

■ PRODUCT CHARACTERISTICS

VDSS	40V
$R_{DS(on)Typ}(@V_{GS}=10V)$	17mΩ
$R_{DS(on)Typ}(@V_{GS}=4.5V)$	21mΩ
ID	15A

■ APPLICATIONS

- DC/DC Converter

■ FEATURES

- Very low on-resistance $R_{DS(on)}$
- Pb-free lead plating

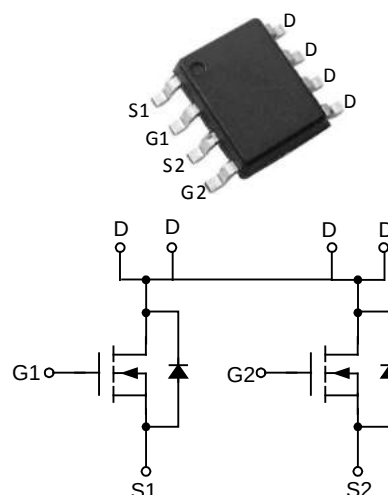
■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT4922S	SOP8	4000 pieces /Reel

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous (Silicon Limited)	I_D	15	A
Drain Current-Continuous($T_C=100^{\circ}C$)	$I_D(100^{\circ}C)$	10.6	A
Pulsed Drain Current (Package Limited)	I_{DM}	70	A
Maximum Power Dissipation	P_D	3	W
Thermal Resistance,Junction-to-Ambient	$R_{\theta JA}$	40	$^{\circ}C/W$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}C$

Pin description



■ Electrical Characteristics (T_C=25°C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	40	45	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =40V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.2	1.5	2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =10A	-	17	22	mΩ
		V _{GS} =4.5V, I _D =8A	-	21	25	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =10A	10	-	-	S
Dynamic characteristics						
Input Capacitance	C _{ISS}	V _{DS} =20V, V _{GS} =0V, F=1.0MHz	-	3090	-	PF
Output Capacitance	C _{OSS}		-	328	-	PF
Reverse Transfer Capacitance	C _{RSS}		-	273	-	PF
Switching characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =20V, R _L =2Ω V _{GS} =10V, R _G =3Ω	-	7	-	nS
Turn-on Rise Time	t _r		-	20	-	nS
Turn-Off Delay Time	t _{d(off)}		-	34	-	nS
Turn-Off Fall Time	t _f		-	19	-	nS
Total Gate Charge	Q _g	V _{DS} =20V, I _D =10A, V _{GS} =10V	-	60	-	nC
Gate-Source Charge	Q _{gs}		-	8.1	-	nC
Gate-Drain Charge	Q _{gd}		-	16.9	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =10A	-	-	1.2	V
Diode Forward Current	I _S		-	-	15	A
Reverse Recovery Time	t _{rr}	T _J = 25°C, IF = 10A di/dt = 100A/μs	-	31	-	nS
Reverse Recovery Charge	Q _{rr}		-	33	-	nC

■ TYPICAL CHARACTERISTICS

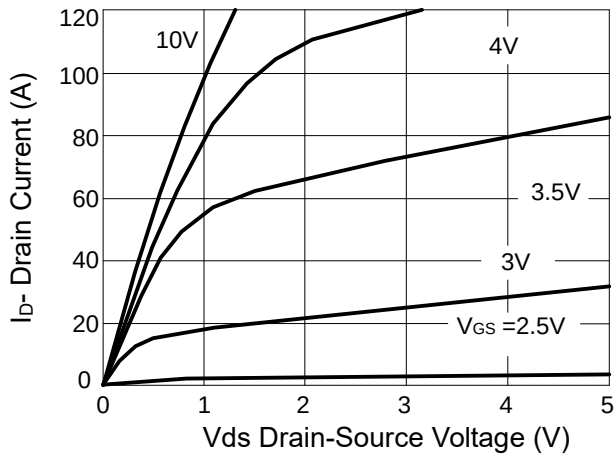


Figure 1 Output characteristics

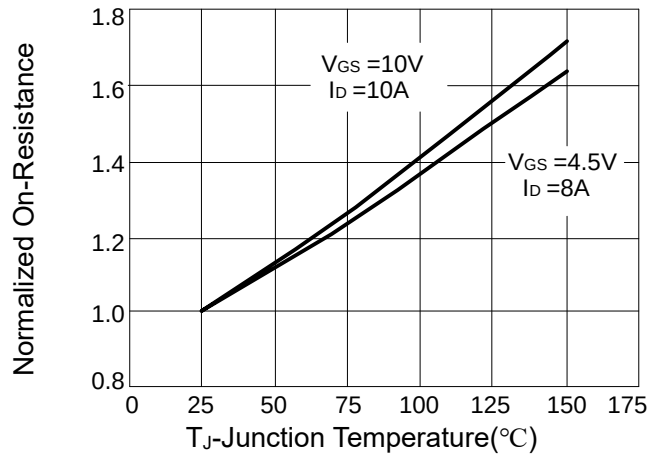


Figure 2 Rdson-junction temperature

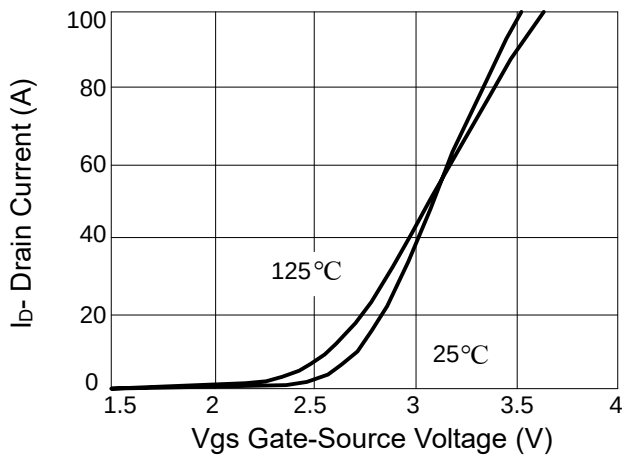


Figure 3 Transfer characteristics

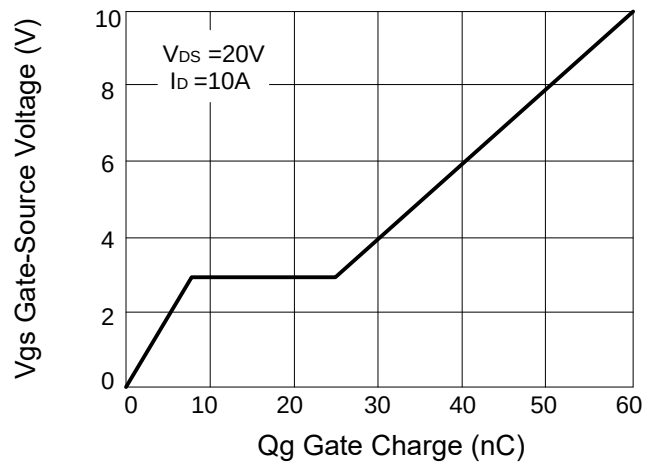


Figure 4 Gate charge

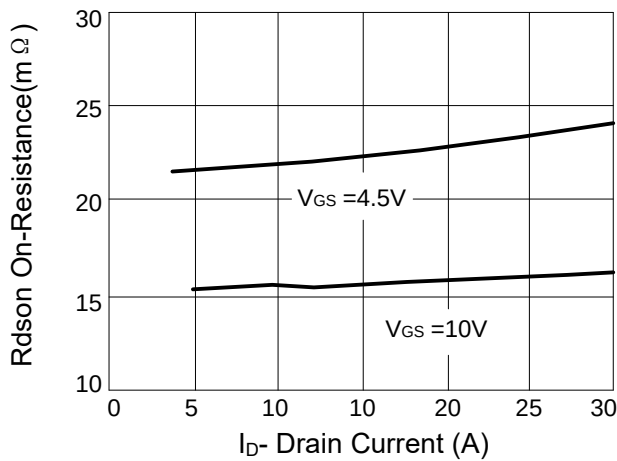


Figure 5 Rdson-drain current

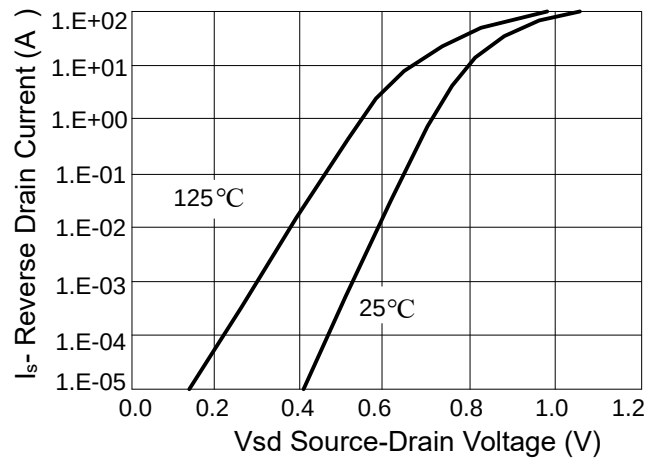


Figure 6 Source-drain diode forward

■ TYPIACL CHARACTERISTICS(Cont.)

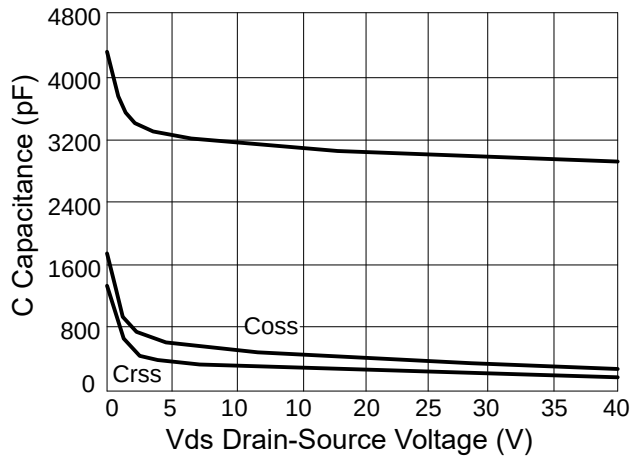


Figure 7 Capacitance vs vds

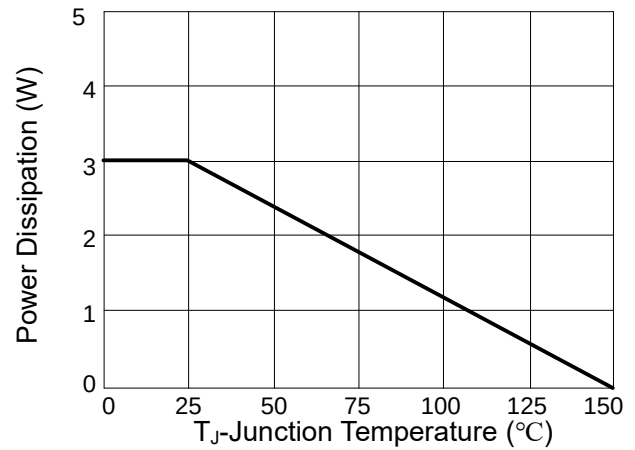


Figure 8 Power de-rating

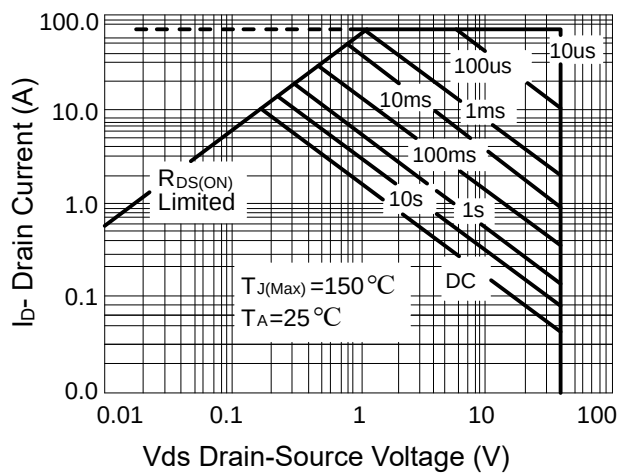


Figure 9 Safe operation area

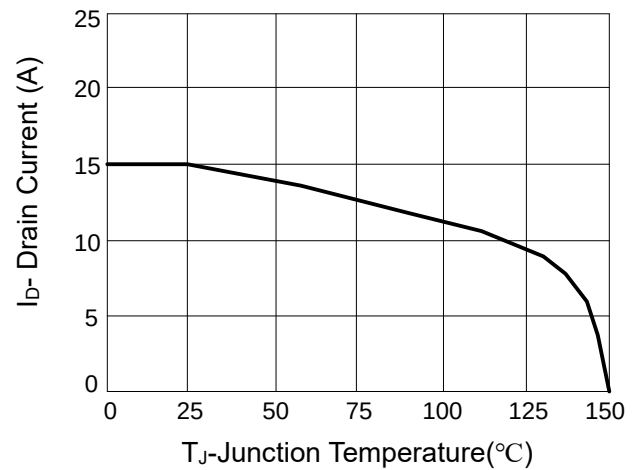


Figure 10 Current de-rating