

PRODUCT CHARACTERISTICS

V_{DS}	600V
$R_{DS(ON)}$ Typ(@ $V_{GS}=10V$)	0.24 Ω
Qg@typ	83nC
I_D	28A

APPLICATIONS

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

FEATURE

- * High Switching Speed
- * Improved dv/dt capability

ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
MOT28N60N	N/A	TO-247	30 pieces/Tube

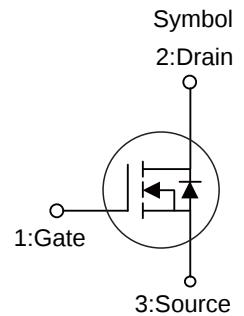
ABSOLUTE MAXIMUM RATINGS($T_A=25^{\circ}C$, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 30	V
Drain Current Continuous(@ $V_{GS}=10V$, $T_A=25^{\circ}C$)	I_D	28	A
Drain Current Pulsed	I_{DM}	112	A
Avalanche Energy *	E_{AS}	2680	mJ
Power Dissipation	P_D	400	W
Junction Temperature	T_J	+150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R_{thJC}	0.32	$^{\circ}C/W$

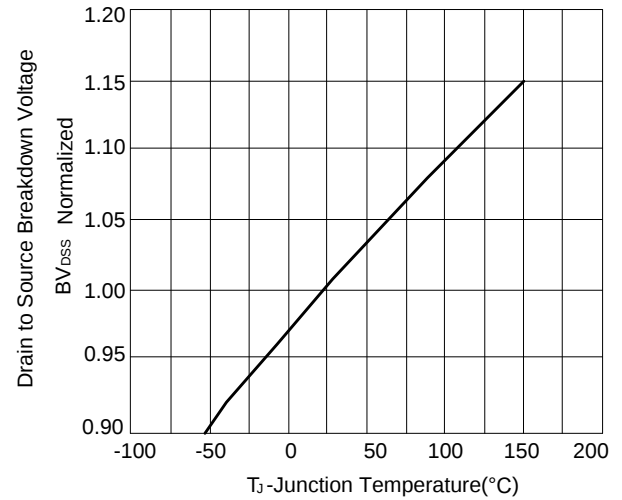
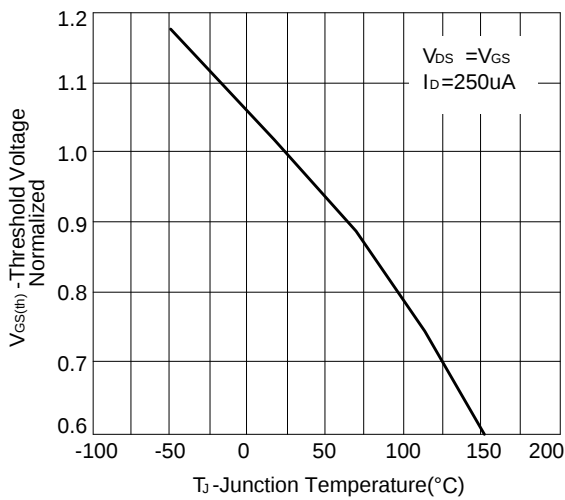
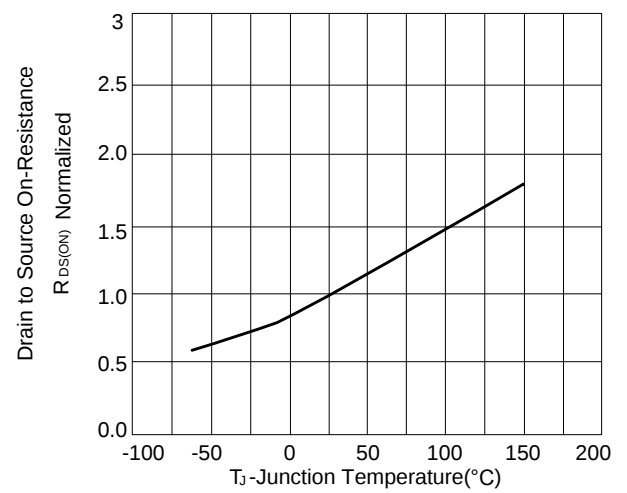
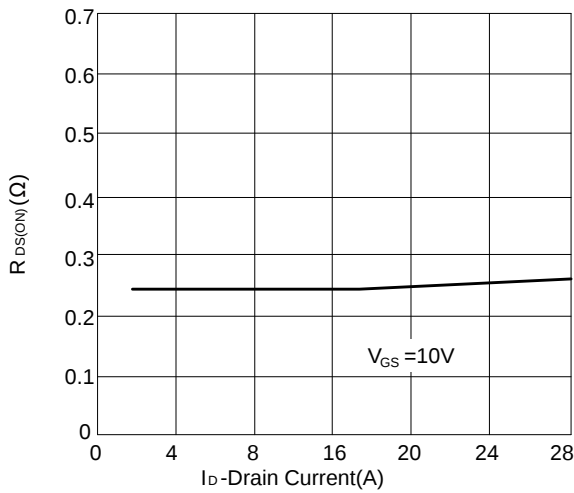
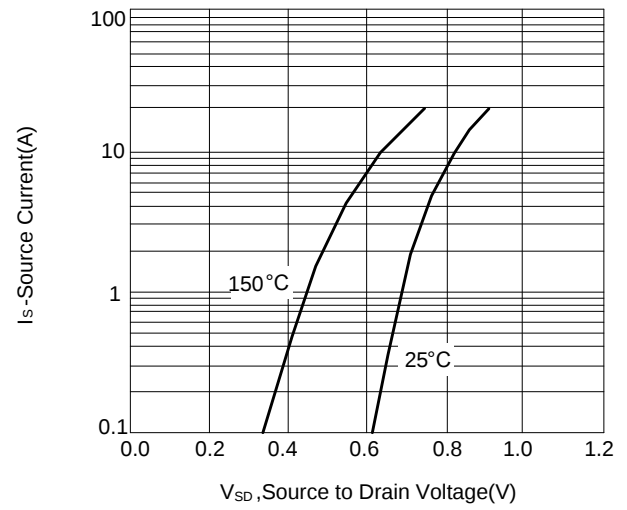
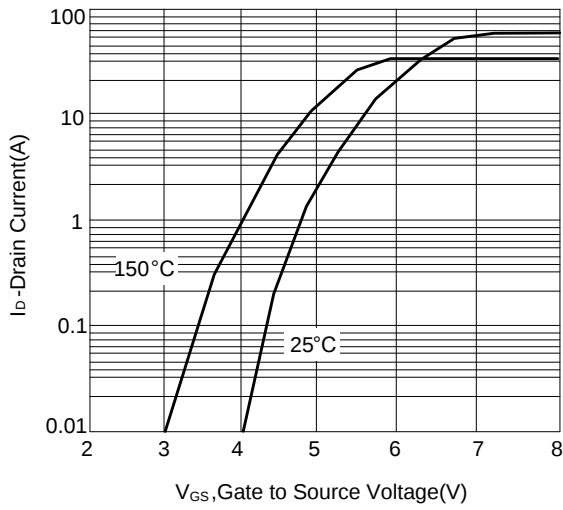
Note: * EAS condition: $T_J=25^{\circ}C$, $V_{DD}=50V$, $V_G=10V$, $L=10mH$, $R_g=25\Omega$



■ ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain to Source Breakdown Voltage	V _{DSS}	V _{GS} =0V, I _D =250μA	600	-	-	V
Drain to Source Leakage Current	I _{DSS}	V _{DS} =600V, V _{GS} =0V	-	-	1	μA
Gate to Source Forward Leakage	I _{GSS(F)}	V _{DS} =0V, V _{GS} =+30V	-	-	100	nA
Gate to Source Reverse Leakage	I _{GSS(R)}	V _{DS} =0V, V _{GS} =-30V	-	-	-100	nA
On characteristics						
Drain to Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =14A	-	0.24	0.29	Ω
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	2	-	4	V
Dynamic characteristics						
Gate capacitance	R _g	V _{GS} =0V, V _{DS} =0V ,f=1.0MHz	-	1.6	-	Ω
Forward Transconductance	g _{fs}	V _{DS} =10V, I _D =3A	-	11	-	S
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V f=1.0MHz	-	4600	-	pF
Output Capacitance	C _{oss}		-	292	-	pF
Reverse Transfer Capacitance	C _{rss}		-	2.7	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	t _{d(ON)}	I _D =28 A, V _{DS} =300V R _G =10Ω ,V _{GS} =10V	-	56	-	ns
Rise Time	t _r		-	83	-	ns
Turn-off Delay Time	t _{d(OFF)}		-	107	-	ns
Fall Time	t _f		-	59	-	ns
Total Gate Charge	Q _g	I _D =28 A, V _{DS} =300V V _{GS} =10V	-	83	-	nC
Gate to Source Charge	Q _{gs}		-	26.4	-	nC
Gate to Drain("Miller") Charge	Q _{gd}		-	27.3	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I _s		-	-	28	A
Maximum Pulsed Current(Body Diode)	I _{SM}		-	-	112	A
Diode Forward Voltage	V _{SD}	I _{SD} =1A, V _{GS} =0V	-	0.7	1.2	V
Reverse Recovery Time	t _{rr}	I _{SD} =28A, T _J =25℃	-	514	-	ns
Reverse Recovery Charge	Q _{rr}	di /dt=100A/μs	-	8.57	-	uC

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)

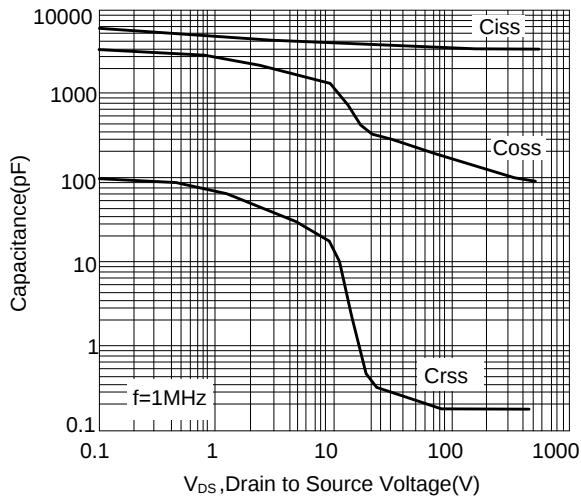


Figure 7: Capacitance vs Drain to Source Voltage

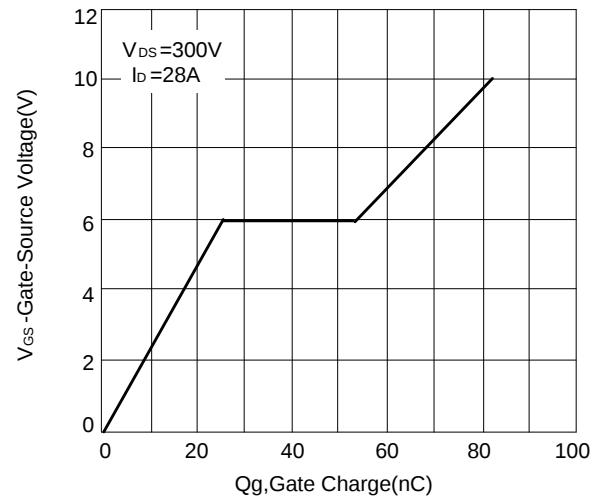


Figure 8: Gate Charge vs Gate to Source Voltage

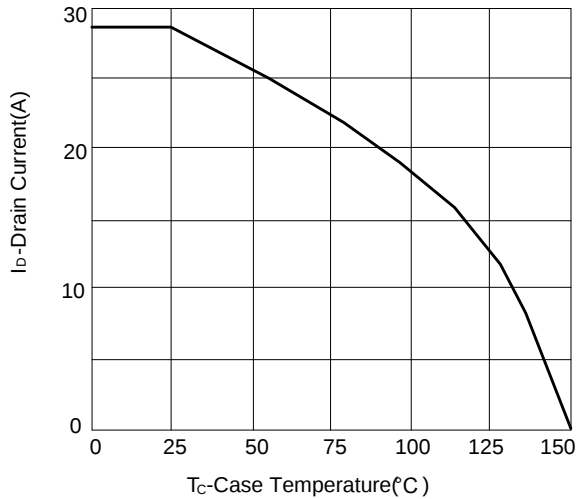


Figure 9: Continuous Drain vs Case Temperature

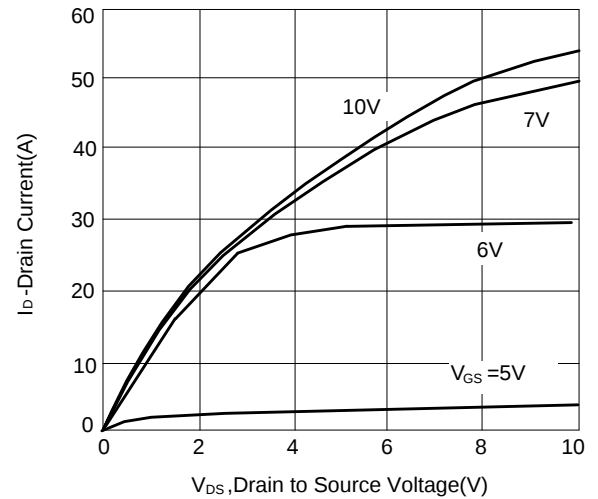


Figure 10: Output Characteristics

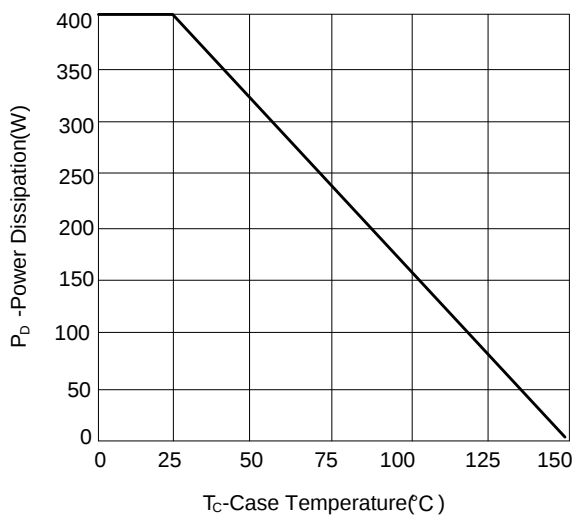


Figure 11: Power Dissipation vs Case Temperature

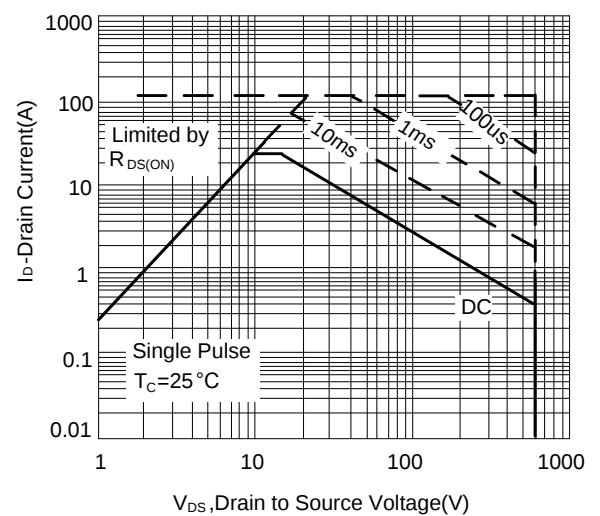


Figure 12: Safe operating Area

The technical drawing shows two views of a mechanical component:

- Front View (Left):** A rectangular plate with three circular holes. Dimensions include overall width 19.92 ± 0.2 , overall height 21 ± 0.2 , and various internal features like $\phi 3 \pm 0.1 \times 0.1$, $R0.5$, and 12.75 ± 0.1 . Three pins are attached at the bottom with heights 4.1 ± 0.2 , 2.15 ± 0.15 , and 3.15 ± 0.15 .
- Side View (Right):** Shows the profile of the component with a total thickness of 5 ± 0.2 and pin heights of 1 ± 0.1 , 2.1 , and 0.6 ± 0.05 .