

■ PRODUCT CHARACTERISTICS

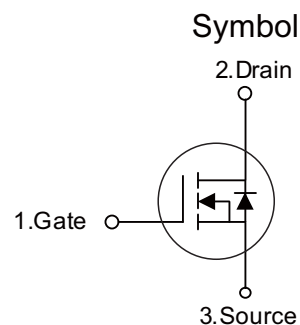
V_{DS}	60V
$R_{DS(ON)-Typ}$ (at $V_{GS}=10V$)	15m Ω
$R_{DS(ON)-Typ}$ (at $V_{GS}=4.5V$)	19 m Ω
ID	35A

■ APPLICATIONS

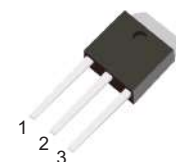
Load Switch
PWM Application
Power Management

■ FEATURES

Advanced Trench Technology
Excellent $R_{DS(ON)}$ and Low Gate Charge
Lead Free



TO-252



TO-251

■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT6522D	TO-252	2500 pieces /Reel
N/A	MOT6522C	TO-251	70 pieces/Tube

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate -Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	35	A
		22.8	A
Pulsed Drain Current	I_{DM}	140	A
Single Pulsed Avalanche Energy	E_{AS}	165	mJ
Power Dissipation	P_D	42	W
Thermal Resistance,Junction to Case	$R_{\theta JC}$	3	$^{\circ}C/W$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}C$

■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	-	2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$	-	15	22	m Ω
		$V_{GS}=4.5V, I_D=20A$	-	19	26	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=5A$	10	-	-	S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $F=1.0MHz$	-	678	-	PF
Output Capacitance	C_{oss}		-	380	-	PF
Reverse Transfer Capacitance	C_{rss}		-	14	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=30A,$ $V_{GS}=10V, R_G=1.8\Omega$	-	11	-	nS
Turn-on Rise Time	t_r		-	79	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	33	-	nS
Turn-Off Fall Time	t_f		-	107	-	nS
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=30A,$ $V_{GS}=10V$	-	45	-	nC
Gate-Source Charge	Q_{gs}		-	8	-	nC
Gate-Drain Charge	Q_{gd}		-	11	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=10A$	-	-	1.2	V
Diode Forward Current	I_S		-	-	35	A
Reverse Recovery Time	t_{rr}	$T_J = 25^{\circ}C, I_F = 30A$ $di/dt = 100A/\mu s$	-	14	-	nS
Reverse Recovery Charge	Q_{rr}		-	10	-	nC

■ TYPICAL CHARACTERISTICS

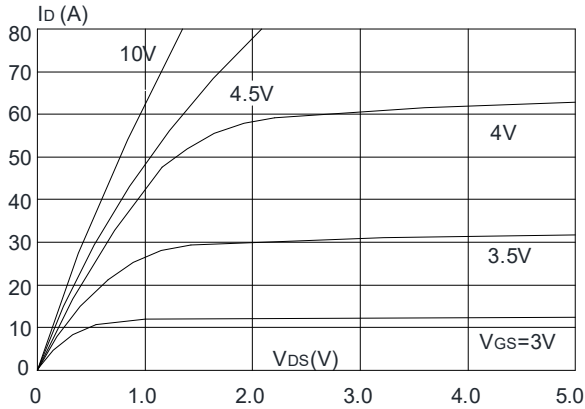


Figure 1: Output Characteristics

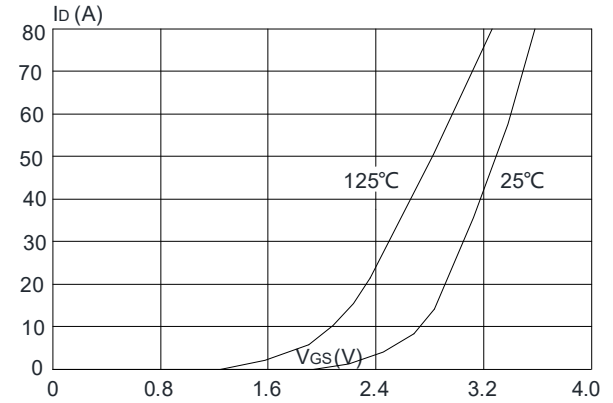


Figure 2: Typical Transfer Characteristics

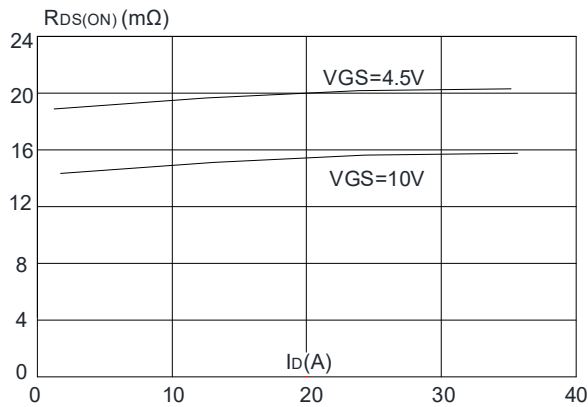


Figure 3: On-resistance vs. Drain Current

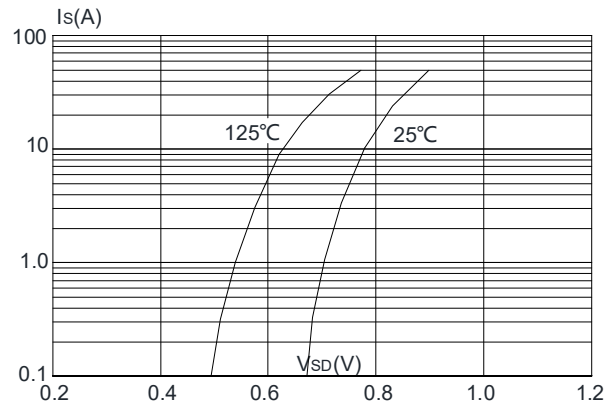


Figure 4: Body Diode Characteristics

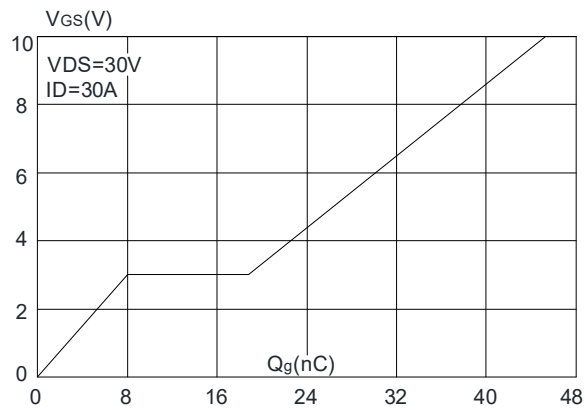


Figure 5: Gate Charge Characteristics

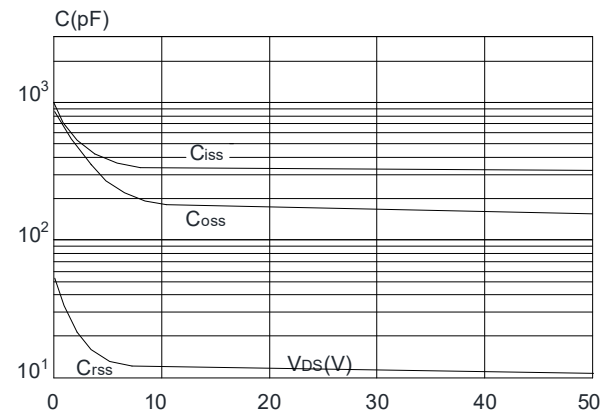


Figure 6: Capacitance Characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

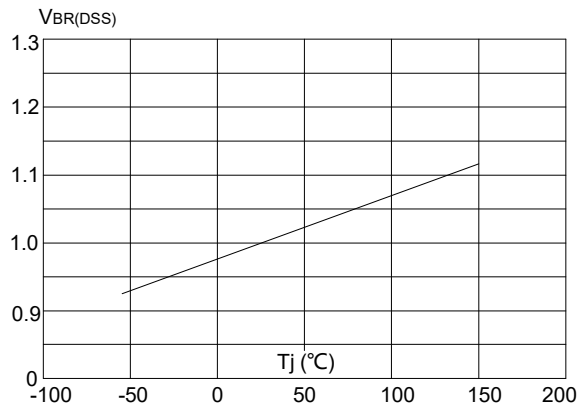


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

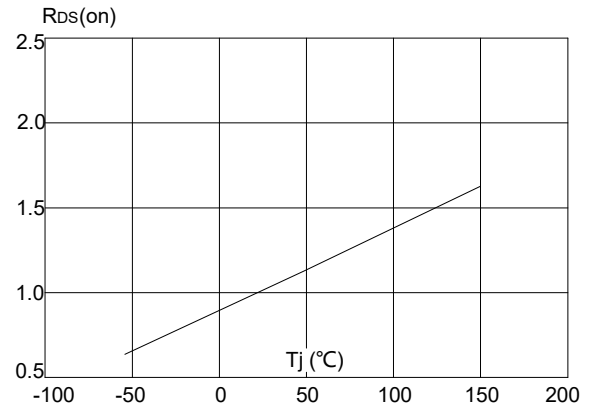


Figure 8: Normalized on Resistance vs. Junction Temperature

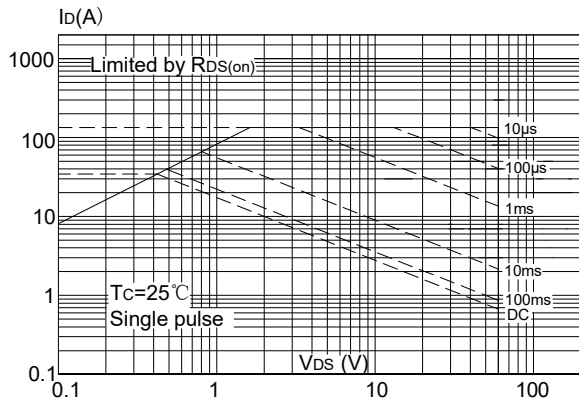


Figure 9: Maximum Safe Operating Area

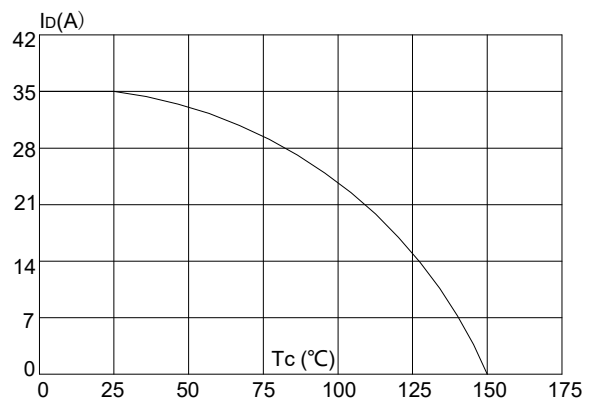


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

■ TO-252 PACKAGE OUTLINE DIMENSIONS

