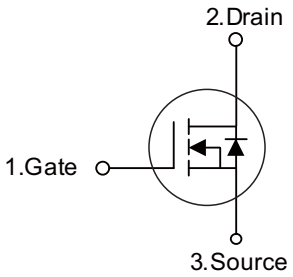
■ PRODUCT CHARACTERISTICS

VDSS	500V
R_{DS} (on)typ(@$_{VGS}$ =10 V)	0.18Ω
Qg@type	175nC
ID	30A

Symbol

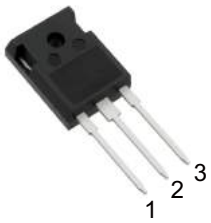


■ APPLICATIONS

- High efficiency switch mode power supplies
- Electronic ballasts
- LED power supply

■ FEATURES

* High Switching Speed
* 100% Avalanche Tested



TO-247

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT30N50N	TO-247	30 pieces/Tube

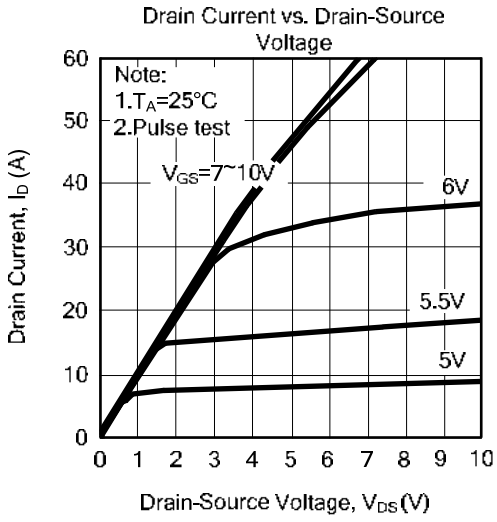
■ ABSOLUTE MAXIMUM RATINGS (T_C = 25°C, unless otherwise specified)

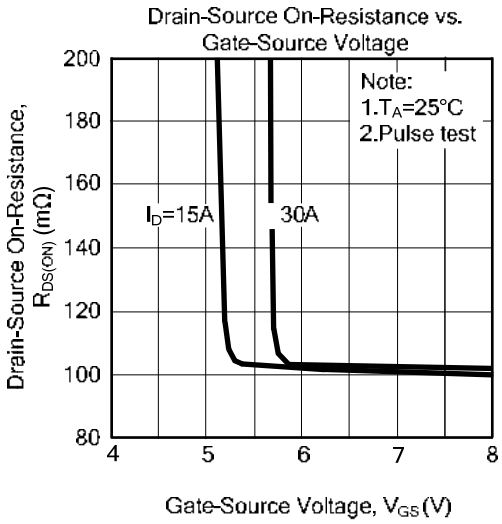
PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	500	V
Gate-Source Voltage		V_{GSS}	±30	V
Drain Current	Continuous	I_D	30	A
	Pulsed	I_{DM}	60	A
Avalanche Energy		E_{AS}	505	mJ
Peak Diode Recovery dv/dt		dv/dt	1.05	V/ns
Power Dissipation		P_D	320	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

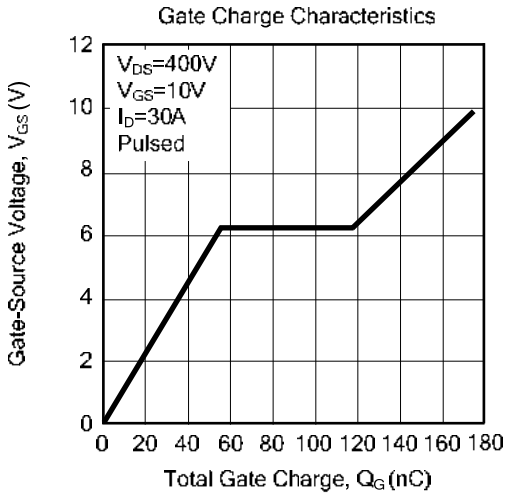
■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

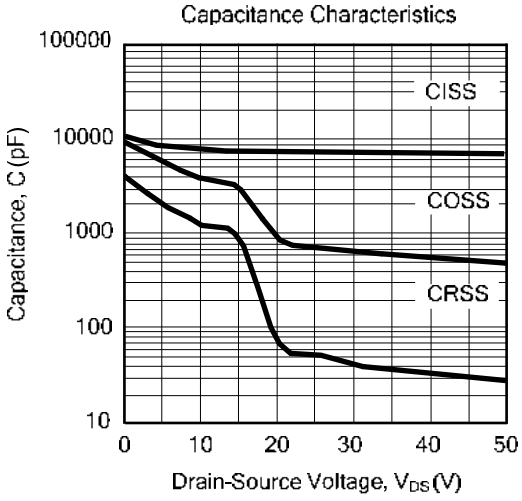
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	500	-	-	V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=500V, V_{GS}=0V	-	-	10	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+30V, V_{DS}=0V	-	-	+100	nA
	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=15A	-	175	220	mΩ
Dynamic parameters							
Input Capacitance		C_{ISS}	V_{GS}=0V, V_{DS}=25V, f=1.0MHz	-	7150	-	pF
Output Capacitance		C_{OSS}		-	770	-	pF
Reverse Transfer Capacitance		C_{RSS}		-	55	-	pF
Switching parameters							
Total Gate Charge		Q_G	V_{DS}=400V, V_{GS}=10V, I_D=30A I_G=1mA (Note 1, 2)	-	175	-	nC
Gate to Source Charge		Q_{GS}		-	55	-	nC
Gate to Drain Charge		Q_{GD}		-	62	-	nC
Turn-ON Delay Time		$t_{D(ON)}$	V_{DD}=100V, V_{GS}=10V, I_D=30A, R_G=25Ω (Note 1, 2)	-	88	-	ns
Rise Time		t_R		-	80	-	ns
Turn-OFF Delay Time		$t_{D(OFF)}$		-	450	-	ns
Fall-Time		t_F		-	150	-	ns
Source-drain diode ratings and characteristics							
Maximum Body-Diode Continuous Current		I_S		-	-	30	A
Maximum Body-Diode Pulsed Current		I_{SM}		-	-	60	A
Drain-Source Diode Forward Voltage		V_{SD}	I_S=30A, V_{GS}=0V	-	-	1.4	V
Body Diode Reverse Recovery Time		t_{rr}	I_S=30A, V_{GS}=0V, dI_F/dt=100A/μs (Note 1)	-	580	-	ns
Reverse Recovery Charge		Q_{rr}		-	23	-	μC

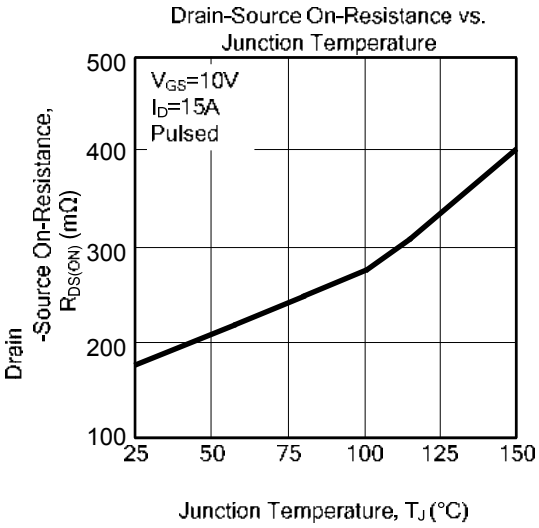
■ TYPICAL CHARACTERISTICS

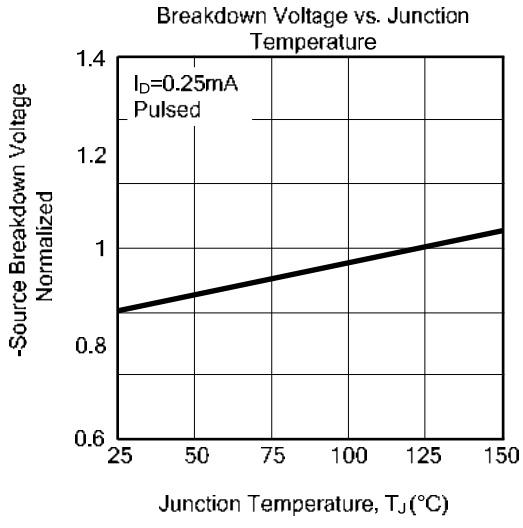




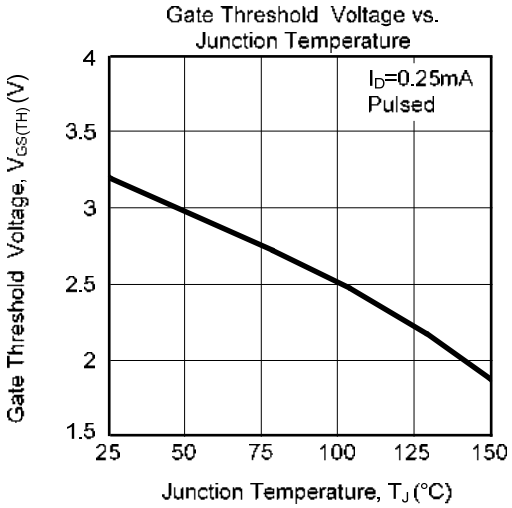


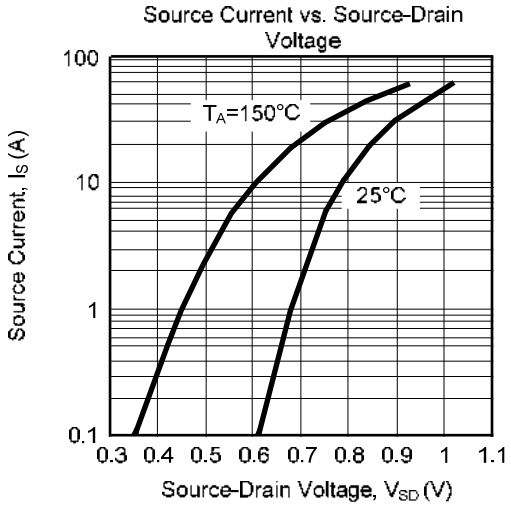


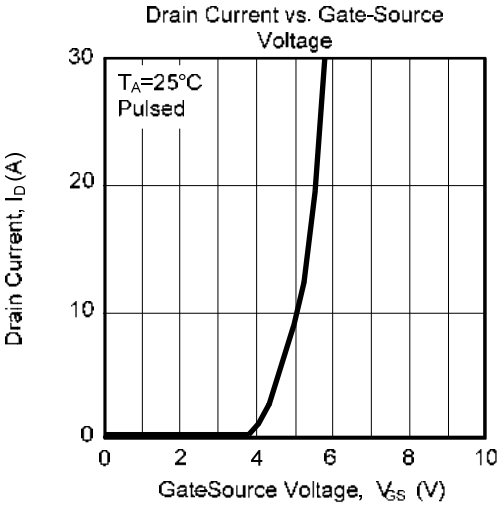


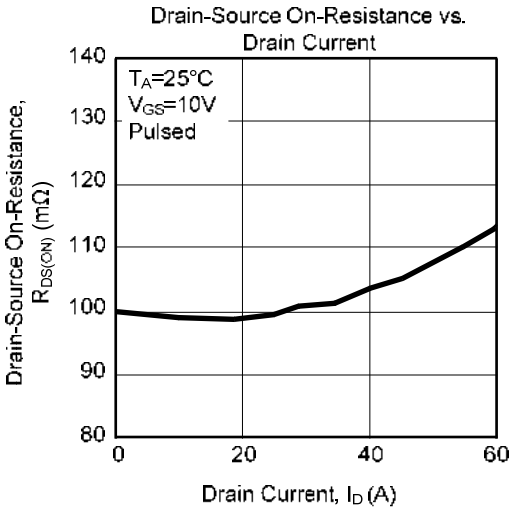


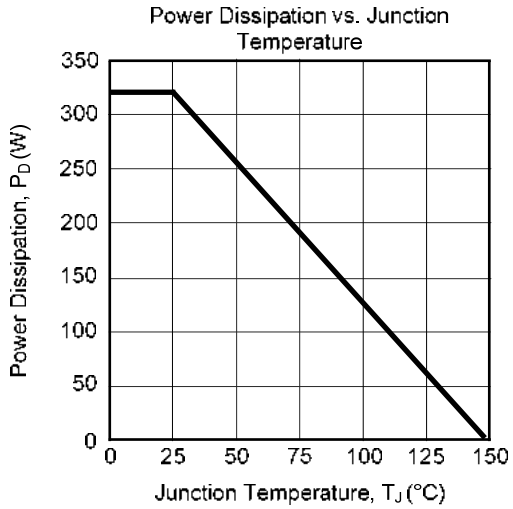
■ TYPICAL CHARACTERISTICS(Cont.)

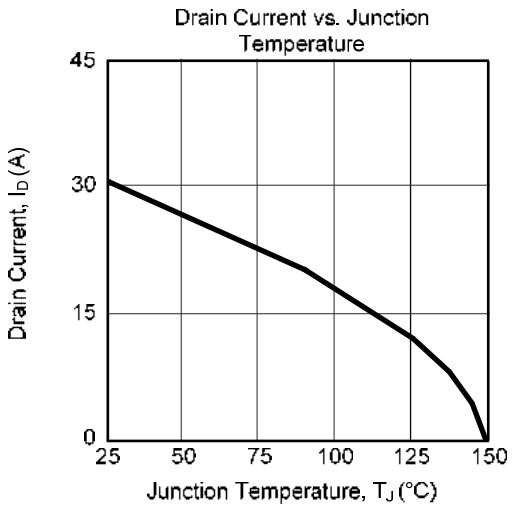




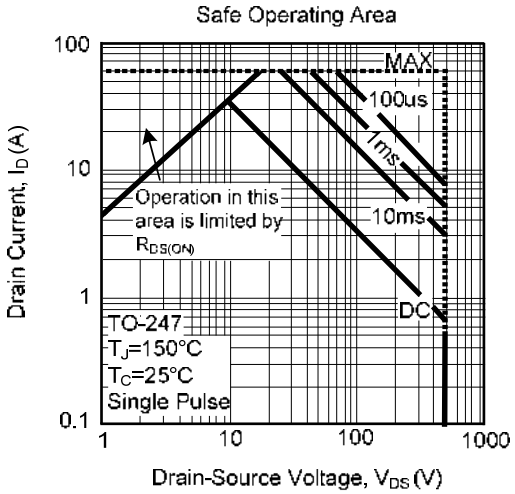








■ TYPICAL CHARACTERISTICS(Cont.)



■ TO-247-3L PACKAGE OUTLINE DIMENSIONS

