

PRODUCT CHARACTERISTICS

VDSS	-20V
$R_{DS(on)Typ}(V_{GS} = -4.5V)$	104mΩ
$R_{DS(on)typ}(V_{GS} = -2.5V)$	135 mΩ
ID	-2.3A

APPLICATIONS

- Load switch for portable
- DC/DC converter

FEATURES

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

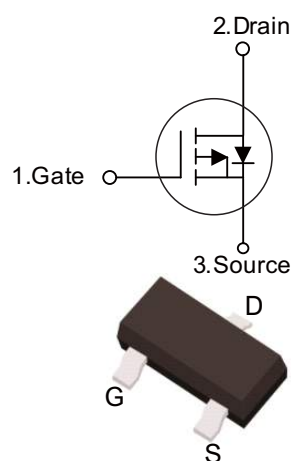
ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT2301SB2	SOT-23	3000pieces/Real

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-2.3	A
Pulsed Drain Current	I_{DM}	-9	A
Maximum Power Dissipation	P_D	0.7	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	°C

Symbol



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

Parameter	Symbol	Test condition	Min.	Typ.	Max.	Unit
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
Off characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.7	-1	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-2 A	-	104	120	mΩ
		V _{GS} =-2.5V, I _D =-1.8A	-	135	170	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-2A	4	-	-	S
On characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, F=1.0MHz	-	190	-	PF
Output Capacitance	C _{oss}		-	25	-	PF
Reverse Transfer Capacitance	C _{rss}		-	25	-	PF
Switching characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-10V, R _L =5Ω V _{GS} =-4.5V, R _{GEN} =3Ω	-	10	-	nS
Turn-on Rise Time	t _r		-	5.0	-	nS
Turn-Off Delay Time	t _{d(off)}		-	21	-	nS
Turn-Off Fall Time	t _f		-	7	-	nS
Total Gate Charge	Q _g	V _{DS} =-10V, I _D =-2A, V _{GS} =-4.5V	-	3.0	-	nC
Gate-Source Charge	Q _{gs}		-	0.5	-	nC
Gate-Drain Charge	Q _{gd}		-	0.8	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1A	-	-	-1.2	V
Diode Forward Current	I _S		-	-	-2.0	A

■ TYPICAL CHARACTERISTICS

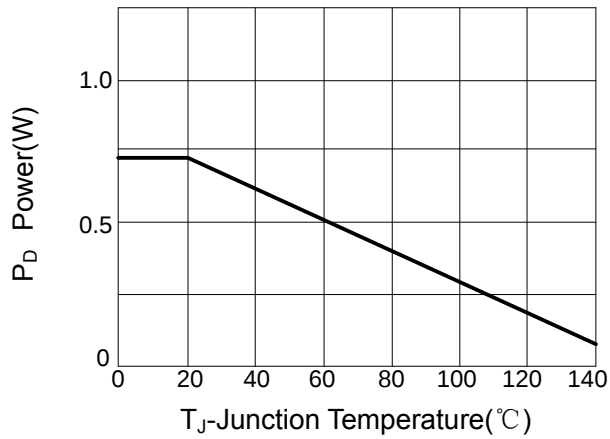


Figure 1: Power dissipation

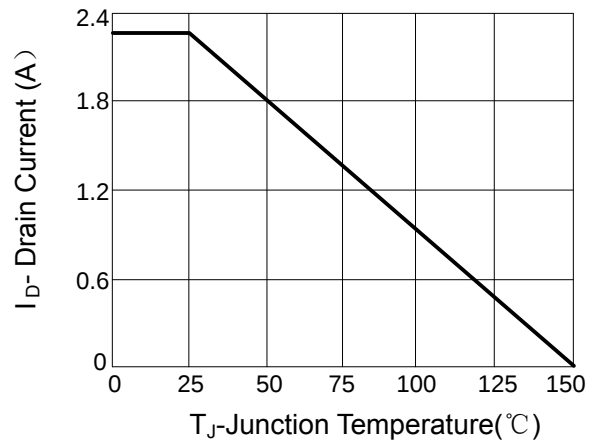


Figure 2: Drain current

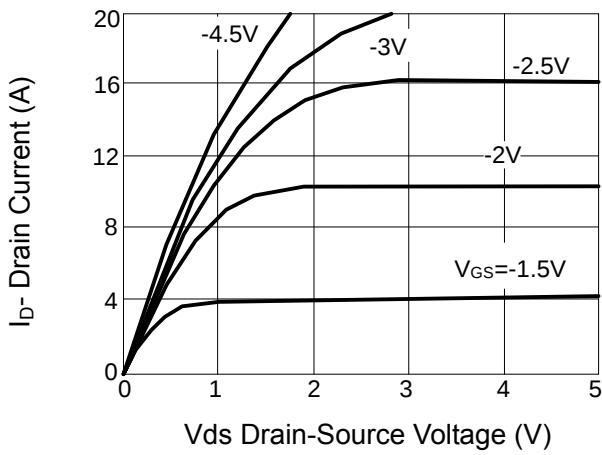


Figure 3: Output characteristics

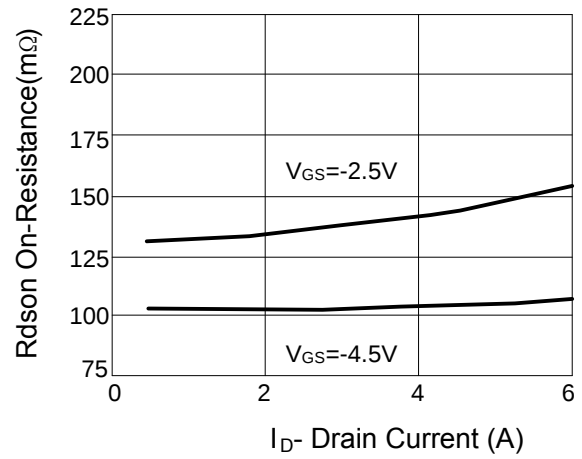


Figure 4: Drain-source on-resistance

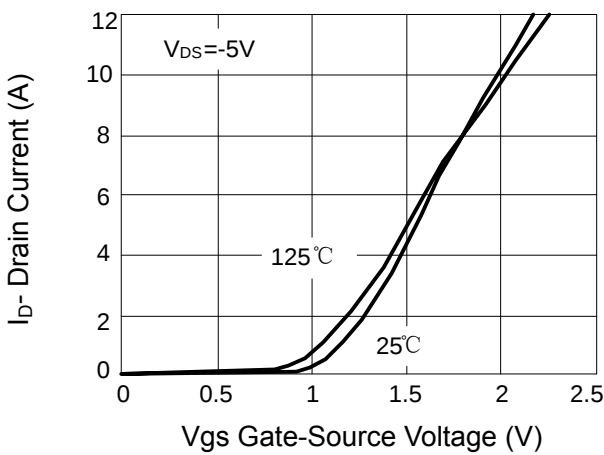


Figure 5: Transfer characteristics

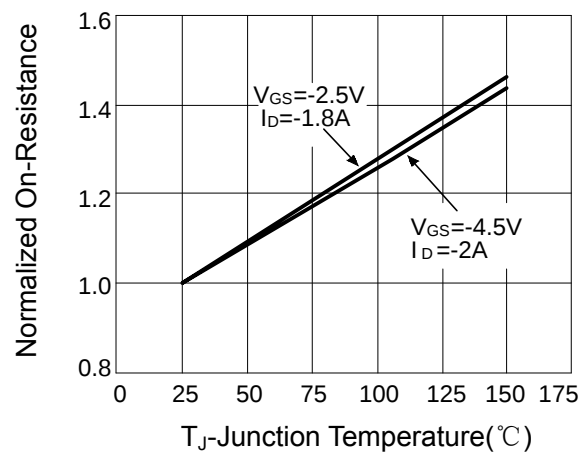
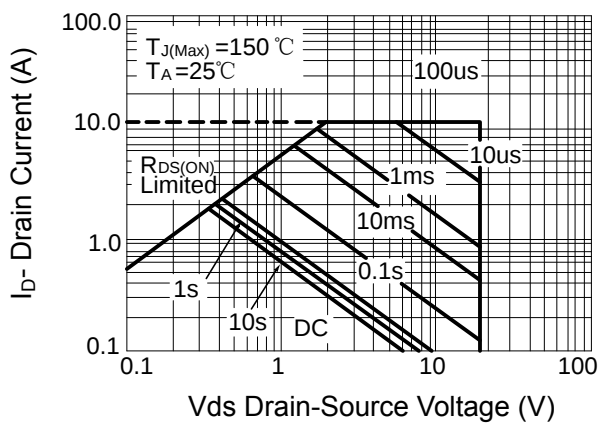
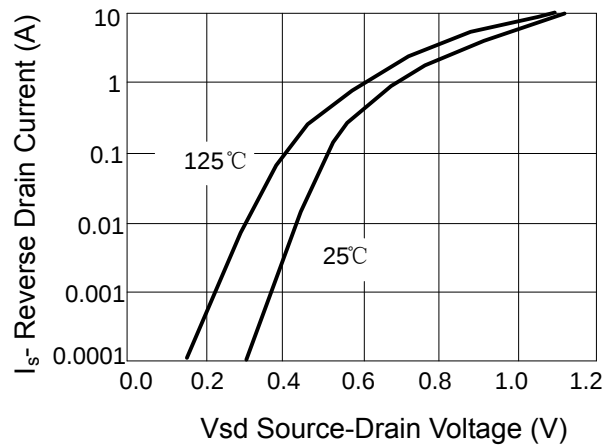
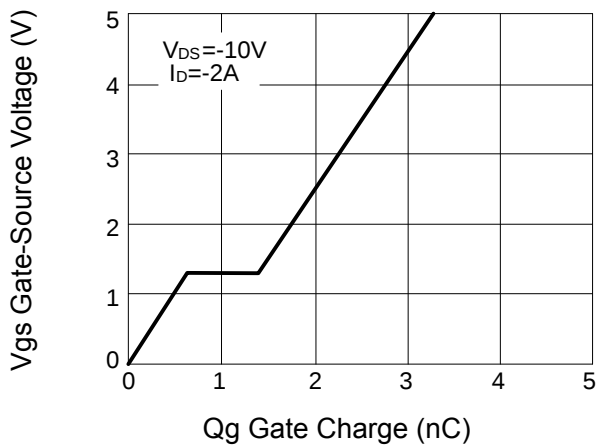
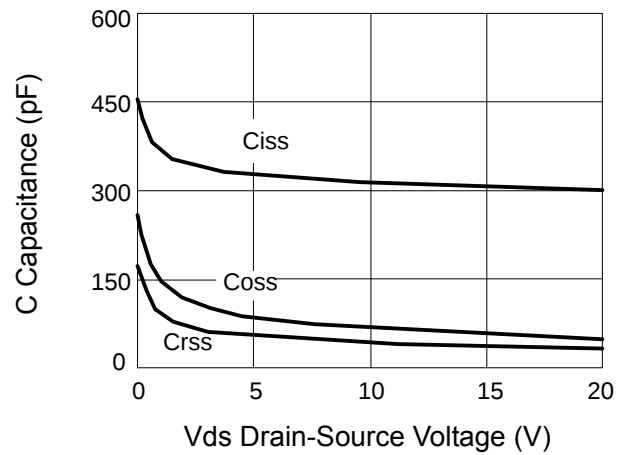
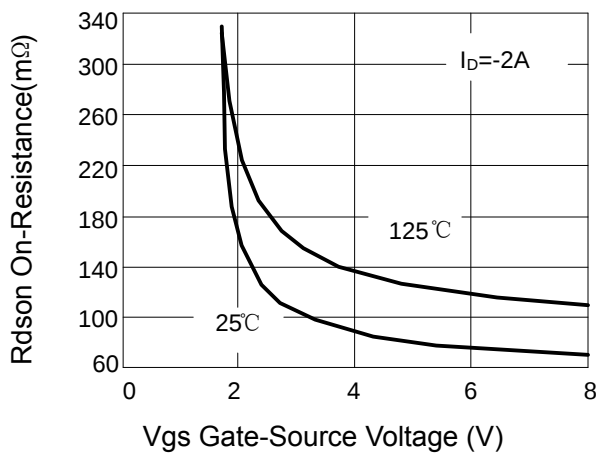
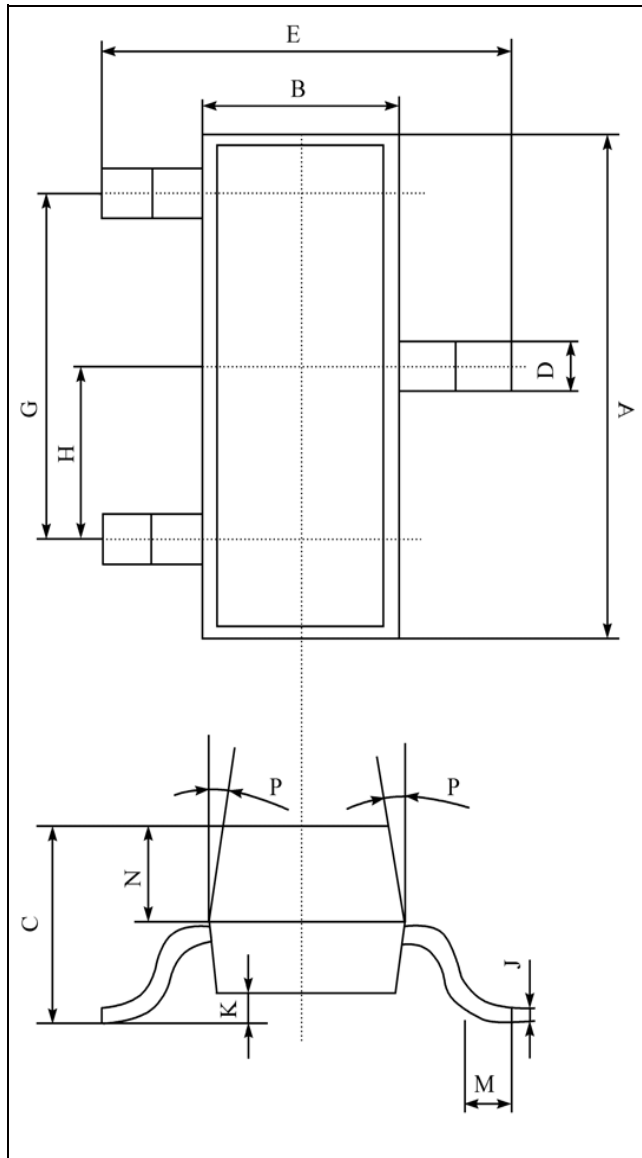


Figure 6: Drain-source on-resistance

■ TYPICAL CHARACTERISTICS(Cont.)



■ SOT-23 PACKAGE OUTLINE DIMENSIONS

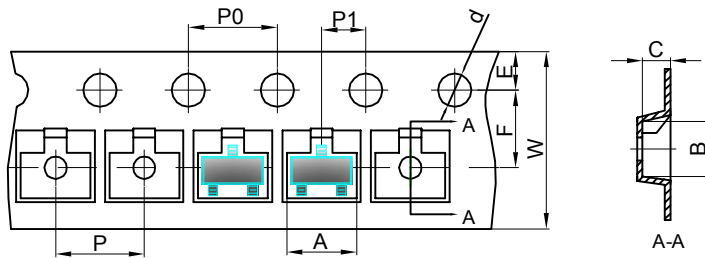


单位 (UNIT) : mm

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)	

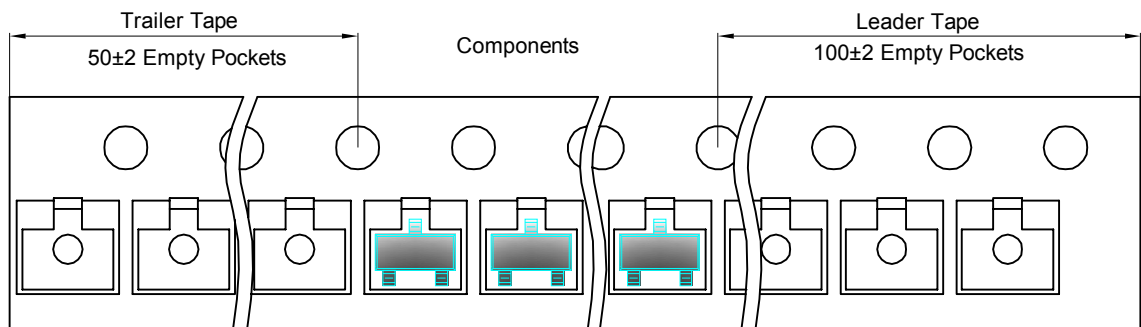
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

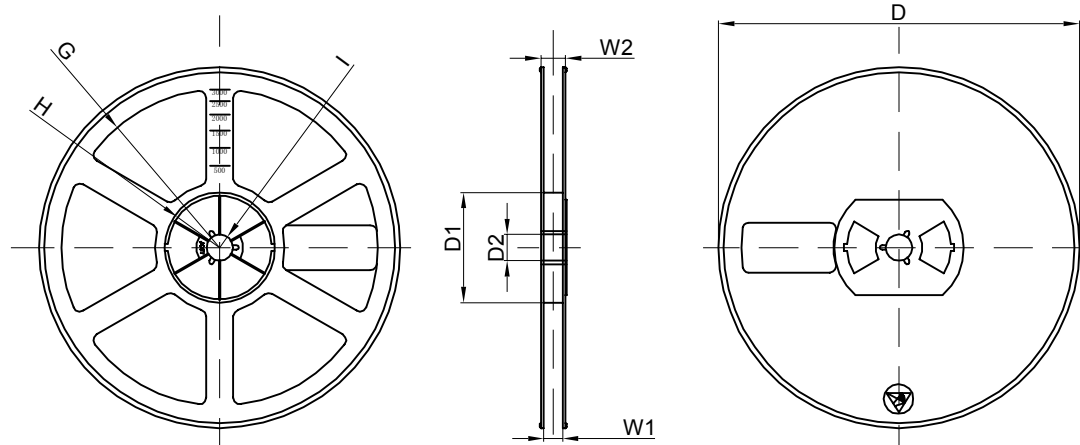


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	192×192×193	180,000 pcs	404×404×214	