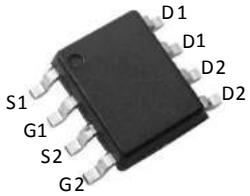
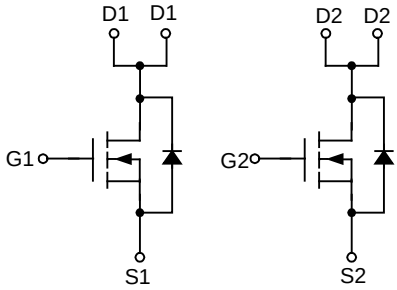
■ PRODUCT CHARACTERISTICS

V_{DSS}	60V
R_{DS} (on)typ(@V_{GS} =10 V)	26mΩ
R_{DS} (on)typ(@V_{GS} =4.5 V)	30mΩ
I_D	9.2A

Pin description





■ FEATURE

Low $R_{DS(ON)}$

Low gate charge

Pb-free lead plating

■ APPLICATIONS

Motor driving in power tool

E-vehiche robotics

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-free	Halogen		
N/A	MOT6929S	SOP-8L	4000Pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS (T_C = 25°C, unless otherwise specified)

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous	Tc=25℃	I_D	9.2	A
	Tc=100℃		5.3	A
Pulsed Drain Curren		I_{DM}	37	A
Avalanche Energy		E_{AS}	70	mJ
Maximum Power Dissipation		P_D	1.4	W
Thermal Resistance,Junction-to-Ambient		$R_{\theta JA}$	89	℃/W
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55 To 150	℃

■ Electrical Characteristics (T_C=25℃ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 250μA, V_{GS}= 0V	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 60V, V_{GS}= 0V	-	-	1.0	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}= 0V, V_{GS}= ±20V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS} , I_D= 250μA	1	1.58	2.5	V
Static Drain-Source ON-Resistance	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 9A	-	26	29	mΩ
		V_{GS}= 4.5V, I_D = 5A	-	30	38	mΩ
Dynamic characteristics						
Gate Resistance	R_g	f = 1MHz	-	1.4	-	Ω
Input Capacitance	C_{iss}	V_{GS}= 0V, V_{DS}= 20V, f = 1MHz	-	1378	-	pF
Output Capacitance	C_{oss}		-	73	-	pF
Reverse Transfer Capacitance	C_{rss}		-	64	-	pF
Total Gate Charge	Q_g	V_{GS}= 0 to 10V V_{DS}= 30V, I_D= 9A	-	50	-	nC
Gate Source Charge	Q_{gs}		-	9	-	nC
Gate Drain("Miller") Charge	Q_{gd}		-	8	-	nC
Switching characteristics						
Turn-On DelayTime	$t_{d(on)}$	V_{GS}= 10V, V_{DD}= 30V I_D= 9A , R_{GEN}= 3Ω	-	9	-	nS
Turn-On Rise Time	t_r		-	15	-	nS
Turn-Off DelayTime	$t_{d(off)}$		-	44	-	nS
Turn-Off Fall Time	t_f		-	7	-	nS
Body diode characteristics						
Maximum Continuous Forward Current	I_S		-	-	9	A
Maximum Pulsed Forward Current	I_{SM}		-	-	37	A
Body Diode Forward Voltage	V_{SD}	V_{GS}= 0V, I_S= 9A	-	-	1.2	A
Body Diode Reverse Recovery Time	trr	I_F= 9A, di/dt = 100A/us	-	21	-	nS
Body Diode Reverse Recovery Charge	Qrr		-	21	-	nS

■ TYPICAL CHARACTERISTICS

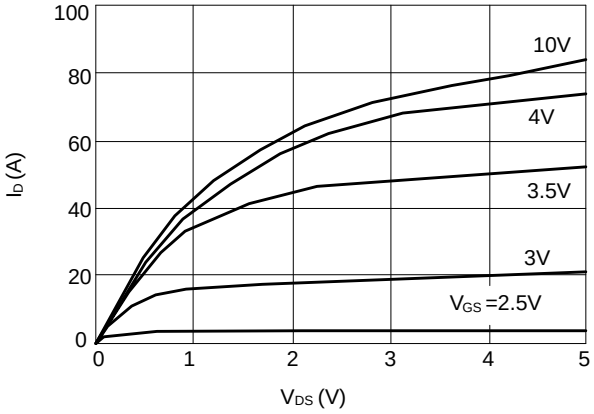


Figure 1: Output characteristics

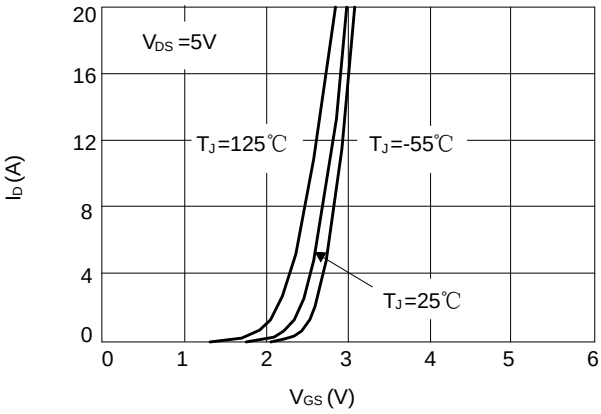


Figure 2: Typical transfer characteristics

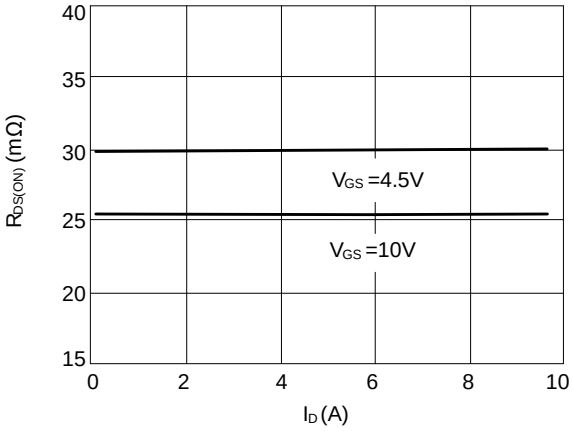


Figure 3: On-resistance vs. drain current

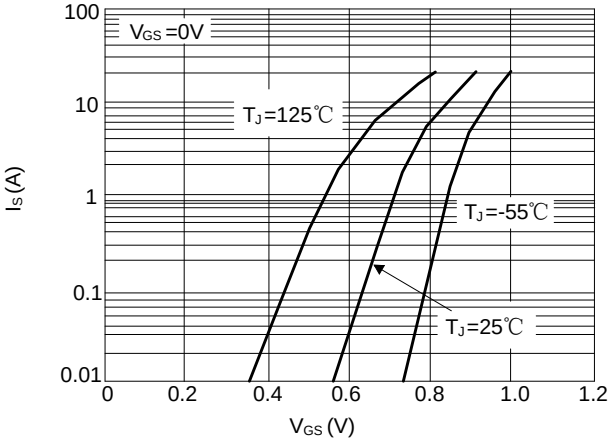


Figure 4: Body diode characteristics

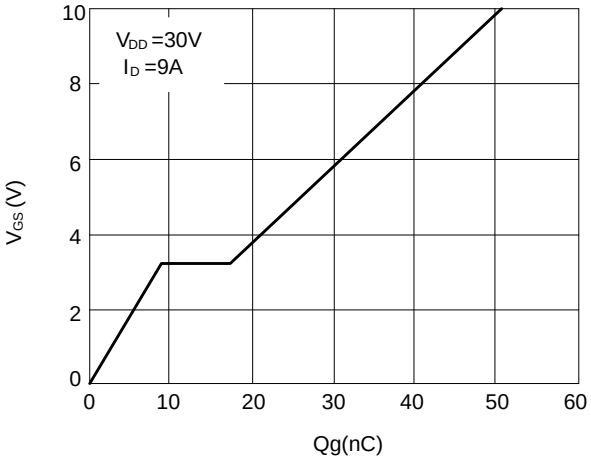


Figure 5: Gate charge characteristics

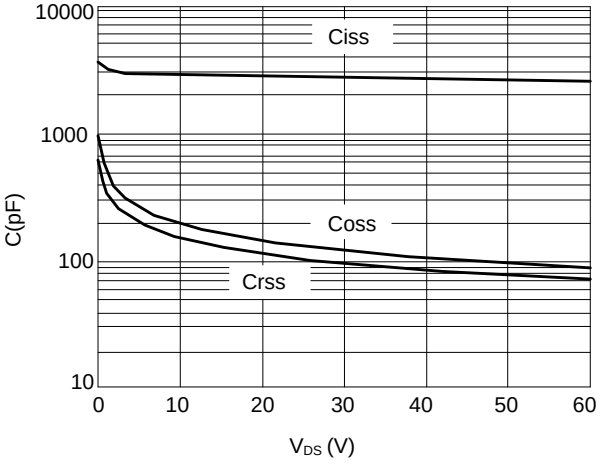


Figure 6: Capacitance characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

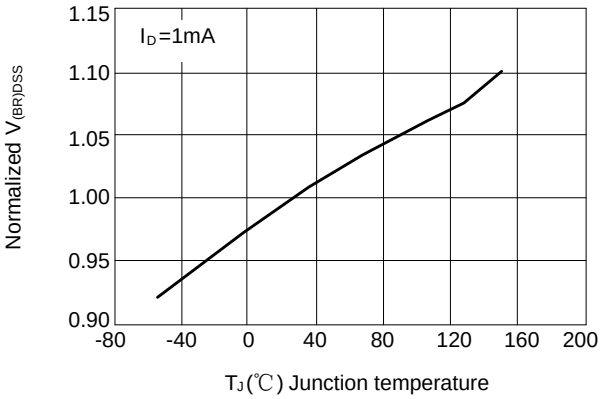


Figure 7: Normalized breakdown voltage vs. junction temperature

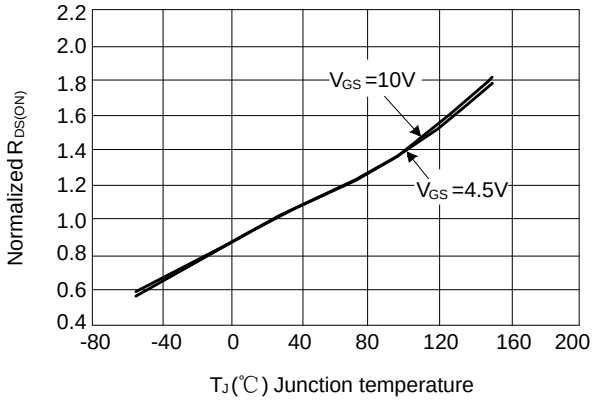


Figure 8: Normalized on resistance vs. junction temperature

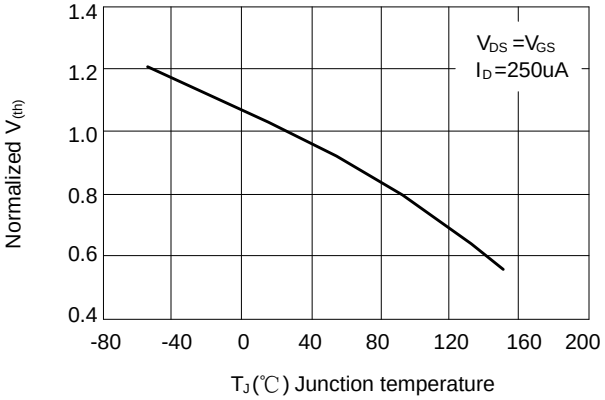


Figure 9: Normalized threshold voltage vs. junction temperature

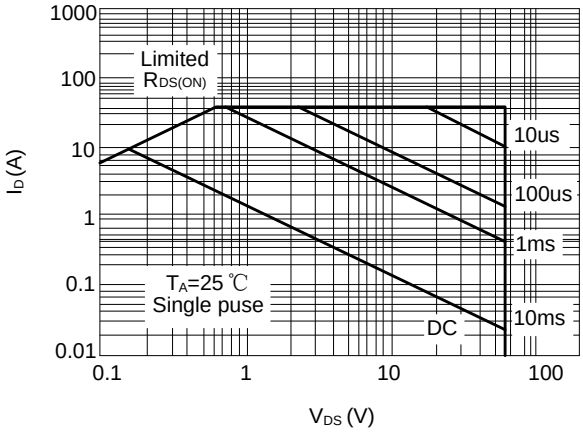


Figure 10: Maximum safe operating area