

PRODUCT CHARACTERISTICS

VDSS	60V
$R_{DS(on)max}(V_{GS} @=10V)$	73mΩ
$R_{DS(on)max}(V_{GS} @=4.5V)$	89mΩ
ID	3A

APPLICATION

Battery switch
DC/DC converter

FEATURE

High power and current handling capability
Lead free product is acquired
Surface mount package

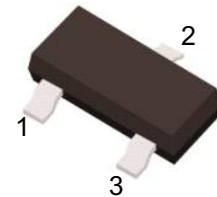
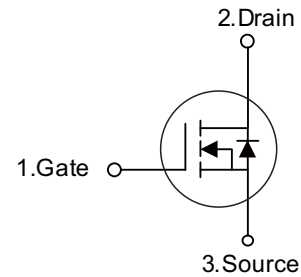
ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT2310B2	SOT-23	3000pieces/Reel

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	3	A
Drain Current-Pulsed	I_{DM}	10	A
Maximum Power Dissipation	P_D	1.7	W
Thermal Resistance,Junction-to-Ambient	$R_{\theta JA}$	73.5	$^{\circ}C/W$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}C$

Symbol



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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	60	65	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, 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	0.8	1.3	2.0	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =3A	-	73	100	mΩ
		V _{GS} =4.5V, I _D =1.5A	-	89	115	mΩ
Forward Transconductance	g _{FS}	V _{DS} =15V, I _D =2A		3	-	S
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, F=1.0MHz	-	510	-	PF
Output Capacitance	C _{oss}		-	34	-	PF
Reverse Transfer Capacitance	C _{rss}		-	26	-	PF
Switching characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V, I _D =1.5A V _{GS} =10V, R _{GEN} =1Ω	-	6	-	nS
Turn-on Rise Time	t _r		-	15	-	nS
Turn-Off Delay Time	t _{d(off)}		-	15	-	nS
Turn-Off Fall Time	t _f		-	10	-	nS
Total Gate Charge	Q _g	V _{DS} =30V, I _D =3A, V _{GS} =4.5V	-	7.5	-	nC
Gate-Source Charge	Q _{gs}		-	1.4	-	nC
Gate-Drain Charge	Q _{gd}		-	3	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =3A	-	-	1.2	V
Diode Forward Current	I _S		-	-	3	A

■ TYPICAL CHARACTERISTICS

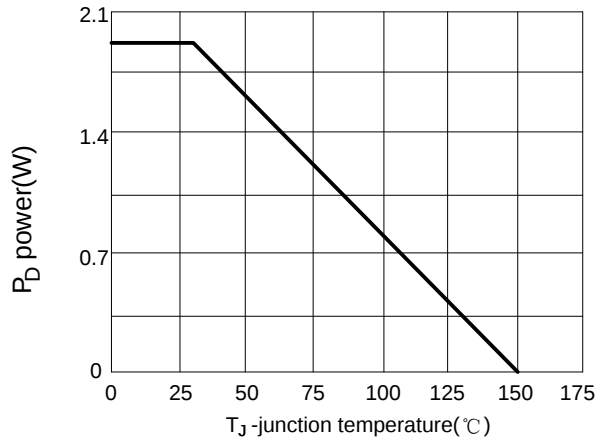


Figure 1: Power dissipation

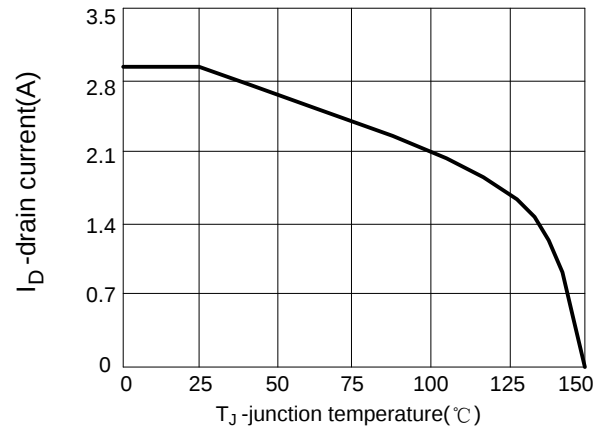


Figure 2: Drain current

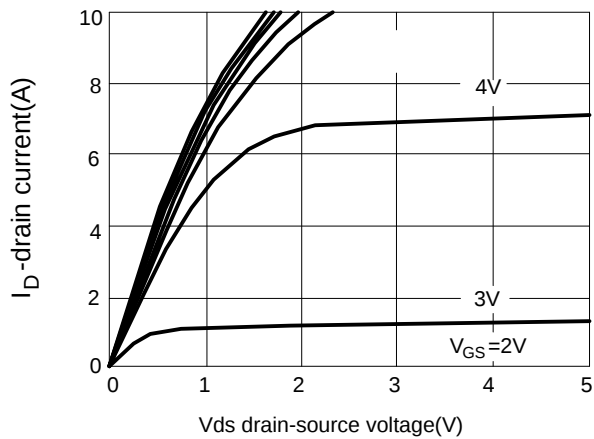


Figure 3: Output characteristics

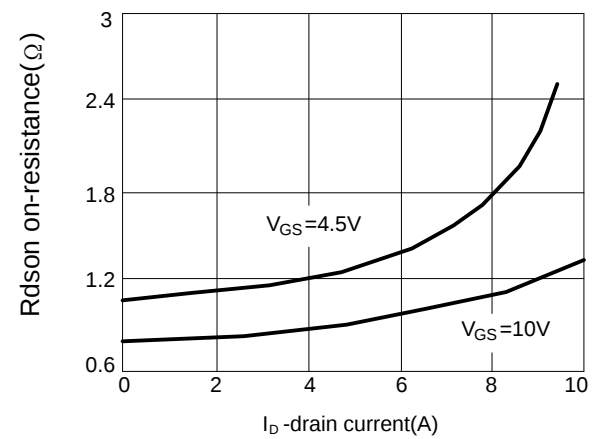


Figure 4: Drain-source on-resistance

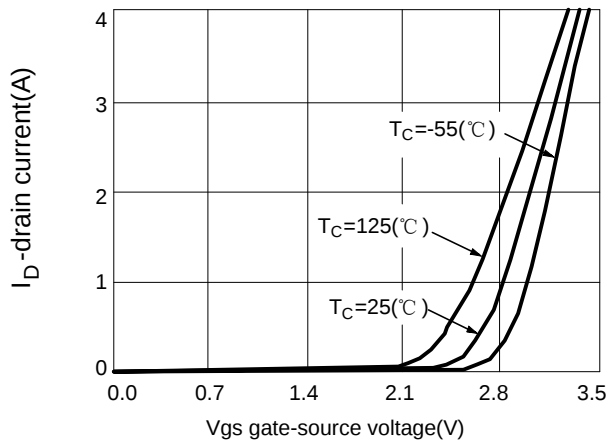


Figure 5: Transfer characteristics

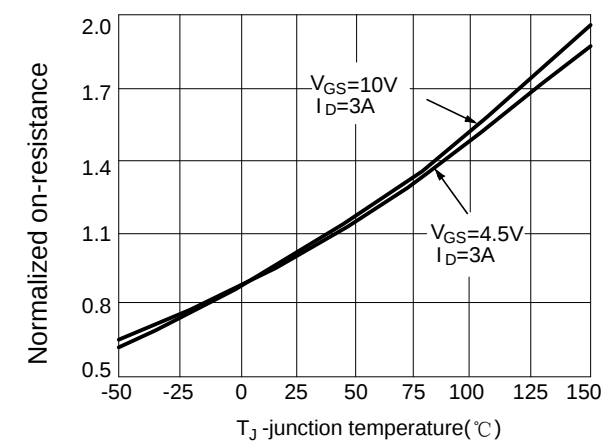


Figure 6: Drain-source on-resistance

■ TYPICAL CHARACTERISTICS(Cont.)

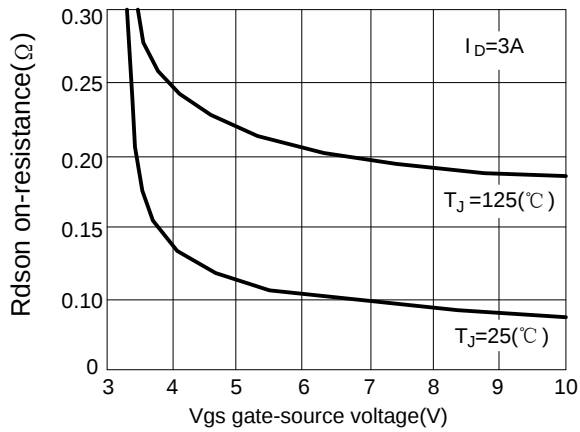


Figure 7: Transfer characteristics

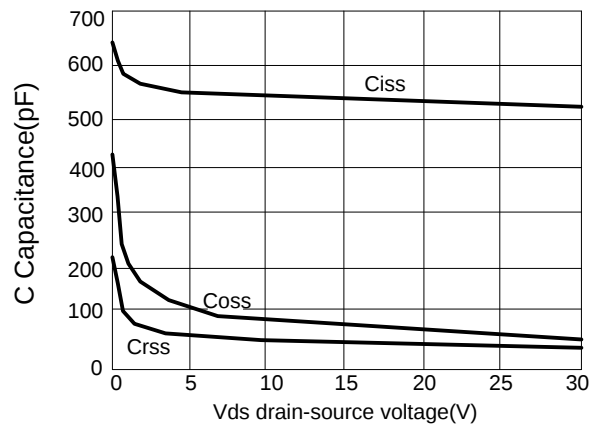


Figure 8: Capacitance vs. vds

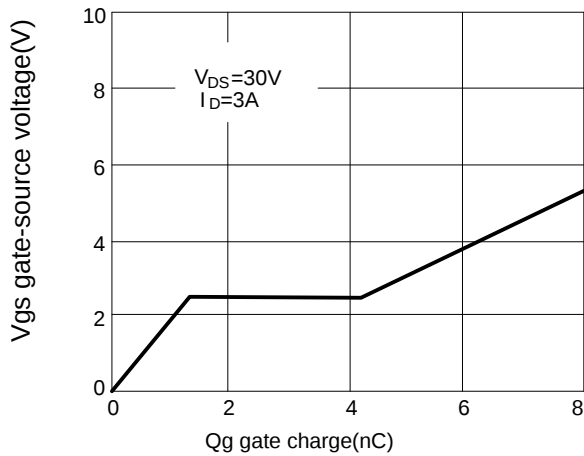


Figure 9: Gate charge

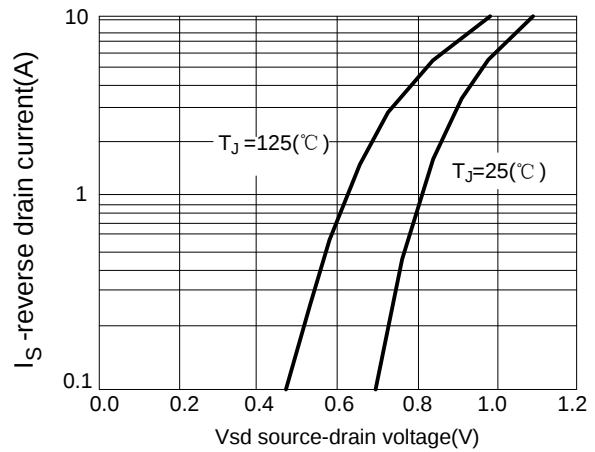


Figure 10: Source-drain diode forward

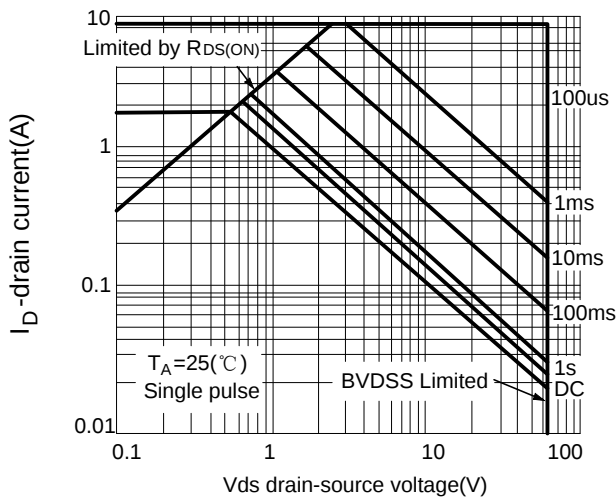
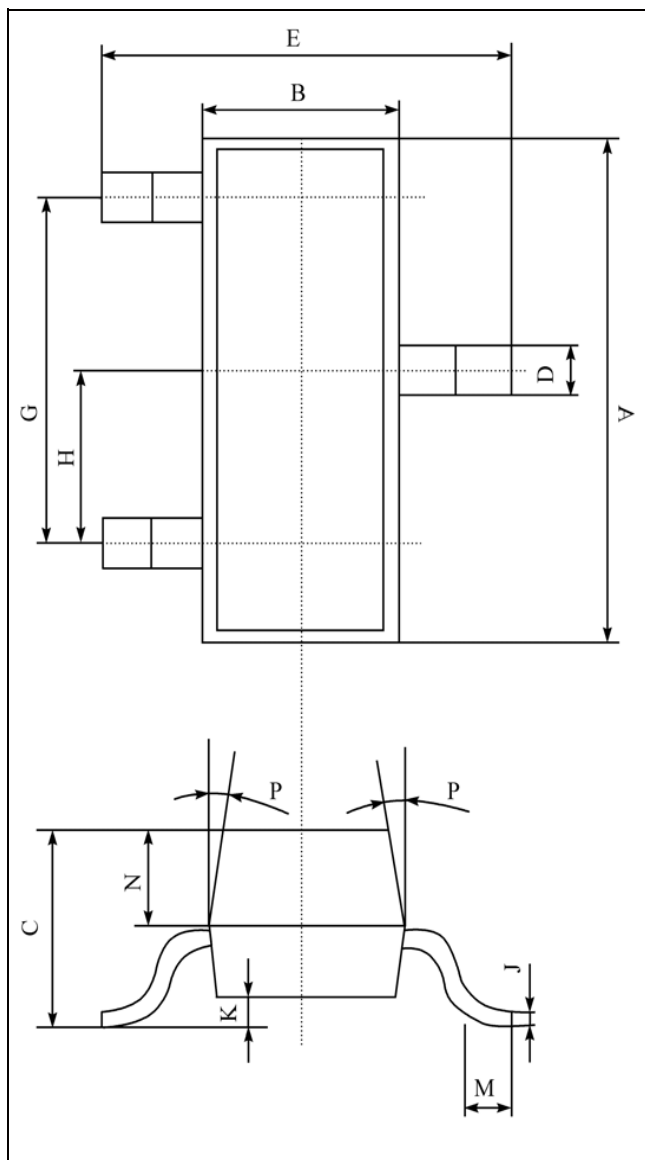


Figure 11: Safe operation area

■ SOT-23 PACKAGE OUTLINE DIMENSIONS



单位 (UNIT) : mm

序号	数值及公差
A	2.90±0.10
B	1.30±0.10
C	1.00±0.10
D	0.40±0.10
E	2.40±0.20
G	1.90±0.10
H	0.95±0.05
J	0.13±0.05
K	0.00-0.10
M	≥0.20
N	0.60±0.10
P	7±2°
Packing SOT-23 包装规格 SMD片式表面贴封装 包装方式: 载带卷盘包装 Tape & Reel, 3Kpcs/Reel 每卷数量3000只 (3Kpcs/Reel) 每盒数量45000只 (45Kpcs/BOX) 每箱数量180000只 (180Kpcs/Cartons)	