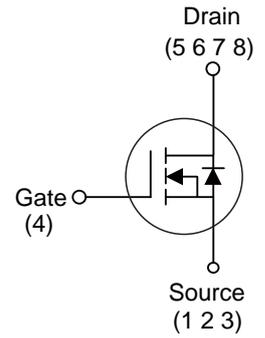


■ PRODUCT CHARACTERISTICS

$V_{DSS}$	100V
$R_{DS(ON)}$ Typ(@ $V_{GS}=10V$ )	87m $\Omega$
$R_{DS(ON)}$ Typ(@ $V_{GS}=4.5V$ )	92m $\Omega$
$I_D$	5A



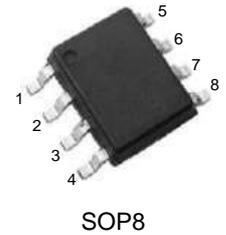
■ APPLICATIONS

- \* 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	$V_{DSS}$	100	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	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	$V_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Drain to Source Leakage Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$	-	-	1	$\mu A$
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	$m\Omega$
		$V_{GS}=4.5V, I_D=4A$	-	92	100	$m\Omega$
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	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	$t_{d(ON)}$	$I_D=5A, V_{DS}=50V$ $R_G=2.5\Omega, V_{GS}=10V$	-	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	$Q_g$	$I_D=5A, V_{DS}=50V$ $V_{GS}=10V$	-	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

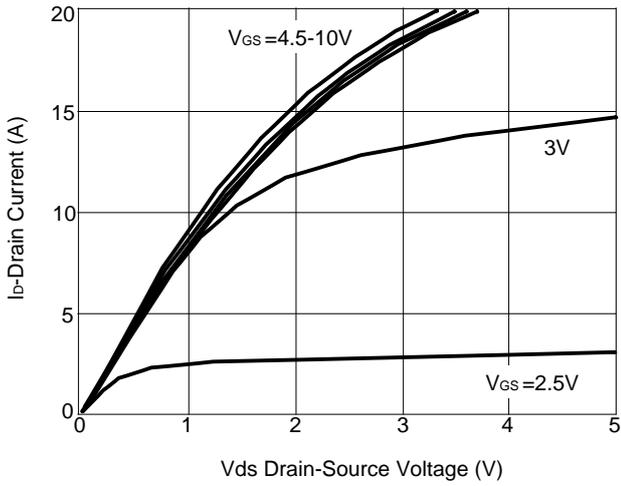


Figure 1: Output Characteristics

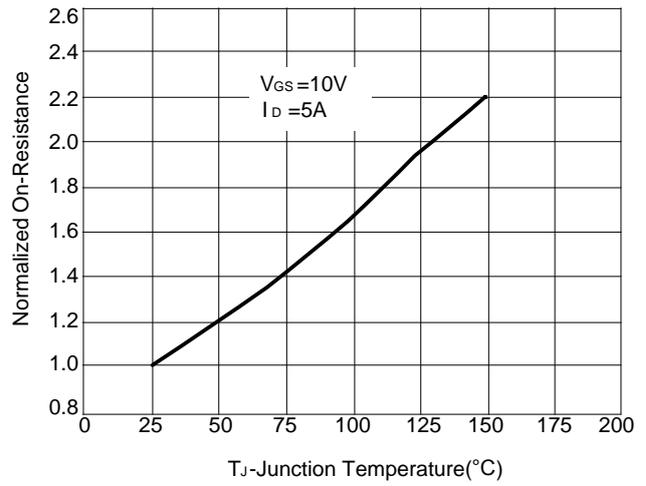


Figure 2: Rds(on)-Junction Temperature

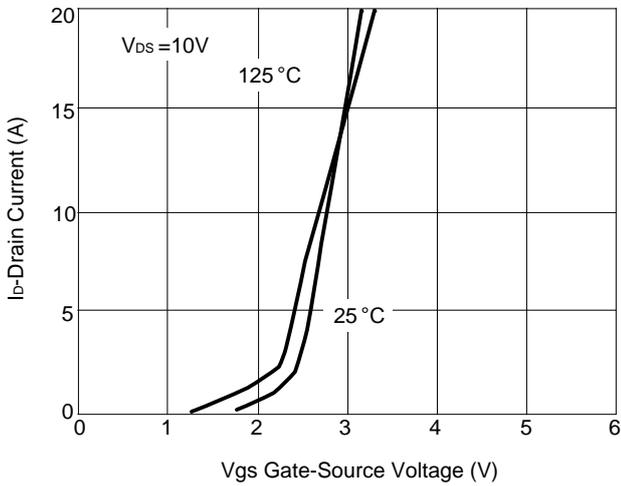


Figure 3: Transfer Characteristics

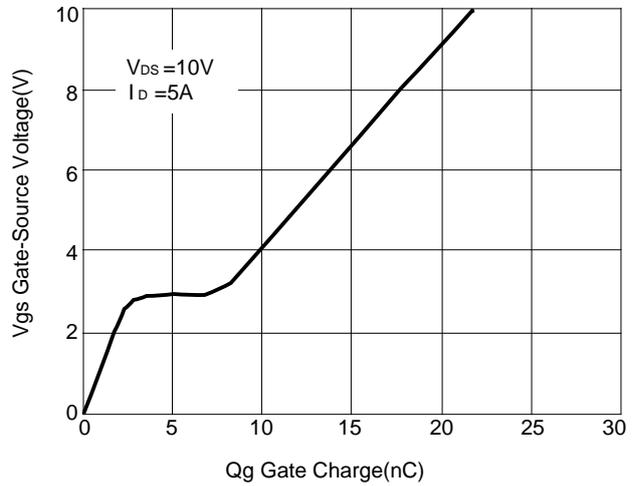


Figure 4: Gate Charge

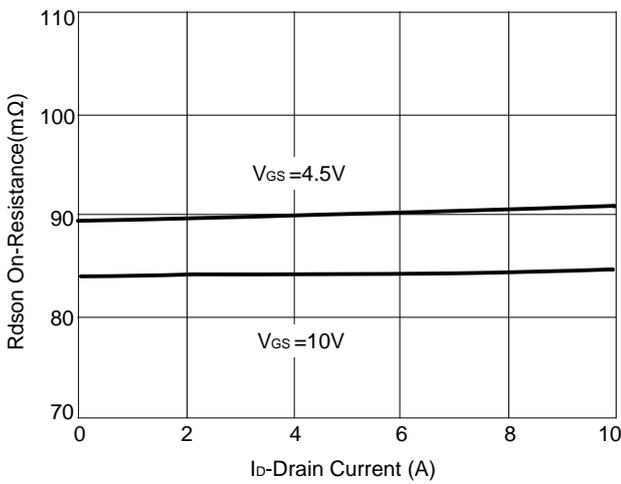


Figure 5: Rds(on)-Drain Current

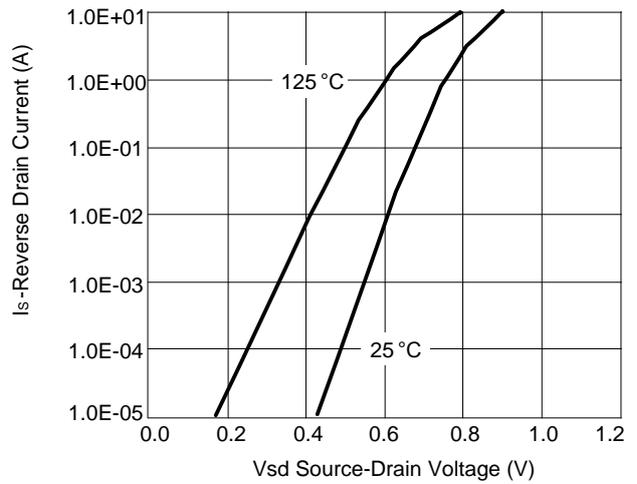


Figure 6: Source-Drain Diode Forward

■ TYPICAL CHARACTERISTICS(Cont.)

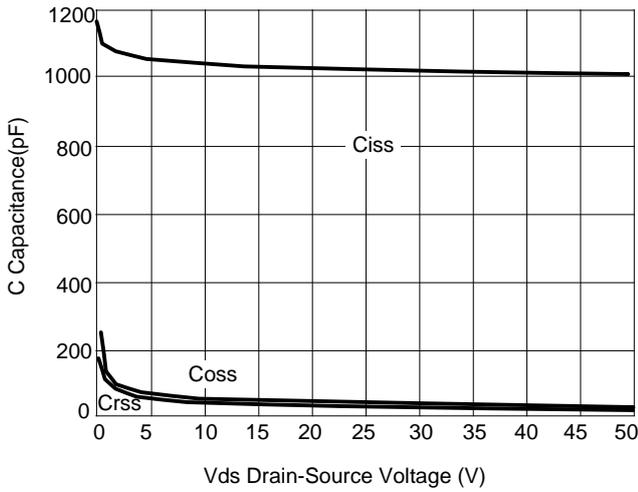


Figure 7: Capacitance vs Vds

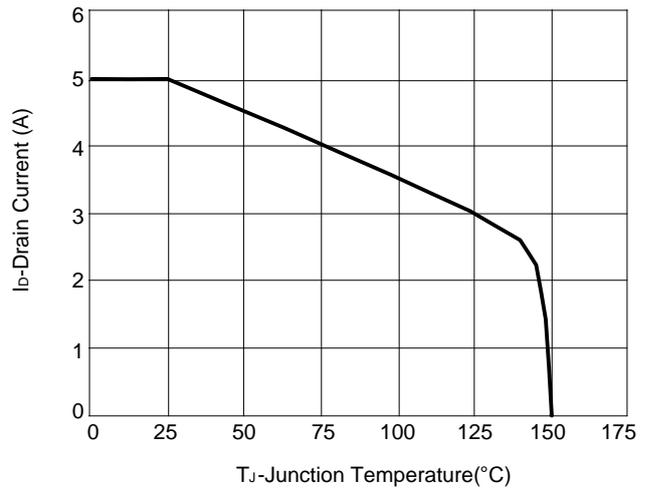


Figure 8:  $BV_{DSS}$  vs Junction Temperature

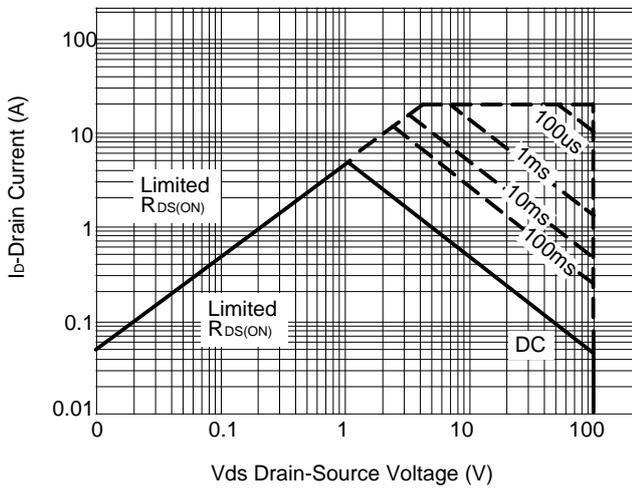


Figure 9: Safe Operation Area

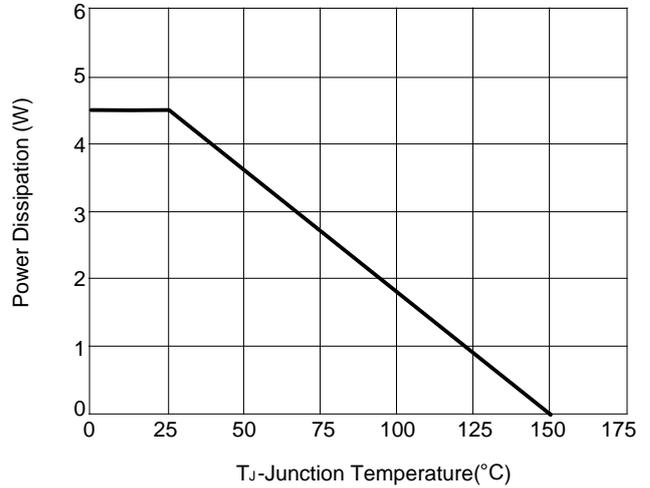


Figure 10: Power De-rating

■ SOP8 PACKAGE OUTLINE DIMENSIONS

