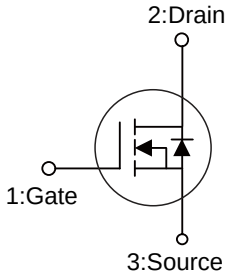
PRODUCT CHARACTERISTICS

V_{DSS}	650V
$R_{DS(ON)}$ Typ(@V_{GS}=10V)	1.12Ω
Qg@typ	24nC
I_D	7A

Symbol



APPLICATIONS

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



TO-220F

FEATURE

* High Switching Speed
* Improved dv/dt capability

RoHS

ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT7N65F	TO-220F	50 pieces/Tube

ABSOLUTE MAXIMUM RATINGS(T_A=25 ,unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	650	V
Gate-Source Voltage	V_{GSS}	30	V
Drain Current Continuous(@V_{GS}=10V ,T_A=25)	I_D	7	A
Drain Current Pulsed	I_{DM}	28	A
Avalanche Energy *	E_{AS}	760	mJ
Peak Diode Recovery dv/dt	dv/dt	5.0	V/ns
Power Dissipation	P_D	36	W
Junction Temperature	T_J	+150	
Storage Temperature	T_{STG}	-55~ +150	

THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Ambient	R_{thJA}	62.5	/W
Junction to Case	R_{thJC}	3.46	/W

Note: * EAS condition: T_J=25 ,V_{DD}=50V,V_G=10V ,L=10mH,R_g =25Ω

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain to Source Breakdown Voltage	V_{DSS}	V_{GS}=0V,I_D=250µA	650	-	-	V
Drain to Source Leakage Current	I_{DSS}	V_{DS}=650V,V_{GS}=0V	-	-	1	µA
Gate to Source Forward Leakage	$I_{GSS(F)}$	V_{DS}=0V,	-	-	100	nA
Gate to Source Reverse Leakage	$I_{GSS(R)}$	V_{DS}=0V,	-	-	-100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D=250µA	2	-	4	V
Dynamic characteristics						
Forward Transconductance	g_{fs}	V_{DS}=10V,I_D=3A	-	6	-	S
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V f=1.0MHz	-	1200	-	pF
Output Capacitance	C_{oss}		-	81	-	pF
Reverse Transfer Capacitance	C_{rss}		-	1.9	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	I_D=7A, V_{DS}=325V R_G=10Ω	-	18	-	ns
Rise Time	t_r		-	15	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	34	-	ns
Fall Time	t_f		-	15	-	ns
Total Gate Charge	Q_g	I_D=7A, V_{DS}=325V V_{GS}=10V	-	24	-	nC
Gate to Source Charge	Q_{gs}		-	5.2	-	nC
Gate to Drain("Miller") Charge	Q_{gd}		-	11	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I_S		-	-	7	A
Maximum Pulsed Current(Body Diode)	I_{SM}		-	-	28	A
Diode Forward Voltage	V_{SD}	I_{SD}=1A, V_{GS}=0V	-	0.72	1.2	V
Reverse Recovery Time	t_{rr}	I_{SD} =7A, T_J=25 dI/dt=100A/µs	-	750	-	ns
Reverse Recovery Charge	Q_{rr}		-	4640	-	nC

Reverse Transfer 2F5 9 Tf [(pF)]TJ E4.638 ET Q gs BT 1 0 0 1 443.805 293.618 Tm 0 0 TD 0 Tr 0 Tc 0 Tw /FXF2 9 Tf [(=0V)]TJ ET Q

TYPICAL CHARACTERISTICS

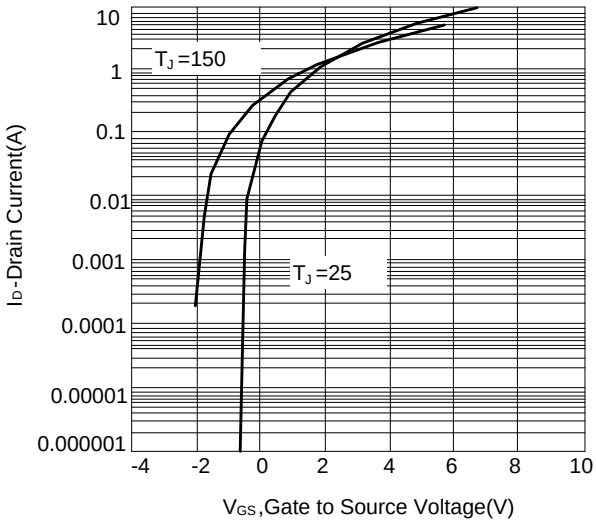


Figure 1: Transfer Characteristics

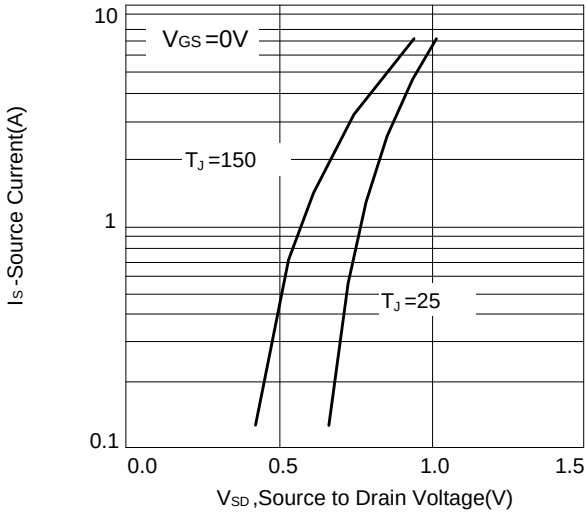


Figure 2: Body Diode Characteristics

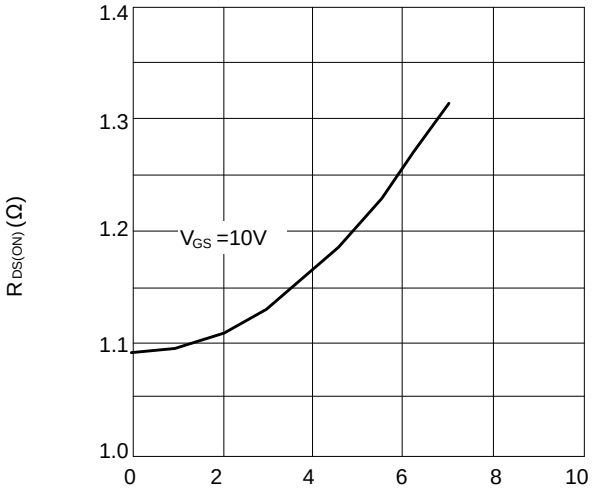


Figure 3: Drain to Source On-Resistance vs Drain Current

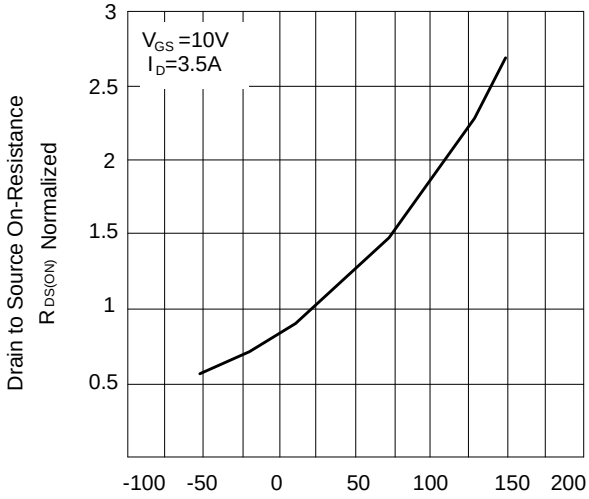


Figure 4: Drain to Source On-Resistance vs.Junction Temperature

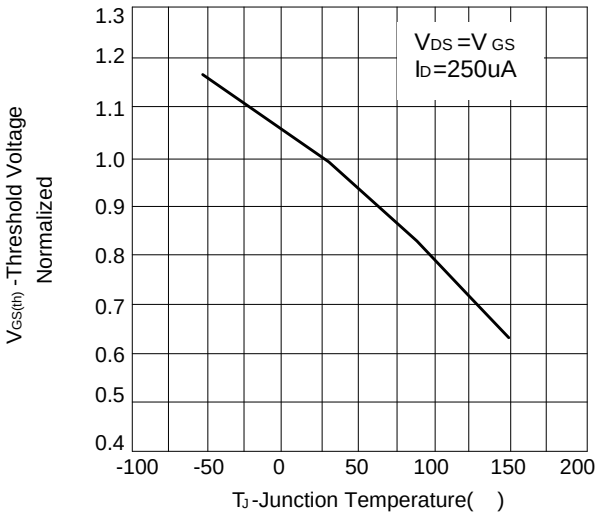


Figure 5: Threshold Voltage vs Junction Temperature

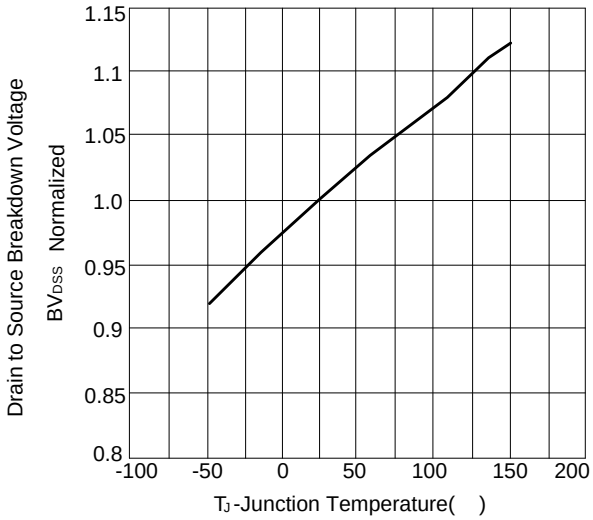


Figure 6: Breakdown Voltage vs Junction Temperature

