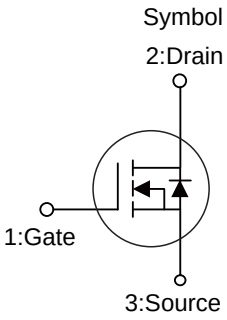
PRODUCT CHARACTERISTICS

V_{DSS}	650V
$R_{DS(ON)}$Typ(@V_{GS}=10V)	2Ω
Qg@typ	13nC
I_D	5A



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	MOT5N65D	TO-252	2500 pieces/Reel

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

Parameter	Symbol	Ratings	Unit
		650	V
		30	V
		5	A
	I	20	A
	E_{AS}		mJ
	dv/dt	5.0	V/ns
	P_D	85	W
	T_J	+150	
	T_{STG}	-55~ +150	
	R_{thJA}	62.5	/W
	R_{thJC}	1.47	/W

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, 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=2.5A	-	2	2.5	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	-	2.7	-	Ω
Forward Transconductance	g_{fs}	V_{DS}=10V,I_D=3A	-	3	-	S
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V f=1.0MHz	-	628	-	pF
Output Capacitance	C_{oss}		-	47	-	pF
Reverse Transfer Capacitance	C_{rss}		-	1	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	I_D=5A, V_{DS}=325V R_G=10Ω ,V_{GS}=10V	-	14	-	ns
Rise Time	t_r		-	16	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	32	-	ns
Fall Time	t_f		-	11	-	ns
Total Gate Charge	Q_g	I_D=5 A, V_{DS}=325V V_{GS}=10V	-	13	-	nC
Gate to Source Charge	Q_{gs}		-	3	-	nC
Gate to Drain("Miller") Charge	Q_{gd}		-	6.5	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I_S		-	-	5	A
Maximum Pulsed Current(Body Diode)	I_{SM}		-	-	20	A
Diode Forward Voltage	V_{SD}	I_{SD}=1A, V_{GS}=0V	-	0.75	1.2	V
Reverse Recovery Time	t_{rr}	I_{SD} =5 A, T_J=25 dI/dt=100A/μs	-	256	-	ns
Reverse Recovery Charge	Q_{rr}		-	1200	-	nC

TYPICAL CHARACTERISTICS

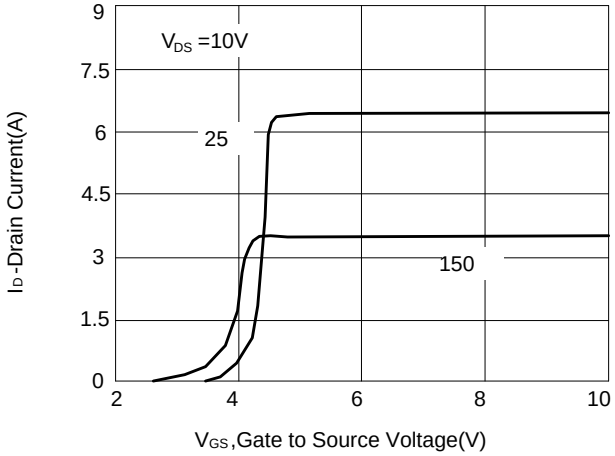


Figure 1: Transfer Characteristics

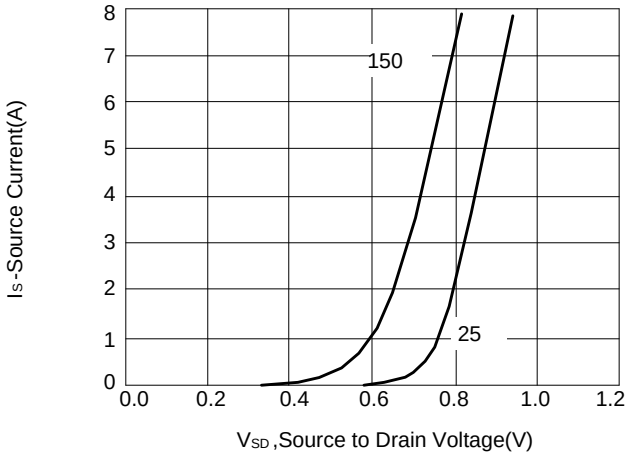


Figure 2: Body Diode Characteristics

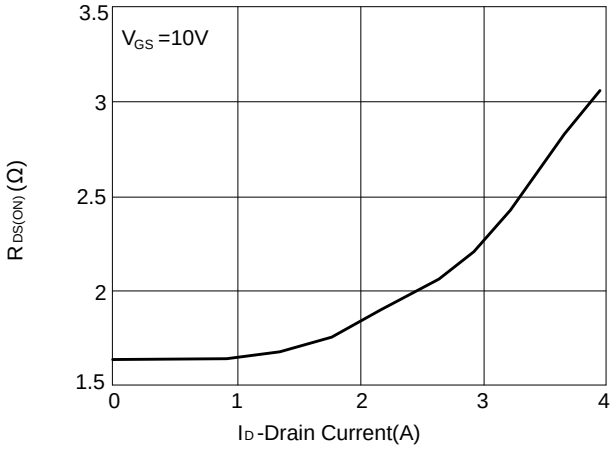


Figure 3: Drain to Source On-Resistance vs Drain Current

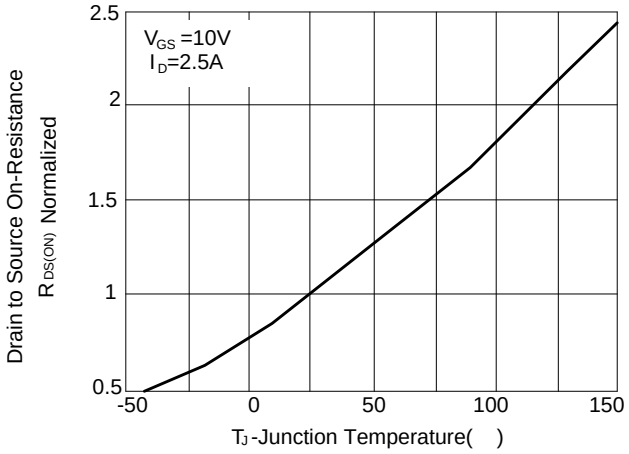


Figure 4: Drain to Source On-Resistance vs.Junction Temperature

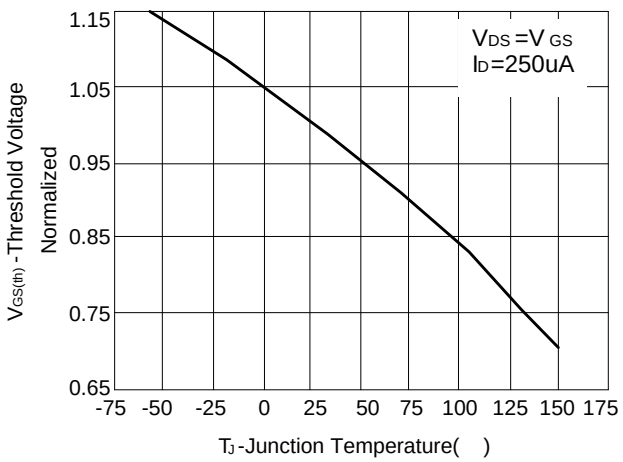


Figure 5: Threshold Voltage vs Junction Temperature

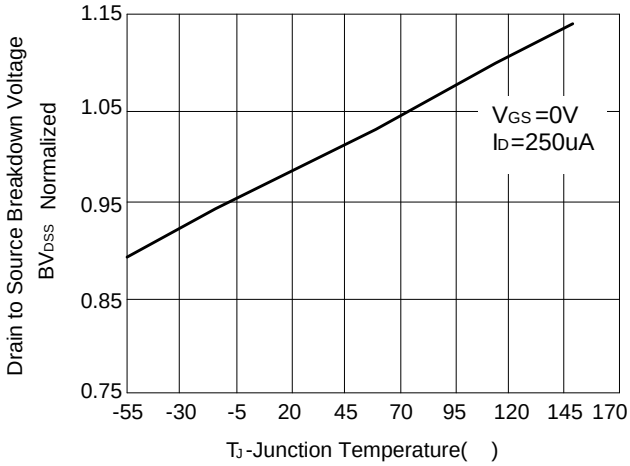
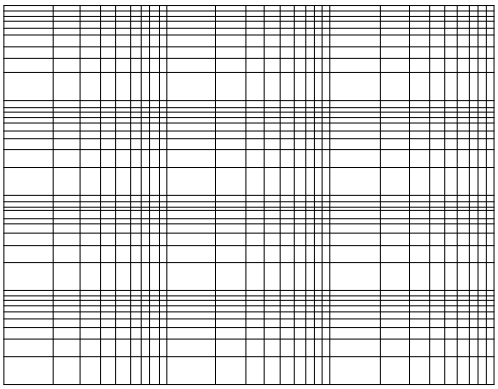
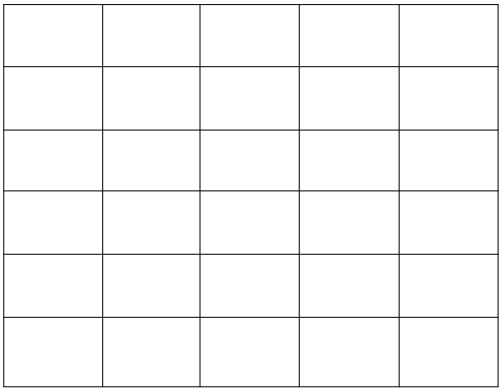
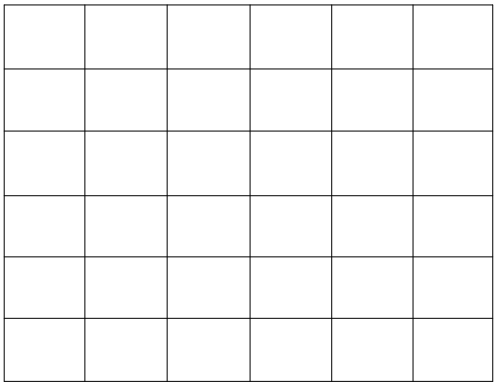


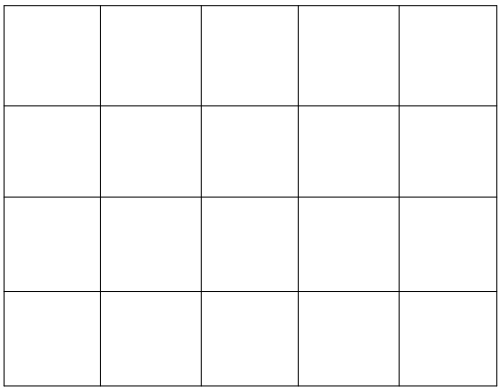
Figure 6: Breakdown Voltage vs Junction Temperature

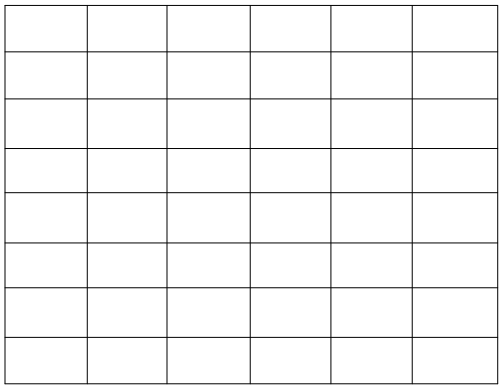
TYPICAL CHARACTERISTICS(Cont.)

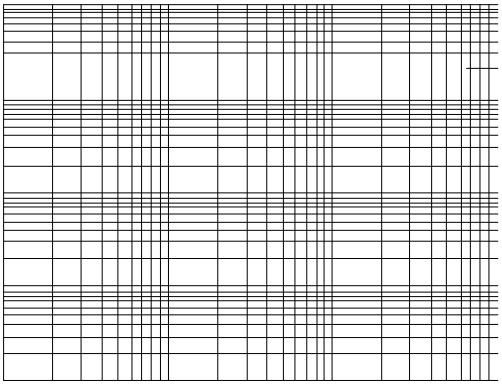












■ TO-252 PACKAGE OUTLINE DIMENSIONS

