

PRODUCT CHARACTERISTICS

V_{DS}	100V
$R_{DS(ON)}$ Typ(@ $V_{GS}=10V$)	87m Ω
$R_{DS(ON)}$ Typ(@ $V_{GS}=4.5V$)	92m Ω
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

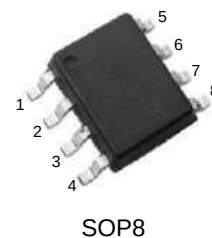
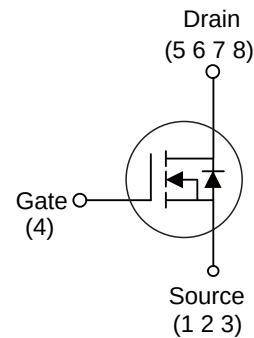
Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT1585S	SOP8	4000 pieces/Reel

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current Continuous(@ $V_{GS}=10V$, $T_A=25^{\circ}C$)	I_D	5	A
Drain Current Pulsed	I_{DM}	20	A
Power Dissipation	P_D	4.5	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}	27.8	$^{\circ}C/W$



■ 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	100	-	-	V
Drain to Source Leakage Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V	-	-	1	μA
Gate to Source Forward Leakage	I _{GSS(F)}	V _{DS} =0V, V _{GS} =+20V	-	-	100	nA
Gate to Source Reverse Leakage	I _{GSS(R)}	V _{DS} =0V, V _{GS} =-20V	-	-	-100	nA
On characteristics						
Drain to Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5A	-	87	95	mΩ
		V _{GS} =4.5V, I _D =4A	-	92	100	mΩ
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6	2.5	V
Dynamic characteristics						
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =5A	-	11	-	S
Input Capacitance	C _{iss}	V _{DS} =20V, V _{GS} =0V f=1.0MHz	-	1031	-	pF
Output Capacitance	C _{oss}		-	41	-	pF
Reverse Transfer Capacitance	C _{rss}		-	33	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	t _{d(ON)}	I _D =5A, V _{DS} =50V R _G =2.5 Ω, V _{GS} =10V	-	11	-	ns
Rise Time	t _r		-	7.4	-	ns
Turn-off Delay Time	t _{d(OFF)}		-	35	-	ns
Fall Time	t _f		-	9.1	-	ns
Total Gate Charge	Q _g	I _D =5 A, V _{DS} =50V V _{GS} =10V	-	21.8	-	nC
Gate to Source Charge	Q _{gs}		-	2.7	-	nC
Gate to Drain("Miller") Charge	Q _{gd}		-	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	-	0.76	1.2	V

■ TYPICAL CHARACTERISTICS

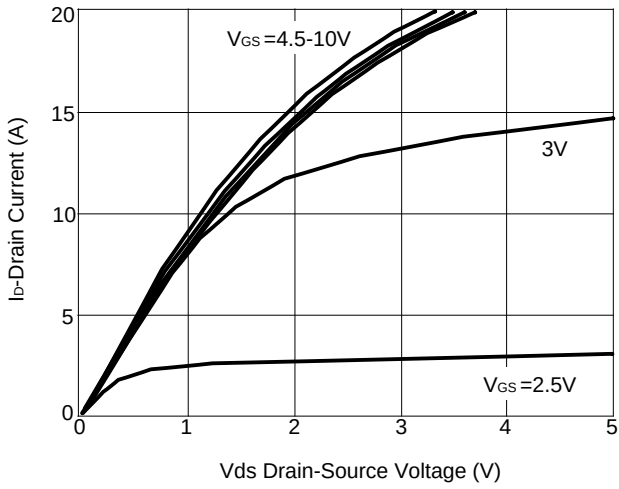


Figure 1: Output Characteristics

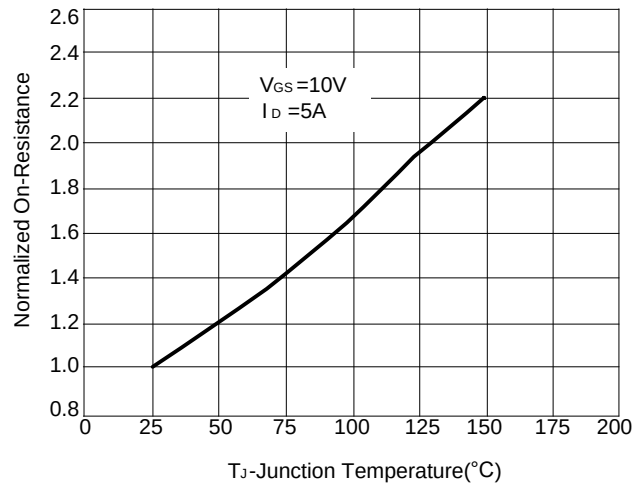


Figure 2: Rdson-Junction Temperature

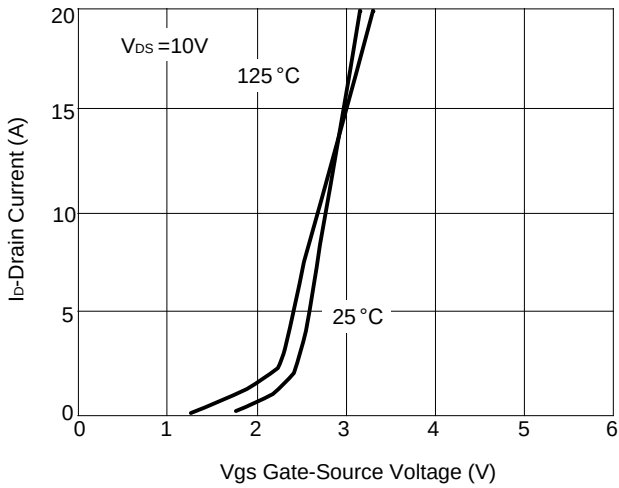


Figure 3: Transfer Characteristics

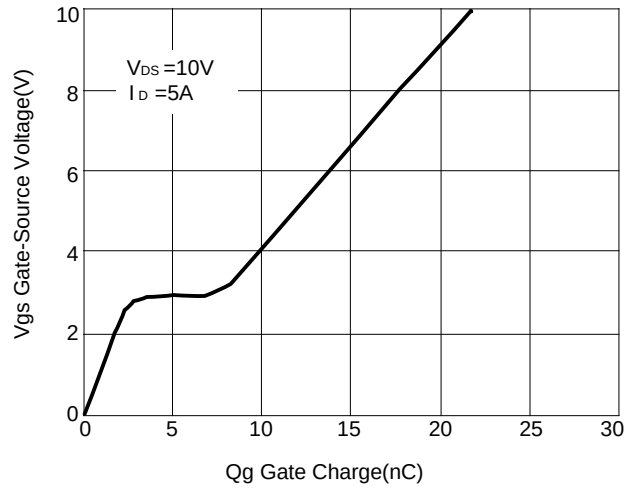


Figure 4: Gate Charge

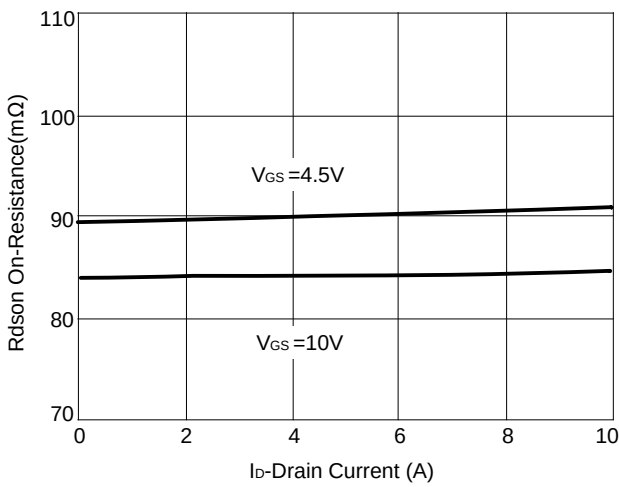


Figure 5: Rdson-Drain Current

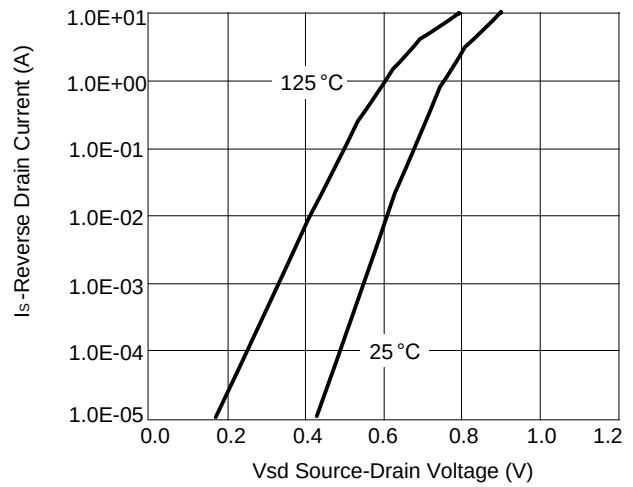


Figure 6: Source-Drain Diode Forward

■ TYPICAL CHARACTERISTICS(Cont.)

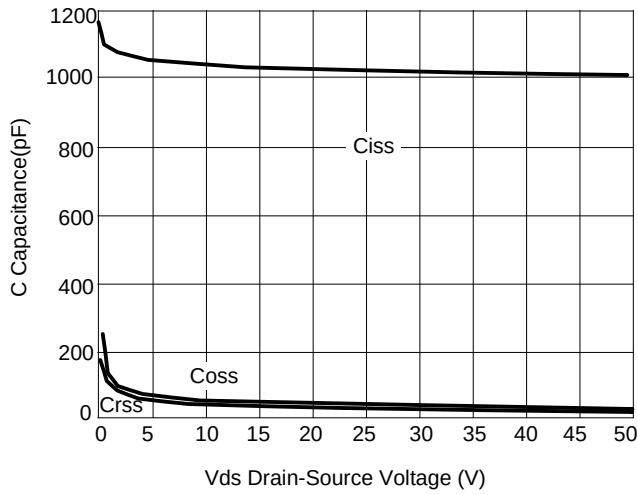


Figure 7: Capacitance vs Vds

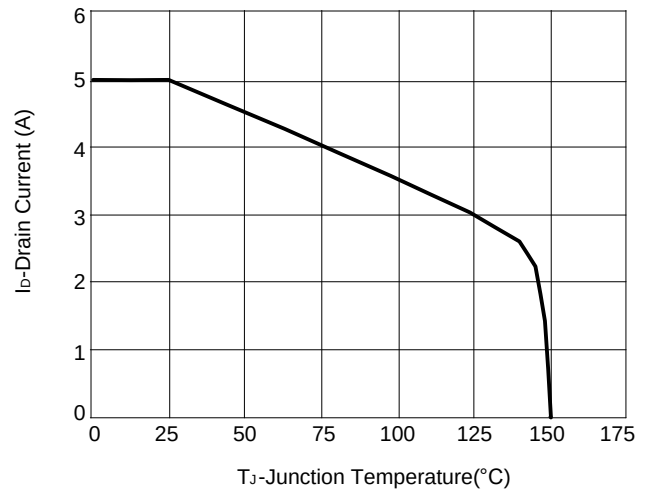


Figure 8: BV_{DSS} vs Junction Temperature

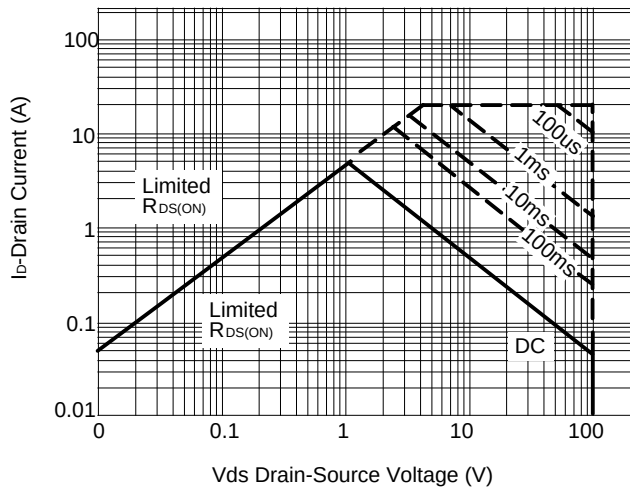


Figure 9: Safe Operation Area

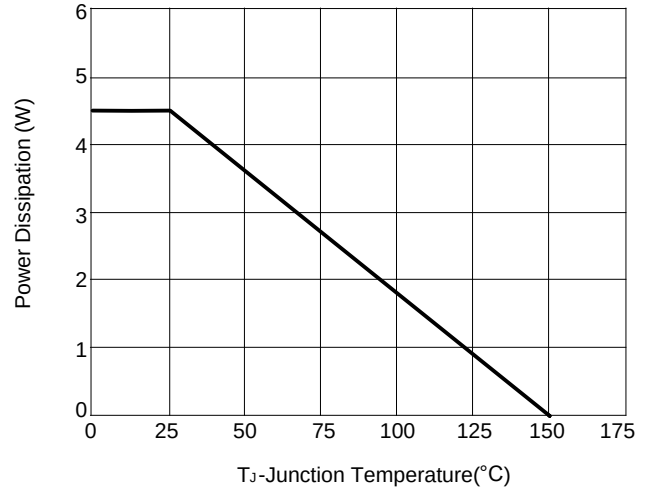


Figure 10: Power De-rating

■ SOP8 PACKAGE OUTLINE DIMENSIONS

