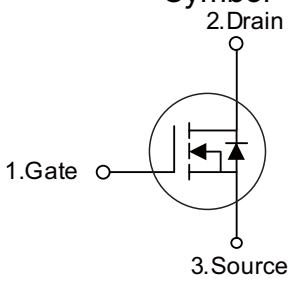
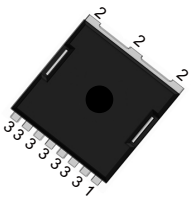
■ PRODUCT CHARACTERISTICS

VDSS	650V
R_{DS}(on)typ(@V_{GS} =10 V)	0.43Ω
Qg@type	57nC
ID	16A

Symbol





■ APPLICATIONS

- High efficiency switch mode power supplies
- Electronic lamp ballasts based on half bridge
- LED power supply

■ FEATURES

* High Switching Speed
* 100% Avalanche Tested

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT16N65T	TOLL	2000 pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS (T_C = 25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	650	V
Gate-Source Voltage		V_{GSS}	±30	V
Drain Current	Continuous (T_C =25°C)	I_D	16	A
	Pulsed	I_{DM}	64	A
Avalanche Current		I_{AR}	16	A
Avalanche Energy		E_{AS}	1280	mJ
Power Dissipation		P_D	270	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55~+150	°C

■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	650	-	-	V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=650V, V_{GS}=0V	-	-	1	μA
			V_{DS}=520V, V_{GS}=0V, T_C=125°C	-	-	10	μA
Gate- Source Leakage Current	Forward	I_{GSS}	V_{GS}=+30V, V_{DS}=0V	-	-	+100	nA
	Reverse		V_{GS}=-30V, V_{DS}=0V	-	-	-100	nA
On characteristics							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	-	4.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=8A	-	0.43	0.5	Ω
Dynamic characteristics							
Input Capacitance		C_{ISS}	V_{GS}=0V, V_{DS}=25V, f=1.0MHz	-	2808	-	pF
Output Capacitance		C_{OSS}		-	225	-	pF
Reverse Transfer Capacitance		C_{RSS}		-	50	-	pF
Switching characteristics							
Turn-ON Delay Time		$t_{D(ON)}$	V_{DS}=30V, I_D=0.5A, R_G=25Ω	-	112	-	ns
Rise Time		t_R		-	186	-	ns
Turn-OFF Delay Time		$t_{D(OFF)}$		-	335	-	ns
Fall-Time		t_F		-	186	-	ns
Total Gate Charge		Q_G	V_{GS}=10V, V_{DS}=520V, I_D=16A	-	57	-	nC
Gate to Source Charge		Q_{GS}		-	15.4	-	nC
Gate to Drain Charge		Q_{GD}		-	15.8	-	nC
Source-drain diode ratings and characteristics							
Maximum Body-Diode Continuous Current		I_S		-	-	16	A
Maximum Body-Diode Pulsed Current		I_{SM}		-	-	64	A
Drain-Source Diode Forward Voltage		V_{SD}	I_S=16A, V_{GS}=0V	-	-	1.4	V
Reverse Recovery Time		t_{rr}	I_S=16A , V_{GS}=0V	-	472	-	ns
Reverse Recovery Charge		Q_{rr}	di/dt=100A/μs	-	8.4	-	μC

■ TYPICAL CHARACTERISTICS

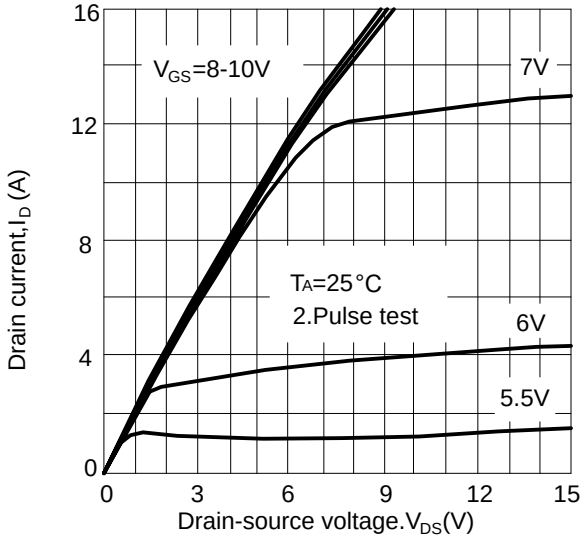


Figure 1:Drain current vs.drain-source voltage

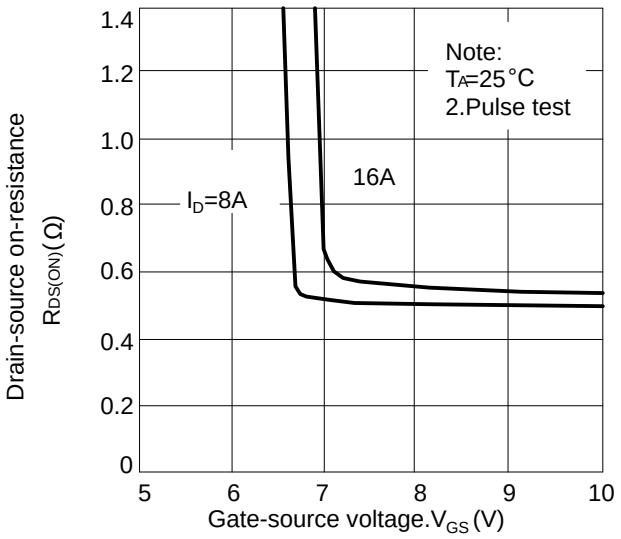


Figure 2:Drain-source on-resistancevs gate source voltage

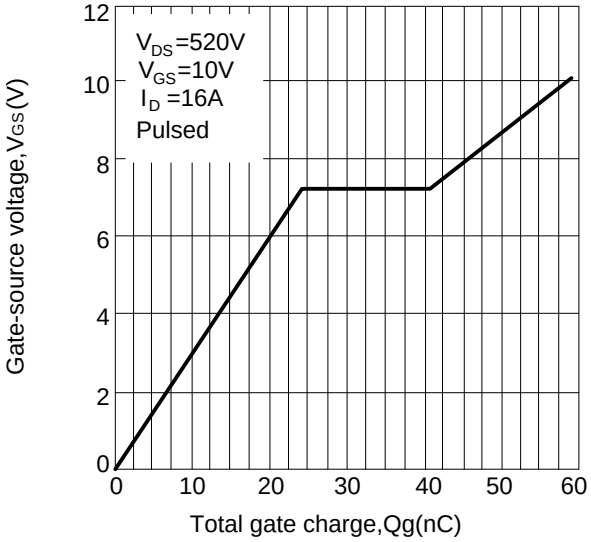


Figure 3:Gate charge characteristics

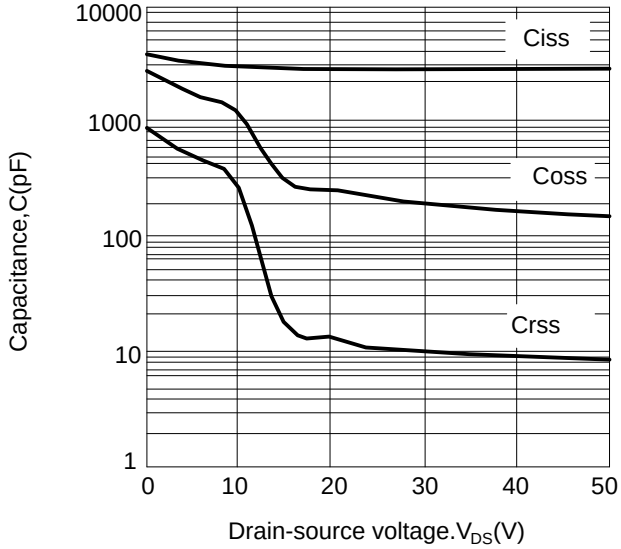


Figure 4:Capacitance characteristics

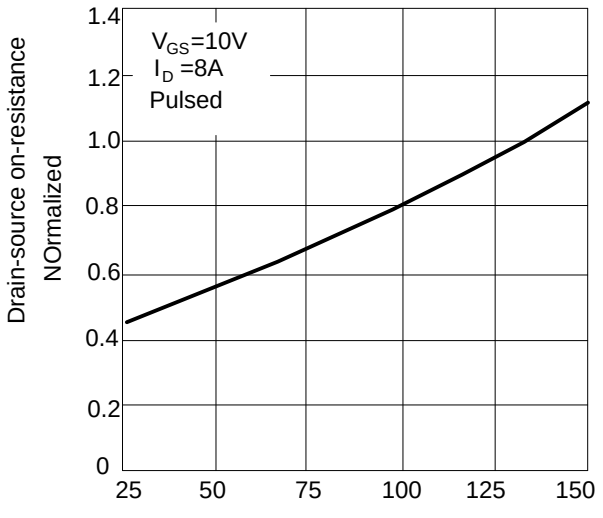


Figure 5:Drain-source on-resistance vs. junction temperature

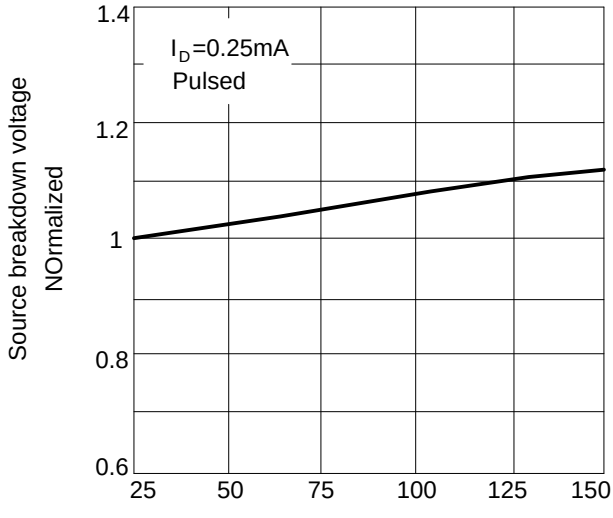


Figure 6:Breakdown voltage vs. junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

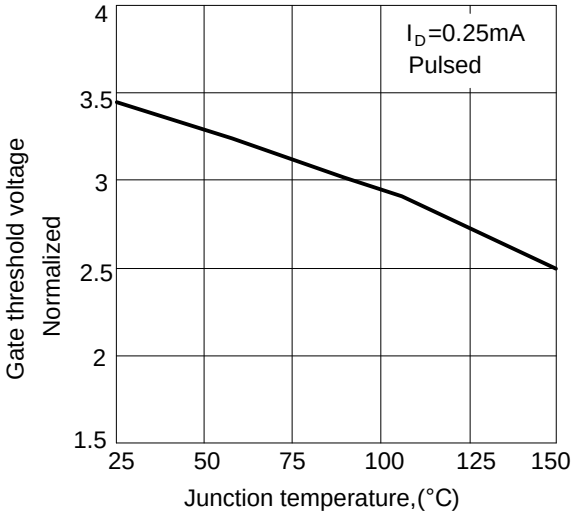


Figure 7:Gate threshold voltage vs. junction temperature

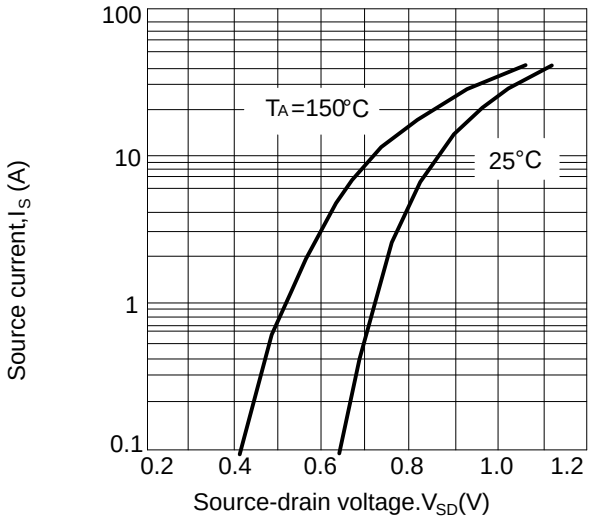


Figure 8:Source current vs.source-drain voltage

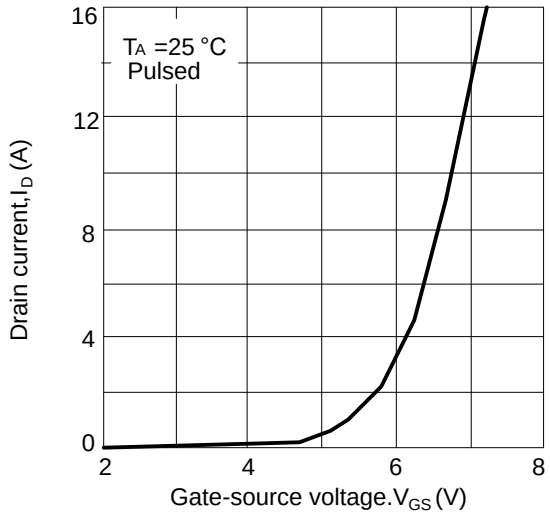


Figure 9:Drain current vs. case-source voltage

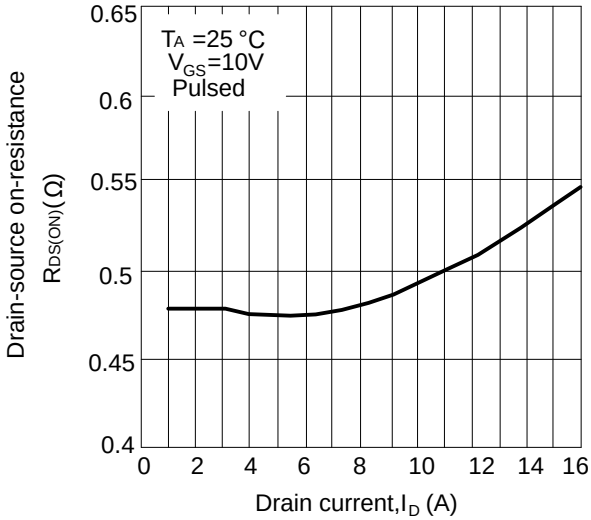


Figure 10:Drain-source on-resistance vs. drain current

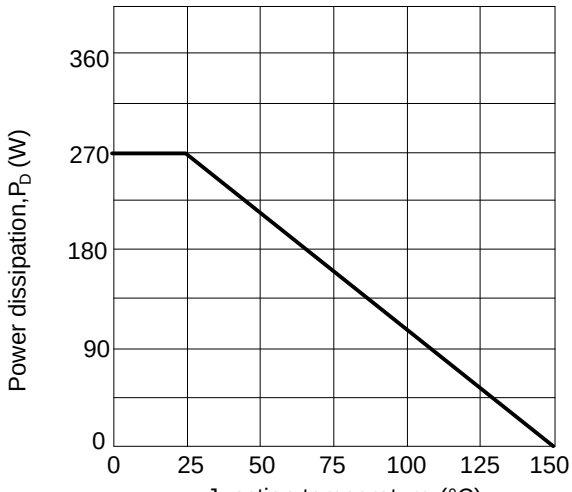


Figure 11:Power dissipation vs.junction temperature

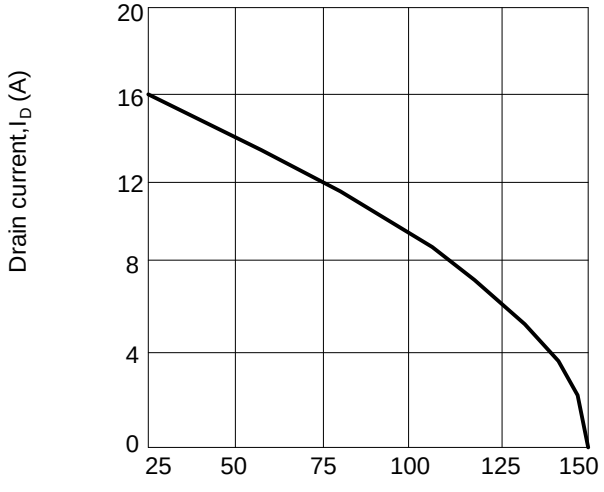


Figure 12:Drain current vs.junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

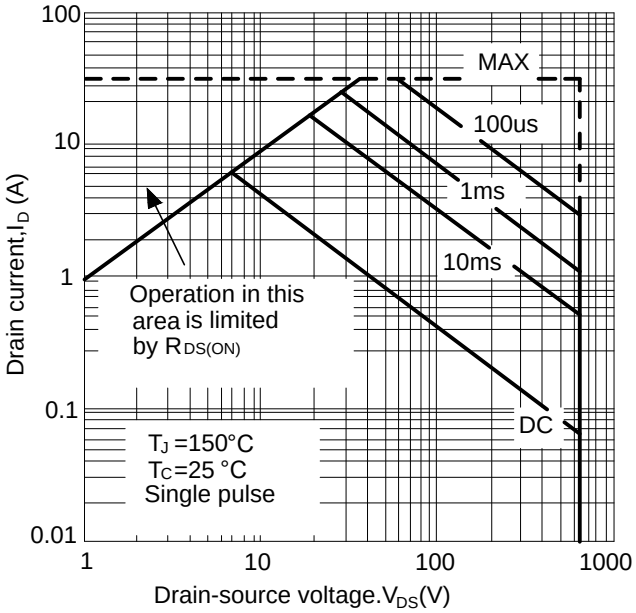
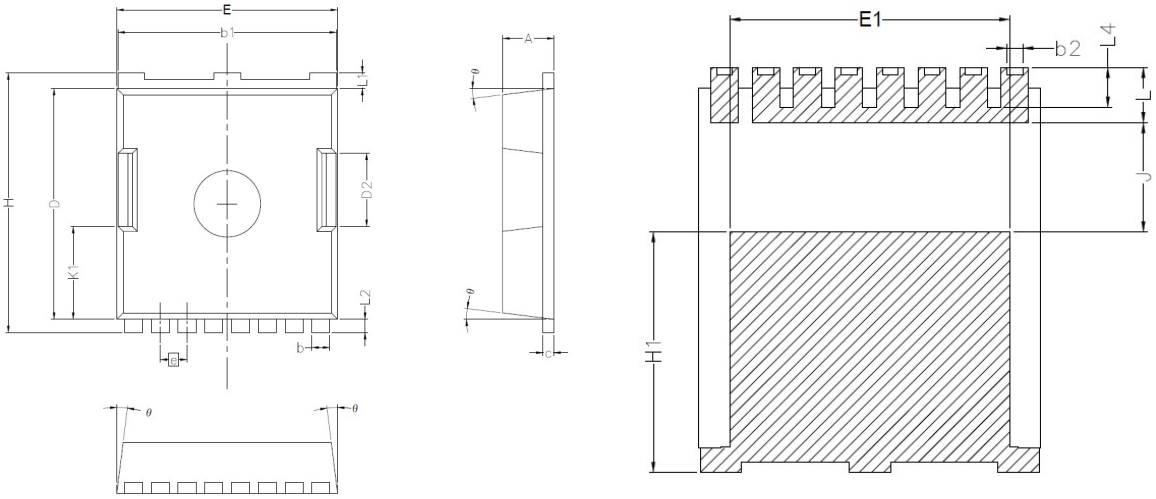


Figure 13:Safe operating area

■TOLL-8L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimesions In Millimeters	
	Min.	Max.
A	2.20	2.40
b	0.70	0.90
b1	9.70	9.90
b2	0.42	0.50
c	0.40	0.60
D	10.28	10.58
D2	3.10	3.50
E	9.70	10.10
E1	7.90	8.30
e	1.20BSC	
H	11.48	11.88
H1	6.75	7.15
N	8	
J	3.00	3.30
K1	3.98	4.38
L	1.40	1.80
L1	0.60	0.80
L2	0.50	0.70
L4	1.00	1.30
θ	4°	10°