

■ PRODUCT CHARACTERISTICS

VDSS	-15V
$R_{DS(on)}$ Typ($V_{GS} @ = -4.5V$)	19m Ω
$R_{DS(on)}$ Typ($V_{GS} @ = -2.5V$)	25m Ω
ID	-10A

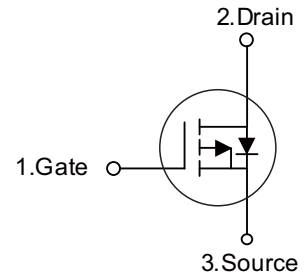
■ APPLICATIONS

- Load switch for portable
- DC/DC converter

■ FEATURES

- * High Density Cell Design For Ultra Low On-Resistance
- * Advanced trench process technology

Symbol



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT2319A3	SOT-23A-3L	3000pieces/Reel

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-15	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	-10	A
Pulsed Drain Current	I_{DM}	-40	A
Power Dissipation	P_D	1.3	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	96	$^\circ\text{C}/\text{W}$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	$^\circ\text{C}$

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

Parameter	Symbol	Condition	Min	Typ	Max	Units
Static characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250μA	-15	-	-	V
Zero gate voltage drain curre	I _{DSS}	V _{DS} =-15V,V _{GS} = 0V	-	-	-1	μA
Gate-source leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V	-	-	±100	nA
Drain-source on-resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-3.7A	-	19	26	mΩ
		V _{GS} =-2.5V, I _D =-2A	-	25	34	mΩ
Forward tranconductance	g _{FS}	V _{DS} =-5V, I _D =-3A	5.5	-	-	S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.3	-0.65	-1.5	V
Diode forward voltage	V _{SD}	I _S =-1A,V _{GS} =0V	-	-	-1	V
Dynamic characteristics						
Input capacitance	C _{iss}	V _{DS} =-12V,V _{GS} =0V,f =1MHz	-	2100	-	pF
Output capacitance	C _{oss}		-	345	-	pF
Reverse transfer capacitance	C _{rss}		-	300	-	pF
Total Gate Charge	Q _g	V _{GS} = 0 to -4.5V V _{DS} = -10V, I _D = -10A	-	16	-	nC
Gate Source Charge	Q _{gs}		-	4	-	nC
Gate Drain("Miller") Charge	Q _{gd}		-	3	-	nC
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{GS} =-4.5V,V _{DS} =-10V, I _D = -10A,R _{GEN} =3Ω	-	8	-	ns
Turn-on rise time	t _r		-	35	-	ns
Turn-off delay time	t _{d(off)}		-	71	-	ns
Turn-off fall time	t _f		-	70	-	ns

■ TYPICAL CHARACTERISTICS

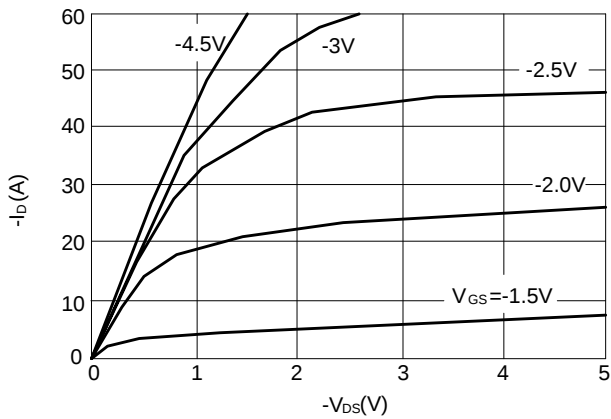


Figure 1: Output characteristics

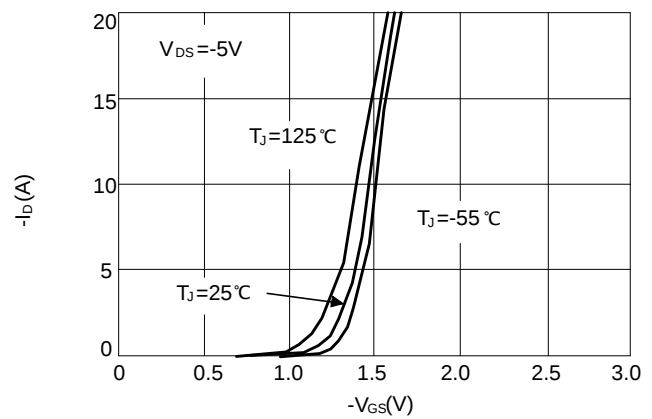


Figure 2: Transfer characteristics

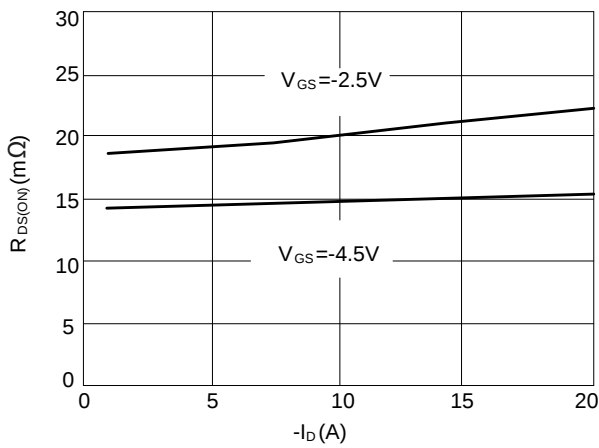


Figure 3: On-resistance vs. drain current

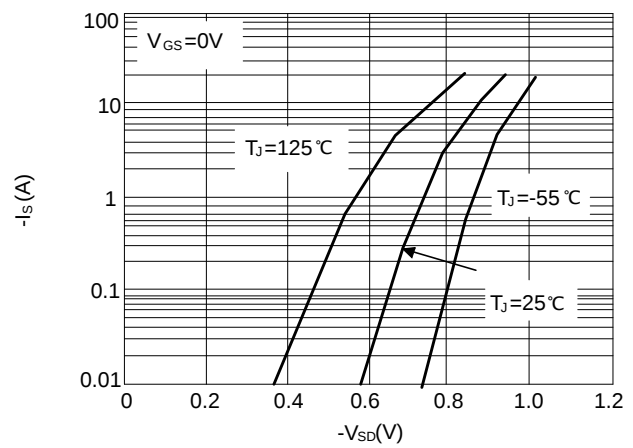


Figure 4: Body diode characteristics

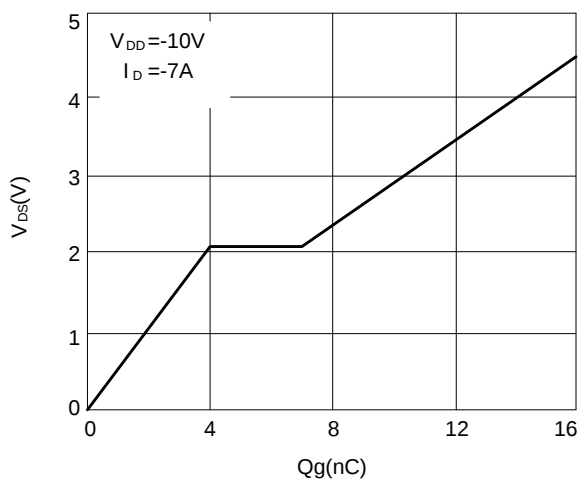


Figure 5: Gate charge characteristics

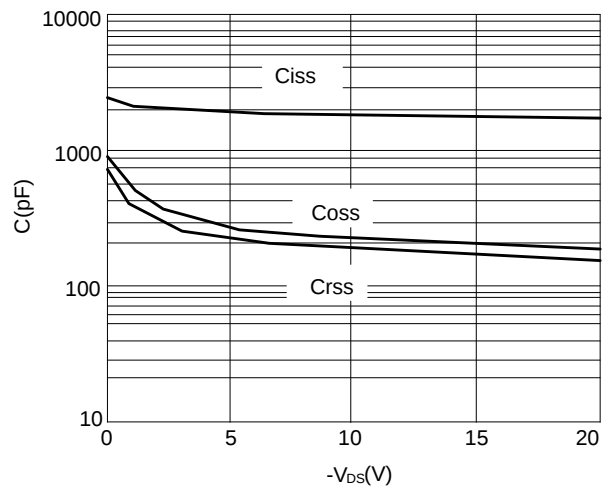


Figure 6: Capacitance characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

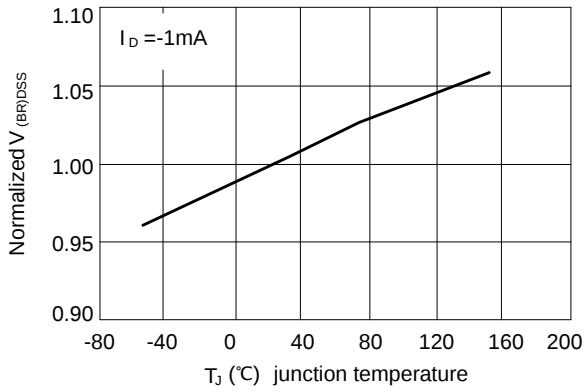


Figure 7: Normalized breakdown voltage vs. junction temperature

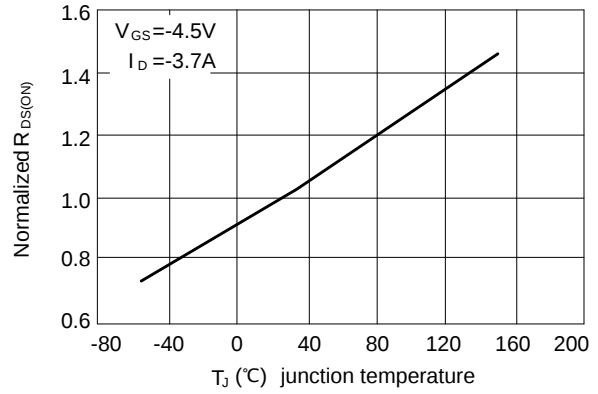


Figure 7: Normalized on-resistance vs. junction temperature

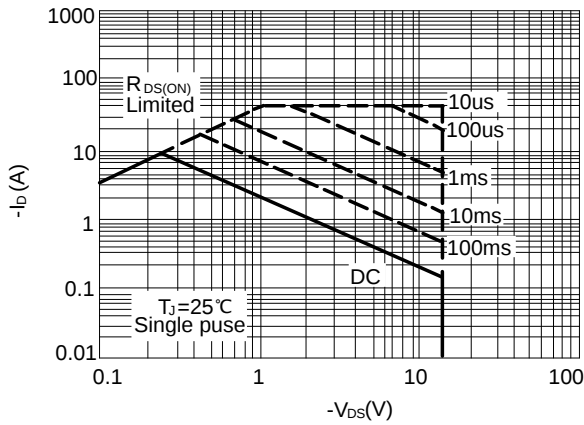


Figure 9: Safe operating area

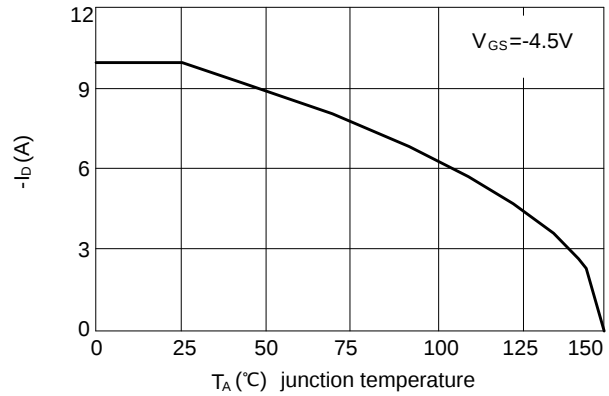


Figure 10: Maximum continuous drain current vs. ambient temperature

■ SOT-23A-3L PACKAGE OUTLINE DIMENSIONS

