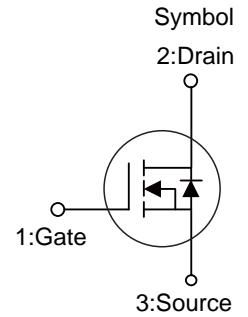


■ PRODUCT CHARACTERISTICS

$V_{DSS}$	650V
$R_{DS(ON)}$ Typ(@ $V_{GS}=10V$ )	0.47 $\Omega$
Qg@typ	57nC
$I_D$	16A

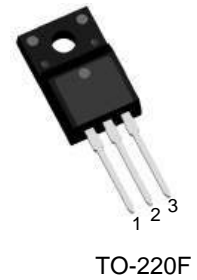


■ APPLICATIONS

- \* 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		
N/A	MOT16N65HF	TO-220F	50 pieces/Tube

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DSS}$	650	V
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current Continuous(@ $V_{GS}=10V, T_A=25^\circ C$ )	$I_D$	16	A
Drain Current Pulsed	$I_{DM}$	64	A
Avalanche Energy *	$E_{AS}$	1620	mJ
Peak Diode Recovery dv/dt	dv/dt	5.0	V/ns
Power Dissipation	$P_D$	60	W
Junction Temperature	$T_J$	+150	$^\circ C$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ C$

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Ambient	$R_{thJA}$	62.5	$^\circ C/W$
Junction to Case	$R_{thJC}$	2.08	$^\circ C/W$

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	$V_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	650	-	-	V
Drain to Source Leakage Current	$I_{DSS}$	$V_{DS}=650V, V_{GS}=0V$	-	-	1	$\mu A$
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	$R_{DS(ON)}$	$V_{GS}=10V, I_D=8A$	-	0.47	0.55	$\Omega$
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	-	4	V
Dynamic characteristics						
Gate capacitance	$R_g$	$V_{GS}=0V, V_{DS}=0V, f=1.0\text{MHz}$	-	2.6	-	$\Omega$
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=3A$	-	10	-	S
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V$ $f=1.0\text{MHz}$	-	2900	-	pF
Output Capacitance	$C_{oss}$		-	178	-	pF
Reverse Transfer Capacitance	$C_{rss}$		-	1.3	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	$I_D=16A, V_{DS}=325V$ $R_G=25\Omega, V_{GS}=10V$	-	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	$Q_g$	$I_D=16A, V_{DS}=325V$ $V_{GS}=10V$	-	57	-	nC
Gate to Source Charge	$Q_{gs}$		-	15.4	-	nC
Gate to Drain("Miller") Charge	$Q_{gd}$		-	15.8	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	$I_S$		-	-	16	A
Maximum Pulsed Current(Body Diode)	$I_{SM}$		-	-	64	A
Diode Forward Voltage	$V_{SD}$	$I_{SD}=1A, V_{GS}=0V$	-	0.7	1.2	V
Reverse Recovery Time	$t_{rr}$	$I_{SD}=16A, T_J=25^{\circ}\text{C}$ $di/dt=100A/\mu s$	-	472	-	ns
Reverse Recovery Charge	$Q_{rr}$		-	8400	-	nC

■ TYPICAL CHARACTERISTICS

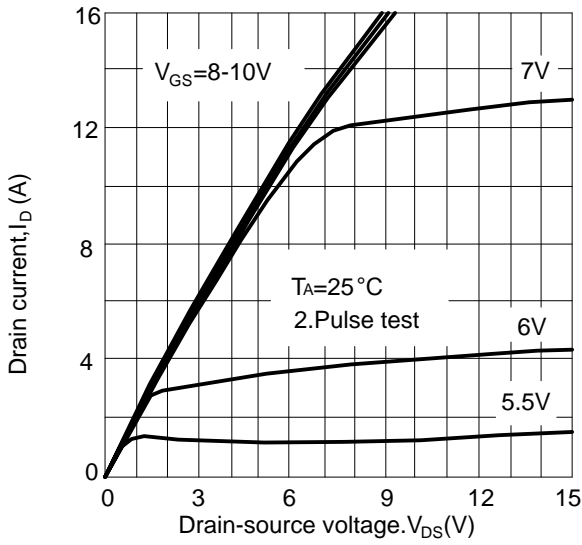


Figure 1: Drain current vs. drain-source voltage

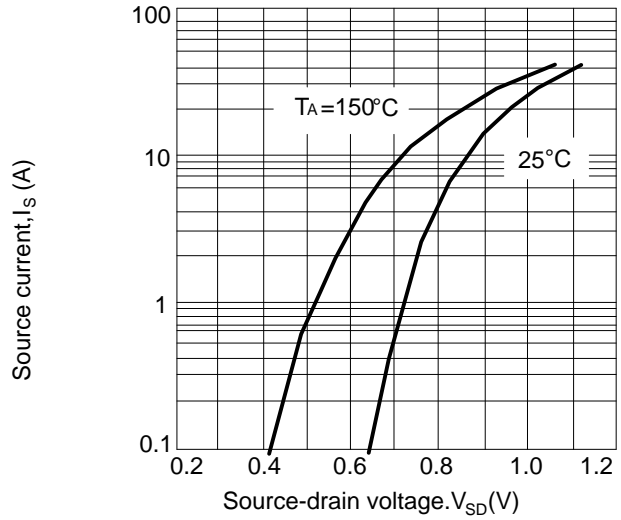


Figure 2: Source current vs. source-drain voltage

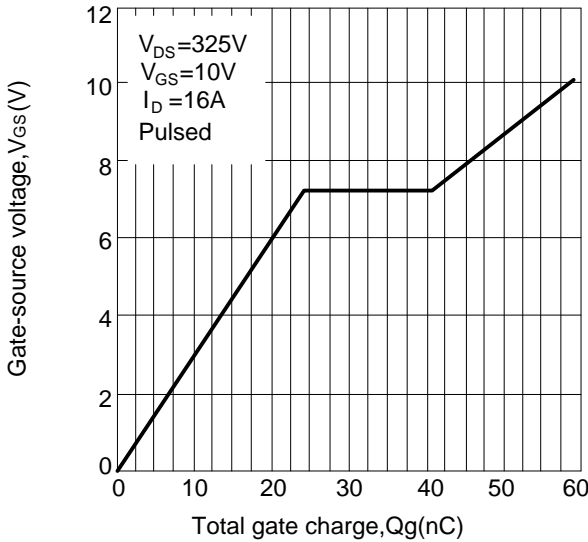


Figure 3: Gate charge characteristics

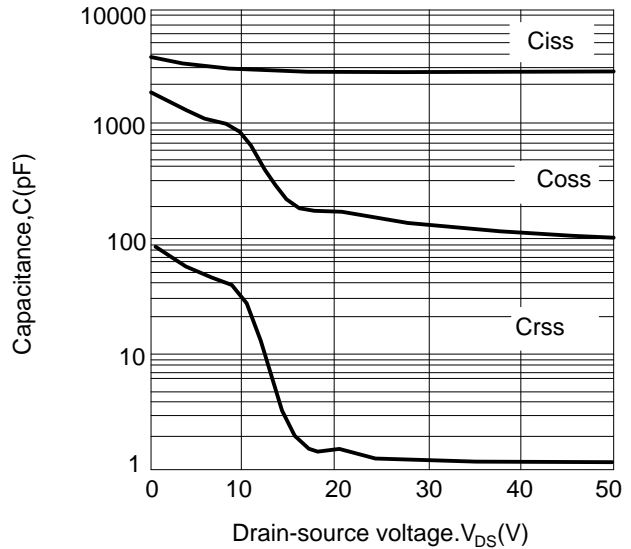


Figure 4: Capacitance characteristics

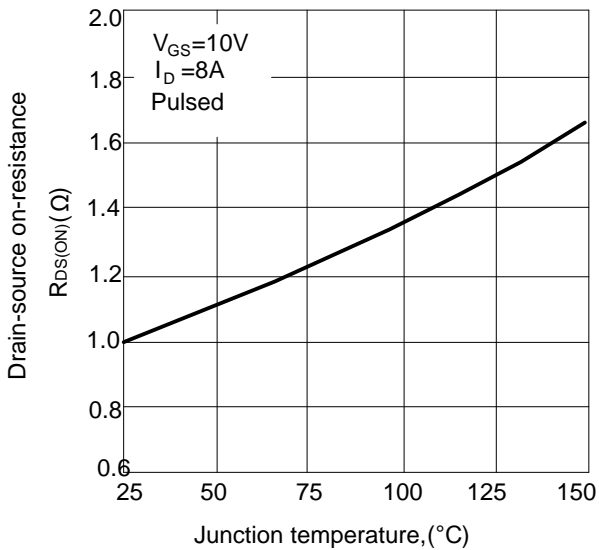


Figure 5: Drain-source on-resistance vs. junction temperature

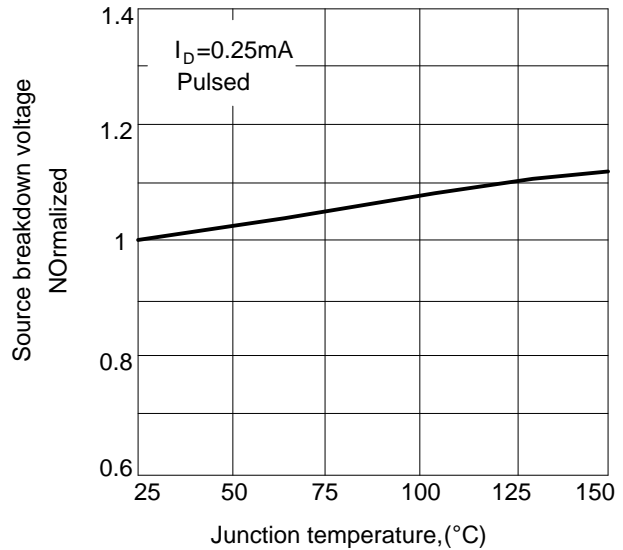


Figure 6: Breakdown voltage vs. junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

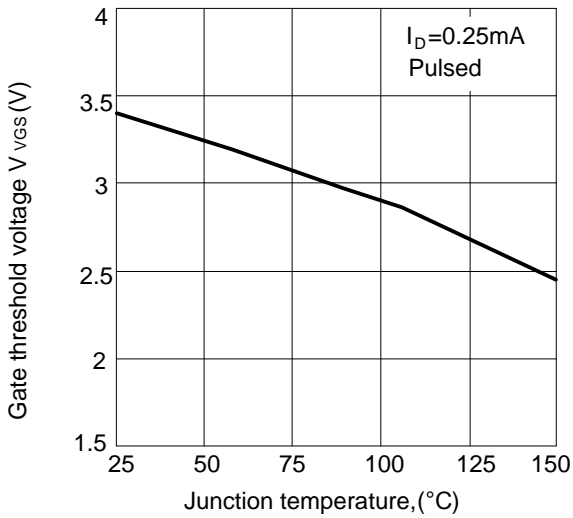


Figure 7: Gate threshold voltage vs. junction temperature

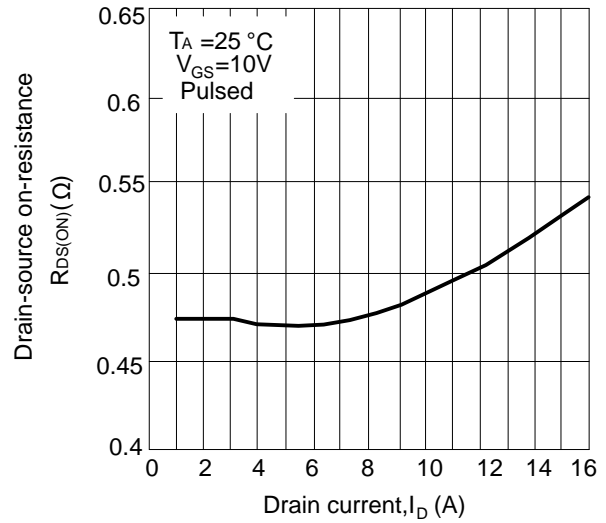


Figure 8: Drain-source on-resistance vs. drain current

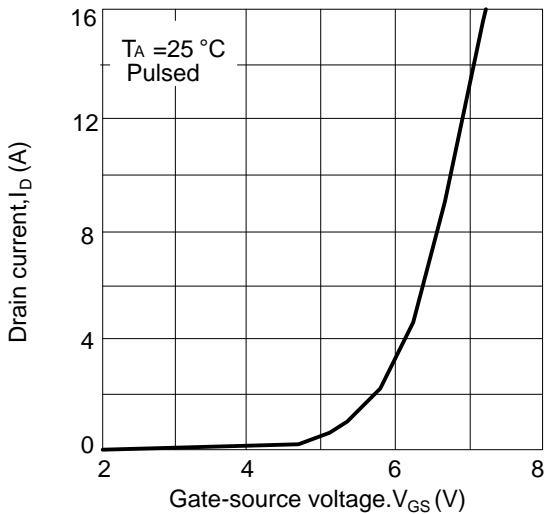


Figure 9: Drain current vs. case-source voltage

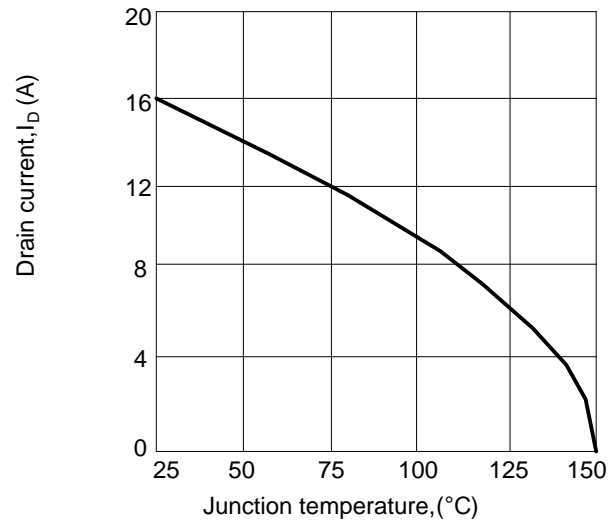


Figure 10: Drain current vs. junction temperature

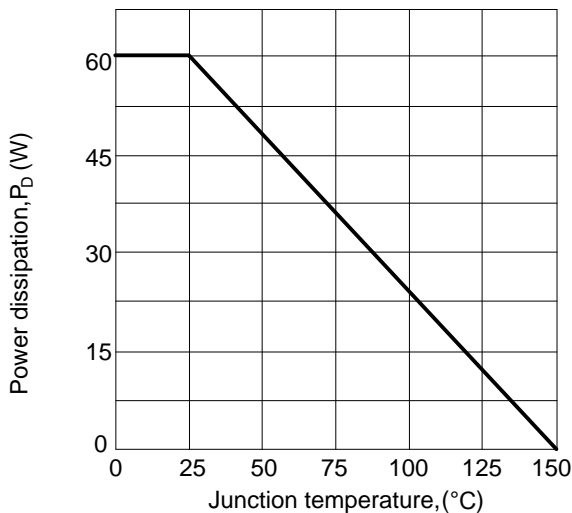


Figure 11: Power dissipation vs. junction temperature

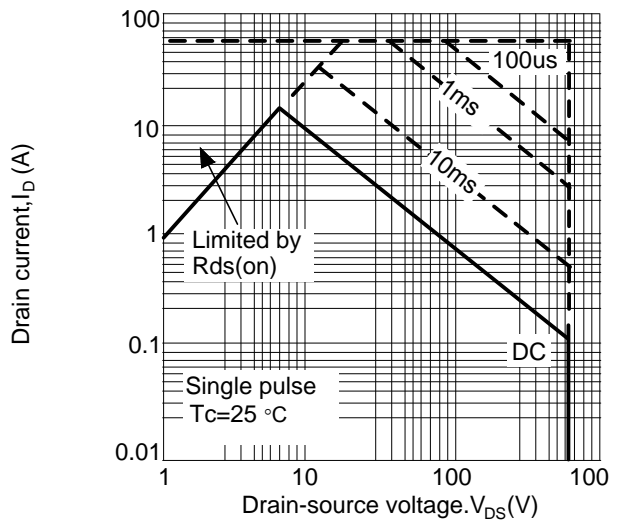


Figure 12: Safe operating area

