (Tc=100℃)	I_D	230	A
Pulsed Drain Current	I_{DM}	1560	A
Single Pulse Avalanche Energy[1]	E_{AS}	2652	mJ
Power Dissipation (Tc=25℃)	P_D	500	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.25	℃/W
Storage Temperature Range	T_{STG}	-55 to 150	℃
Operating Junction Temperature Range	T_J	-55 to 150	℃

Electrical Characteristics (at Ta= 25℃ unless otherwise specified)

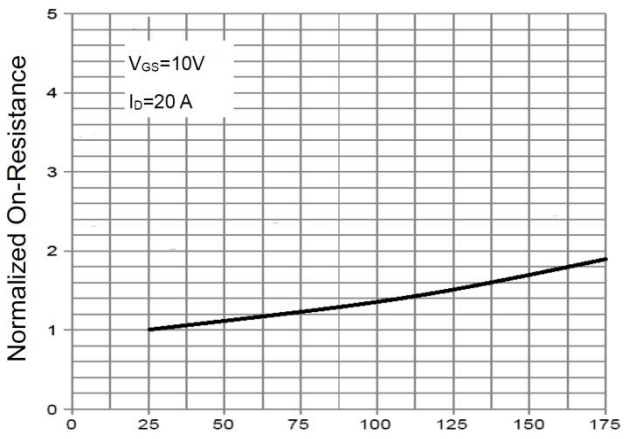
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	B_{VDSS}	I_D=250μA, V_{GS}=0V	85	90	--	V
Drain Cut-Off Current	I_{DSS}	V_{DS}=68V, V_{GS}=0V	--	--	1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	--	--	±0.1	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	3.0	4.0	V
Drain-Source ON Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=20A	--	1	1.2	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=40V, V_{GS}=0V, f =1.0MHz	--	13217	--	pF
Output Capacitance	C_{oss}		--	1610	--	
Reverse Transfer Capacitance	C_{rss}		--	161	--	
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS}=40V, V_{GS}=10V, I_D=125A	--	190	--	nC
Gate-Source Charge	Q_{gs}		--	62	--	
Gate-Drain Charge	Q_{gd}		--	38	--	
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V, V_{DS}=40V I_D=125A , R_G=1.6Ω	--	54	--	nS
Rise Time	t_r		--	57	--	
Turn-Off Delay Time	$t_{d(off)}$		--	136	--	
Fall Time	t_f		--	68	--	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V	--	--	1.2	V
Maximum Body-Diode Continuous Current	I_S		--	--	390	A
Reverse Recovery Time	T_{rr}	I_S=100A, di/dt=100A/us, T_J=25℃	--	150	--	nS
Reverse Recovery Charge	Q_{rr}		--	390	--	nC

Note:
1.The test condition is VDD=45V,VGS=10V,L=0.5mH,RG=25Ω

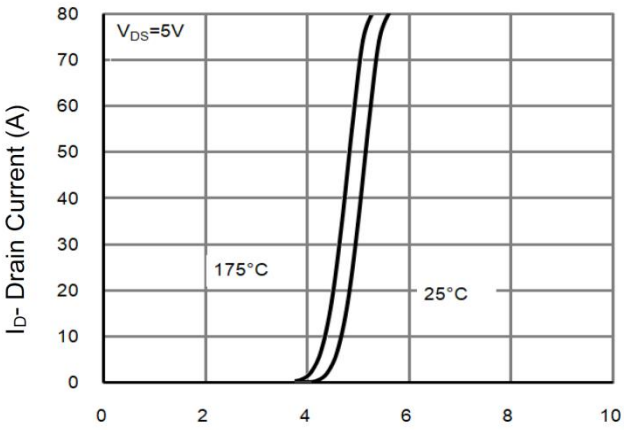
Typical Characteristics



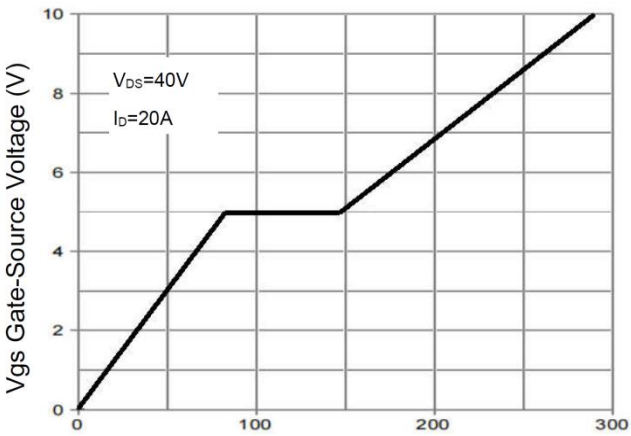
Output Characteristics



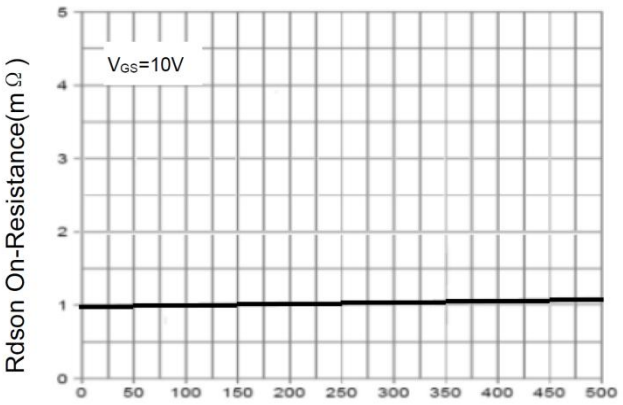
Rdson-Junction Temperature



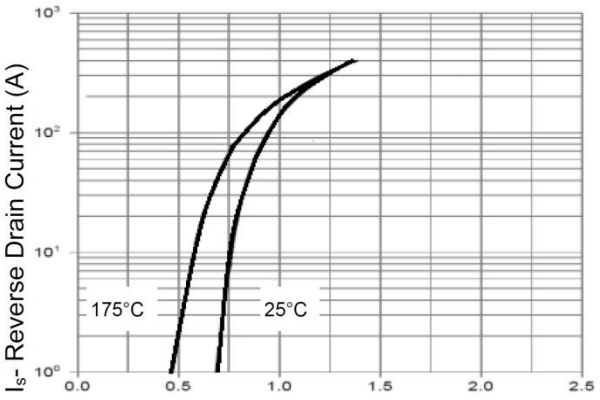
Transfer Characteristics



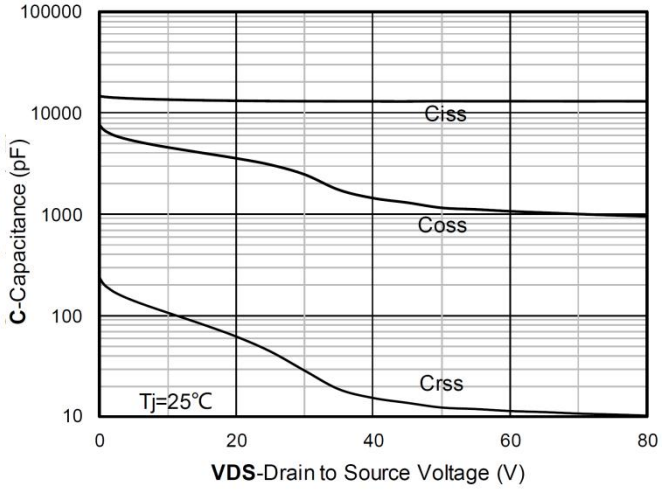
Gate Charge



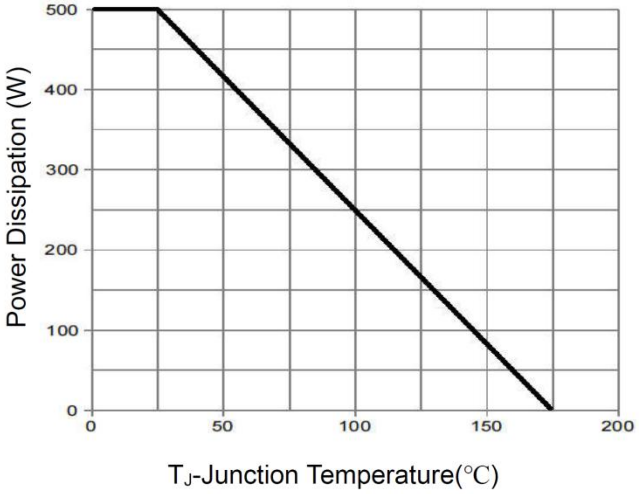
Rdson- Drain Current



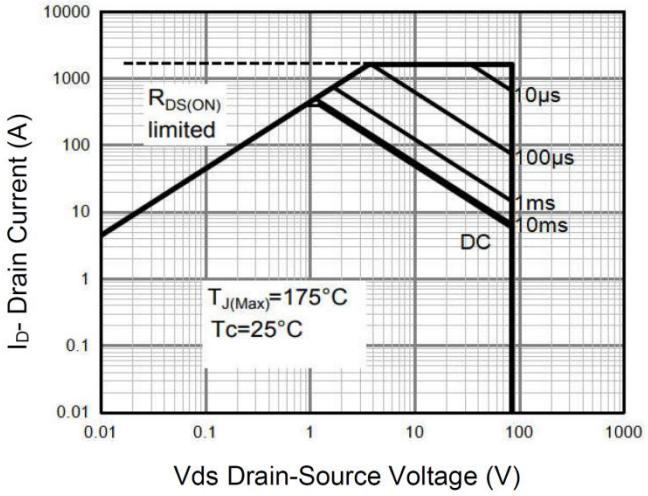
Source- Drain Diode Forward



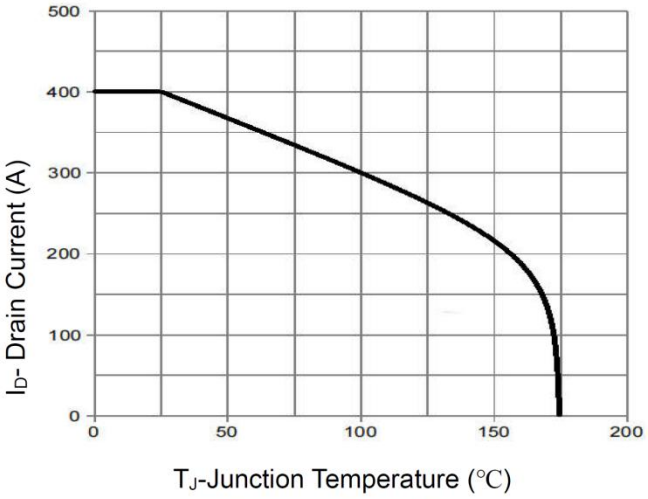
Capacitance vs Vds



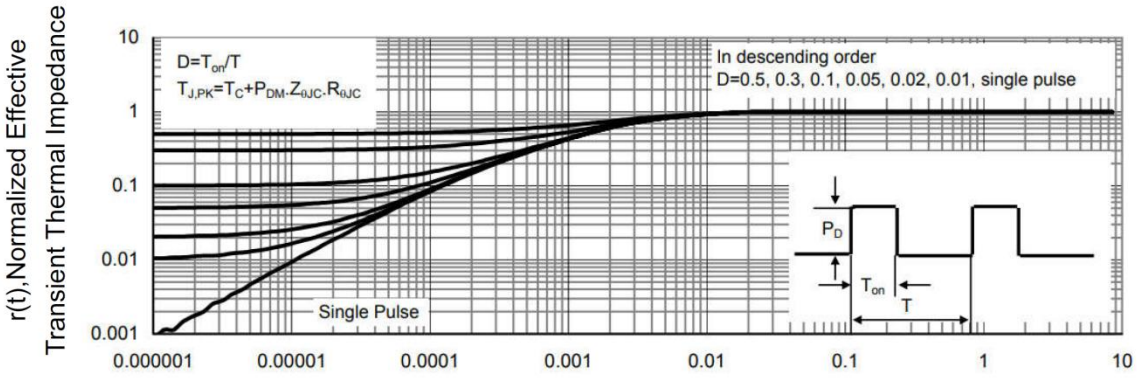
Power De-rating



Safe Operation Area



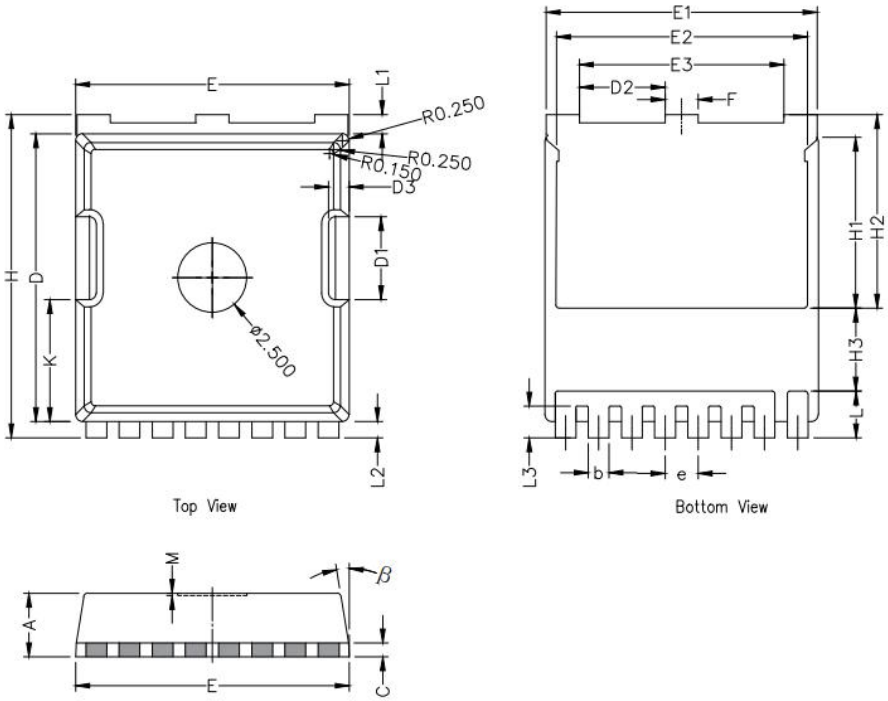
Current De-rating



Normalized Maximum Transient Thermal Impedance

Package Outline

TOLL



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	2.20	2.30	2.40
b	0.65	0.75	0.85
C		0.508 REF	
D	10.25	10.40	10.55
D1	2.85	3.00	3.15
E	9.75	9.90	10.05
E1	9.65	9.80	9.95
E2	8.95	9.10	9.25
E3	7.25	7.40	7.55
e		1.20 BSC	
F	1.05	1.20	1.35
H	11.55	11.70	11.85
H1	6.03	6.18	6.33
H2	6.85	7.00	7.15
H3		3.00 BSC	
L	1.55	1.70	1.85
L1	0.55	0.7	0.85
L2	0.45	0.6	0.75
M		0.08 REF.	
β	8°	10°	12°
K	4.25	4.40	4.55

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