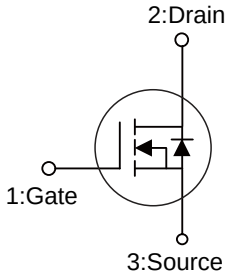
■ PRODUCT CHARACTERISTICS

V_{DSS}	750V
$R_{DS(ON)}$Typ(@V_{GS}=15V)	300mΩ
Qg@typ	9nC
I_D	10A

Symbol



■ APPLICATIONS

*Switch Mode Power Supplies
*High Voltage DC/DC Converters
*Battery Chargers
*Motor Drivers

■ FEATURE

*Low On-Resistance With High Blocking Voltage
*Low Capacitances With High -Speed Switching
*Low Reverse Recovery(Qrr)
*Easy to Parallel and Simple to Drive

TO-252

■ ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT75CL300D	TO-252	2500 pieces/Reel

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	750	V
Gate-Source Voltage	V_{GSS}	-10/+22	V
Recommended Operation Voltage Of Gate to Source	V_{GSOP}	0/+18	V
Drain Current Continuous(@V_{GS}=15V ,T_C=25°C)	I_D	10	A
Drain Current Continuous(@V_{GS}=15V ,T_C=175 °C)	I_D	7.5	A
Drain Current Pulsed(@V_{GS}=15V ,T_C=25°C)	I_{DM}	18	A
Power Dissipation	P_D	57	W
Junction Temperature	T_J	+175	°C
Storage Temperature	T_{STG}	-55~ +175	°C

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R_{thJC}	2.6	°C/W

■ ELECTRICAL CHARACTERISTICS (T_C=25°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=500μA	750	-	-	V
Drain to Source Leakage Current	I_{DSS}	V_{DS}=750V,V_{GS}=0V	-	-	10	μA
Gate to Source Forward Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=18V	-	-	250	nA
On characteristics						
Drain to Source On-Resistance	$R_{DS(ON)}$	V_{GS}=15V,I_D=4A	-	300	400	mΩ
		V_{GS}=15V,I_D=4A,T_j=175°C	-	280	-	mΩ
		V_{GS}=18V,I_D=4A	-	240	-	mΩ
		V_{GS}=18V,I_D=4A,T_j=175°C	-	250	-	mΩ
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D=250uA	2	2.5	4	V
Dynamic characteristics						
Gate capacitance	R_g	V_{AC}=25mV ,f=1.0MHz	-	24	-	Ω
Input Capacitance	C_{iss}	V_{DS}=40V,V_{GS}=0V f=1.0MHz	-	223	-	pF
Output Capacitance	C_{oss}		-	21	-	pF
Reverse Transfer Capacitance	C_{rss}		-	1	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	I_D=4A, V_{DS}=400V R_G=4.3Ω ,V_{GS}=0/15V	-	6.3	-	ns
Rise Time	t_r		-	17.4	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	14.3	-	ns
Fall Time	t_f		-	14.8	-	ns
Total Gate Charge	Q_g	I_D=4A, V_{DS}=400V V_{GS}=0/15V	-	9.0	-	nC
Gate to Source Charge	Q_{gs}		-	3.6	-	nC
Gate to Drain("Miller") Charge	Q_{gd}		-	1.2	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I_S		-	-	10	A
Diode Forward Voltage	V_{SD}	I_{SD}=1A, V_{GS}=0V	-	3.5	-	V
Reverse Recovery Time	t_{rr}	I_{SD}=4A, T_J=25°C dI/dt=1200A/μs	-	25	-	ns
Reverse Recovery Charge	Q_{rr}		-	9.2	-	nC

■ TYPICAL CHARACTERISTICS

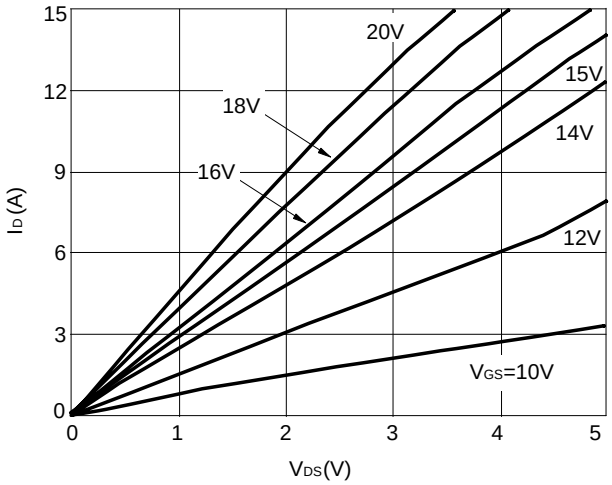


Figure 1: Output Characteristics(T_J=25°C)

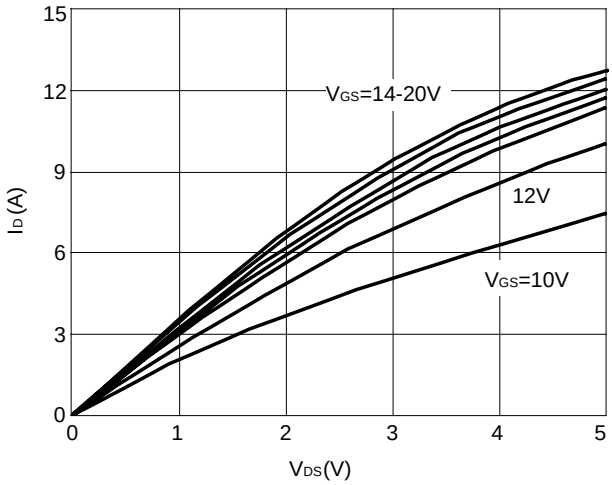


Figure 2: Output Characteristics(T_J=175°C)

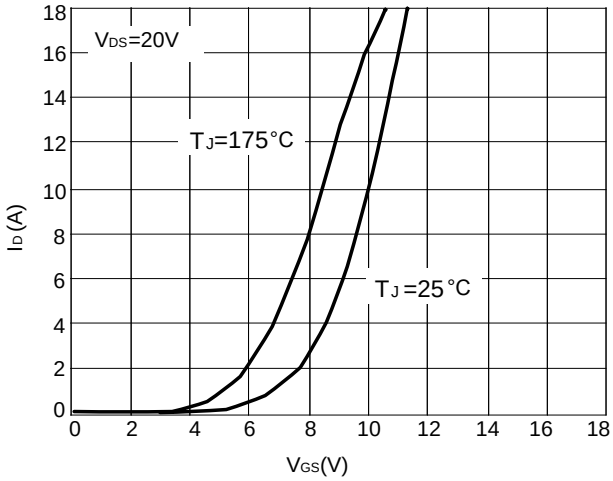


Figure 3: Typical Transfer Characteristics

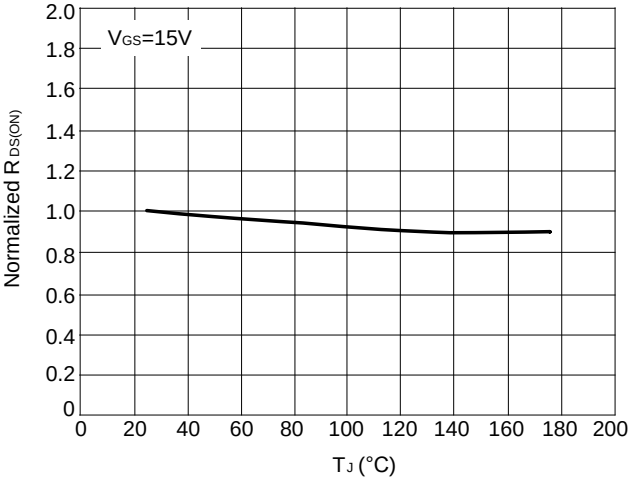


Figure 4: Normalized On-Resistance vs Temperature

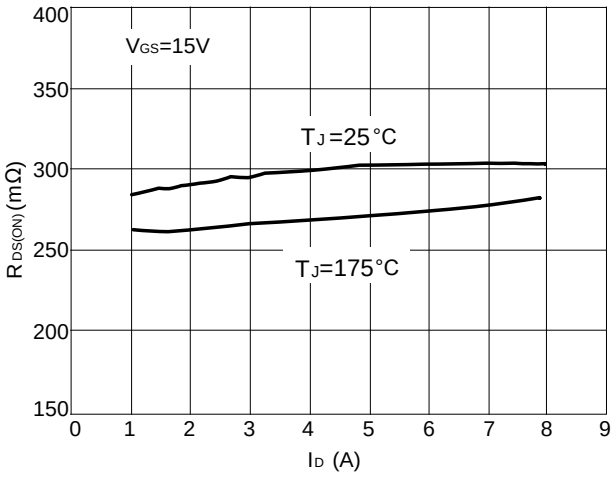


Figure 5: Normalized On-Resistance vs. Drain Current For Various Temperature

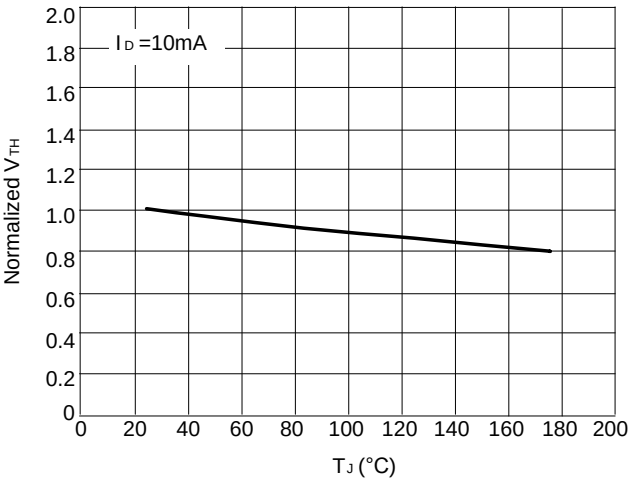


Figure 6: Normalized Threshold Voltage vs. Temperarure

■ TYPICAL CHARACTERISTICS(Cont.)

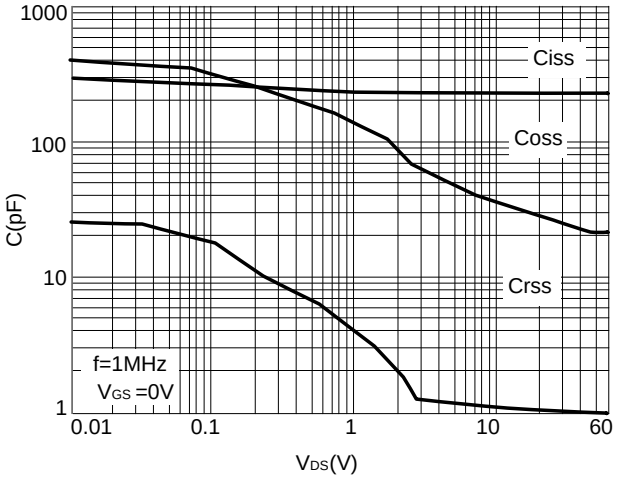


Figure 7: Capacitance vs. Drain-Source Voltage

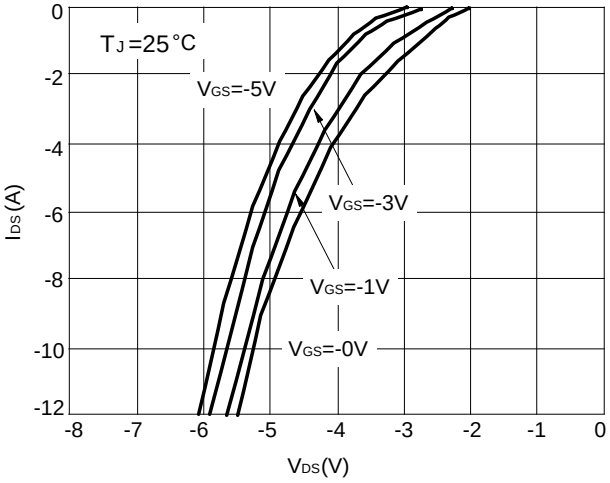


Figure 8: Body Diode Characteristics

■ TO-252 PACKAGE OUTLINE DIMENSIONS