

■ PRODUCT CHARACTERISTICS

VDSS	18V
$R_{DS(on)}$ Typ(@ $V_{GS}=4.5V$)	45m Ω
$R_{DS(on)}$ Typ(@ $V_{GS}=2.5V$)	55m Ω
ID	2.3A

■ APPLICATIONS

Battery protection
Load switch
Power management

■ FEATURES

High Power and current handing capability
Lead free product is acquired
Surface Mount Package

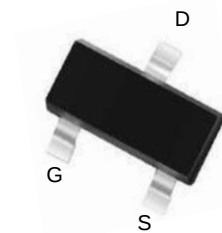
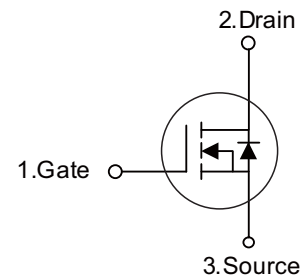
■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT2302SB2	SOT-23	3000pieces/Reel

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage ($V_{GS}=0V$)	V_{DS}	18	V
Gate-Source Voltage ($V_{DS}=0V$)	V_{GS}	± 12	V
Drain Current-Continuous	I_D	2.3	A
Maximum Power Dissipation	P_D	0.9	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	139	$^{\circ}C/W$
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}	$V_{GS}=0V, I_D=250\mu A$	18	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=18V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	± 100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.75	1.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=2.5V, I_D=2A$	-	55	70	m Ω
		$V_{GS}=4.5V, I_D=2A$	-	45	60	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=2A$	-	8	-	S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V,$ $F=1.0MHz$	-	260	-	PF
Output Capacitance	C_{oss}		-	48	-	PF
Reverse Transfer Capacitance	C_{rss}		-	27	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=10V, R_L=3.3\Omega$ $V_{GS}=4.5V, R_{GEN}=6\Omega$	-	2.5	-	nS
Turn-on Rise Time	t_r		-	3.2	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	21	-	nS
Turn-Off Fall Time	t_f		-	3	-	nS
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=2A,$ $V_{GS}=4.5V$	-	2.9	5	nC
Gate-Source Charge	Q_{gs}		-	0.4	-	nC
Gate-Drain Charge	Q_{gd}		-	0.6	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=2.0A$	-	0.75	1.2	V
Diode Forward Current	I_S		-	-	2.3	A

■ TYPICAL CHARACTERISTICS

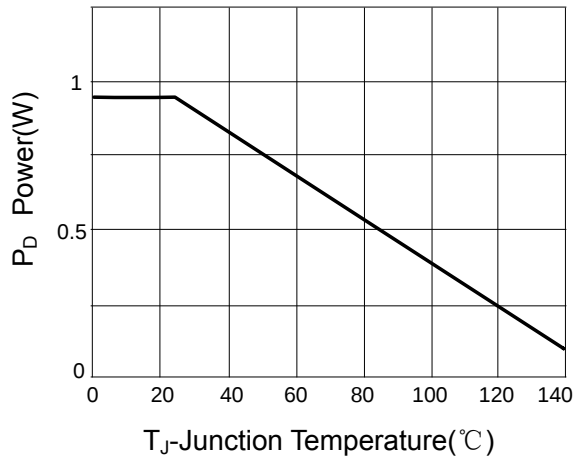


Figure 1: Power dissipation

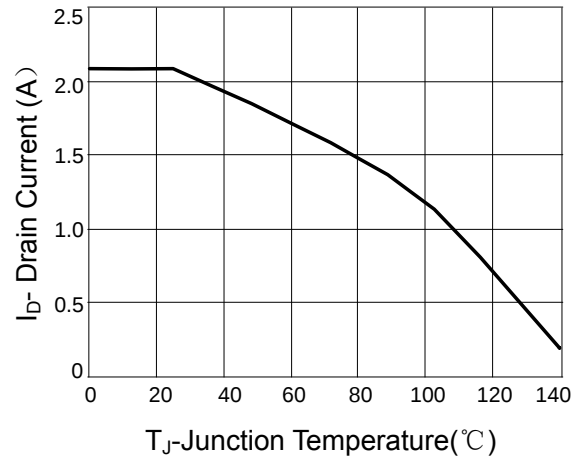


Figure 2: Drain current

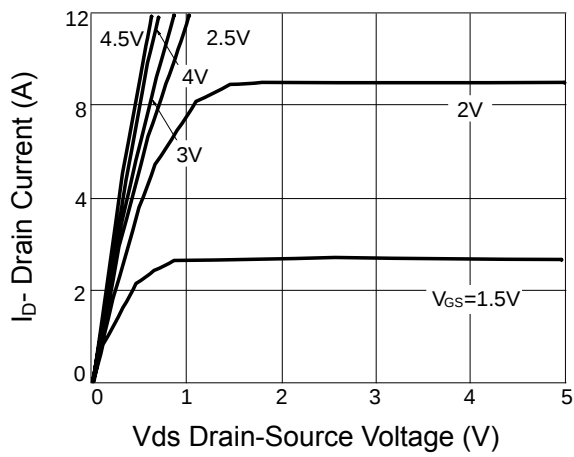


Figure 3: Output characteristics

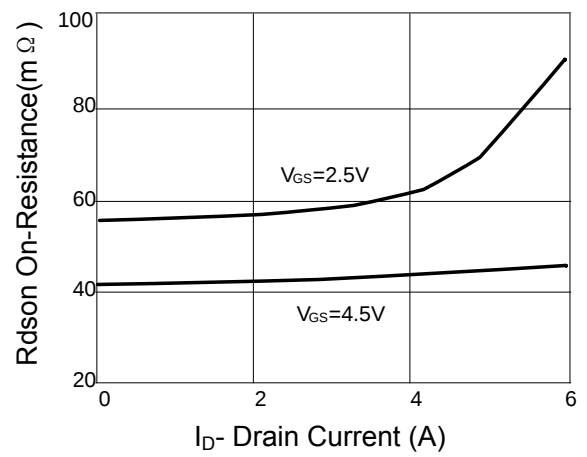


Figure 4: Drain source on-resistance

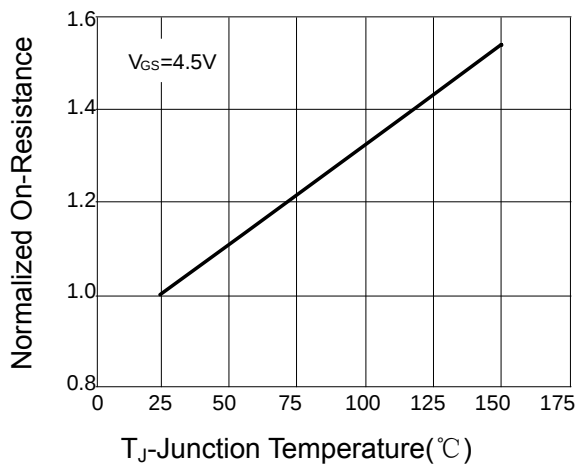


Figure 5: Drain source on-resistance

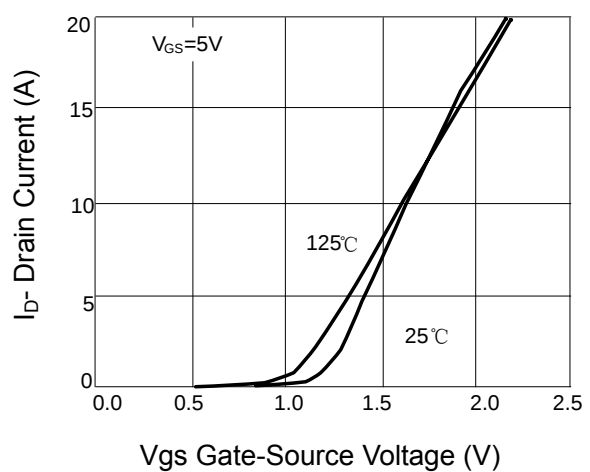


Figure 6: Transfer characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

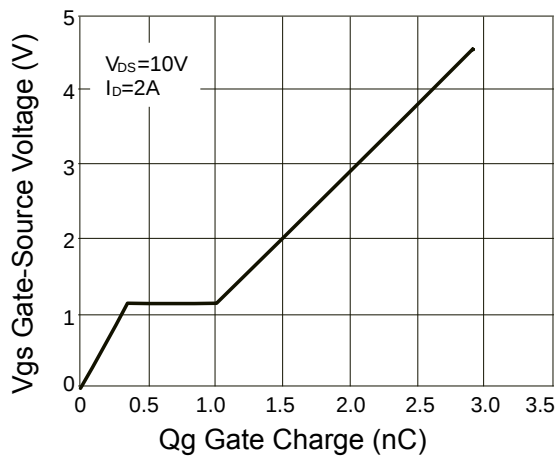


Figure 7: Gate charge

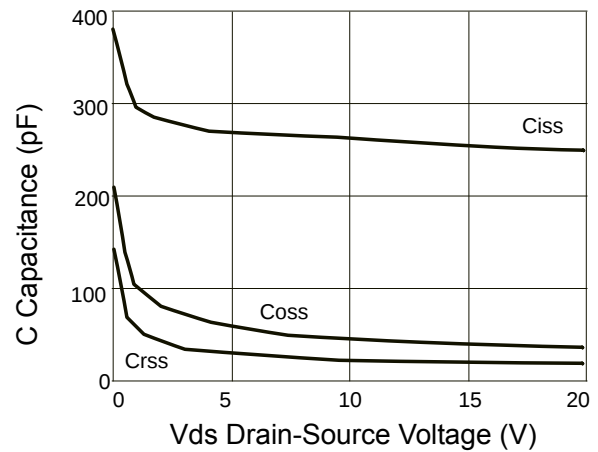


Figure 8: Capacitance vs. vds

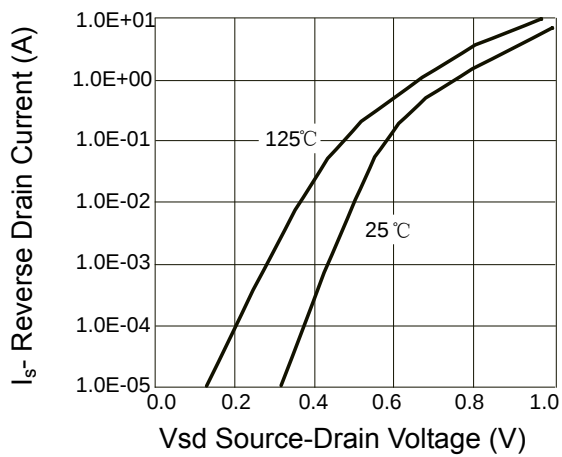


Figure 9: Source-drain diode forward

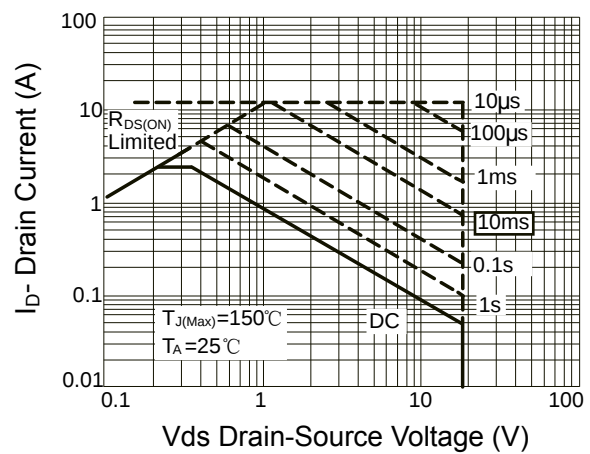
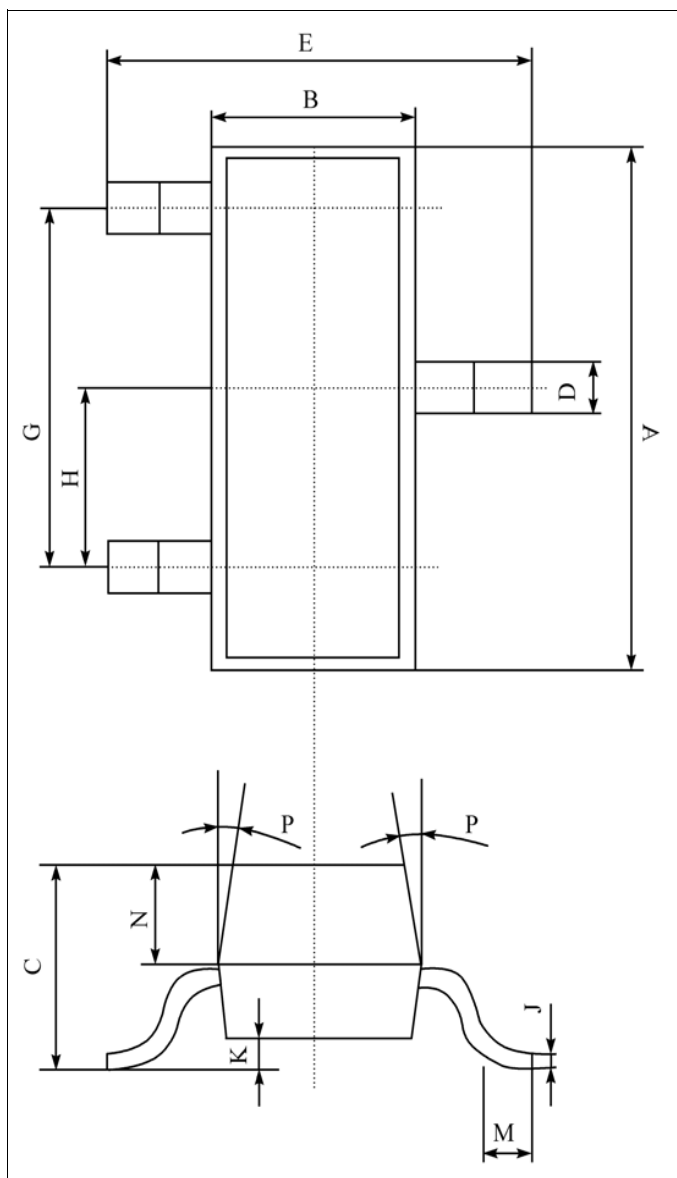


Figure 10: Safe operation area

■ SOT-23-3L 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)	