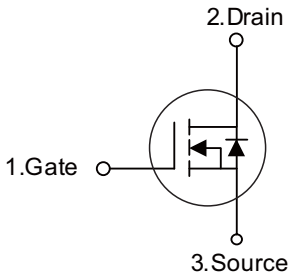
■ PRODUCT CHARACTERISTICS

VDSS	20V
R_{DS}(on)Typ(@V_{GS}=4.5 V)	35mΩ
R_{DS}(on)Typ(@V_{GS}=2.5 V)	55mΩ
ID	3

Symbol

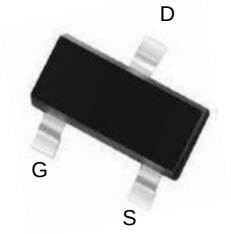


■ APPLICATIONS

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	MOT2302AB2	SOT-23	3000pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage (V_{GS}=0V)	V_{DS}	20	V
Gate-Source Voltage (V_{DS}=0V)	V_{GS}	±12	V
Drain Current-Continuous	I_D	3	A
Maximum Power Dissipation	P_D	0.9	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	139	℃/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

■ELECTRICAL CHARACTERISTICS (T_C=25°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	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=18V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±12V,V_{DS}=0V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.5	0.75	1.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=2.5V, I_D=2.8A	-	50	70	mΩ
		V_{GS}=4.5V, I_D=3A	-	35	50	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=3A	-	8	-	S
Dynamic characteristics						
Input Capacitance	C_{lss}	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=3.3Ω V_{GS}=4.5V,R_{GEN}=6Ω	-	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=3A, 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=3.0A	-	0.75	1.2	V
Diode Forward Current	I_S		-	-	3.0	A

■ TYPICAL CHARACTERISTICS

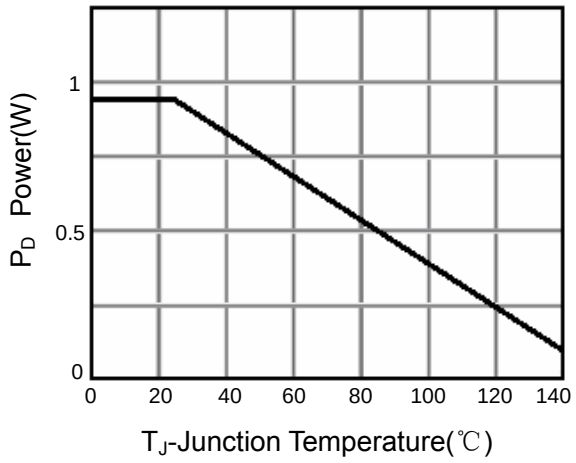


Figure 1: Power dissipation

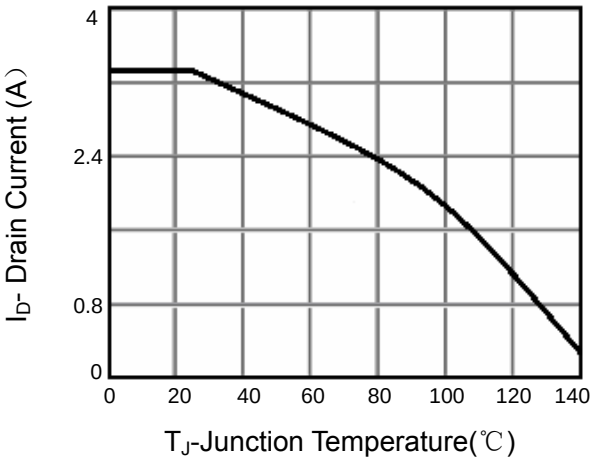


Figure 2: Drain current

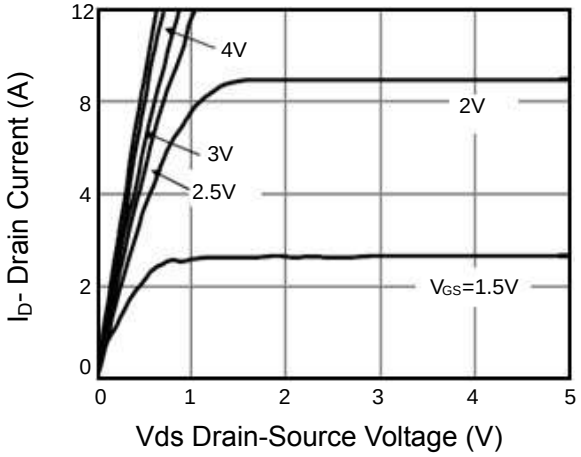


Figure 3: Output characteristics

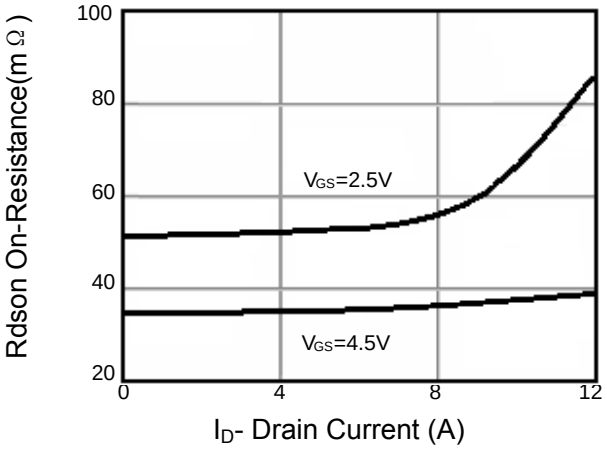


Figure 2: Drain source on-resistance

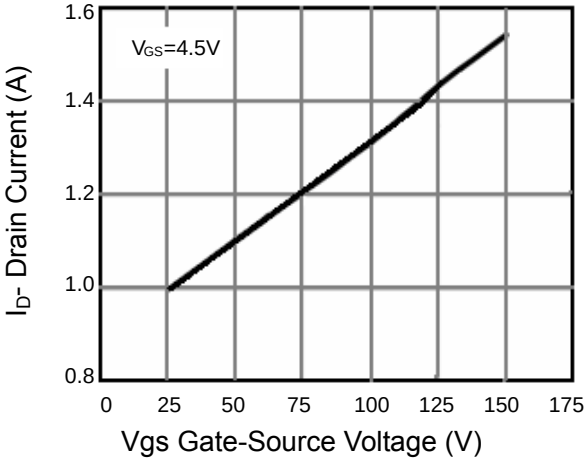


Figure 5: Transfer characteristics

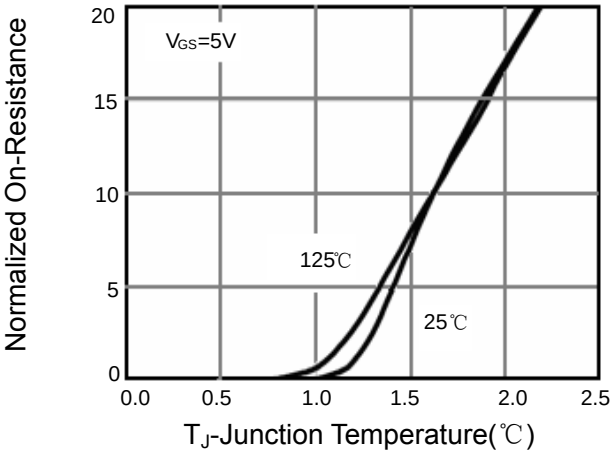


Figure 6: Drain source on-resistance

■ TYPICAL CHARACTERISTICS(Cont.)

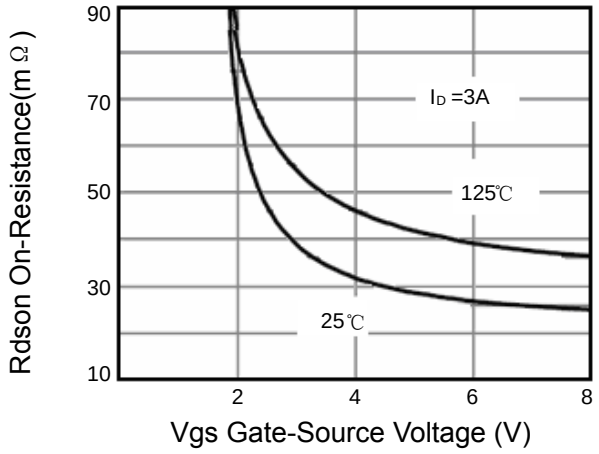


Figure 7: Rdson vs.vgs

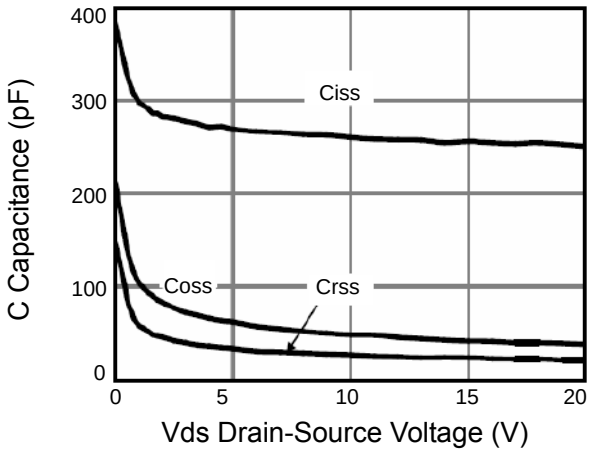


Figure 8: Capacitance vs. vds

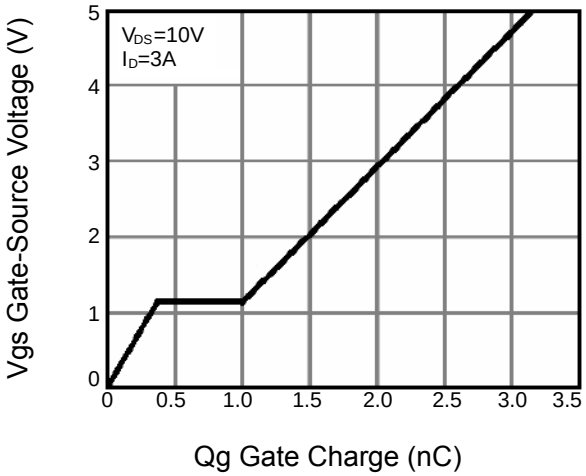


Figure 9: Gate charge

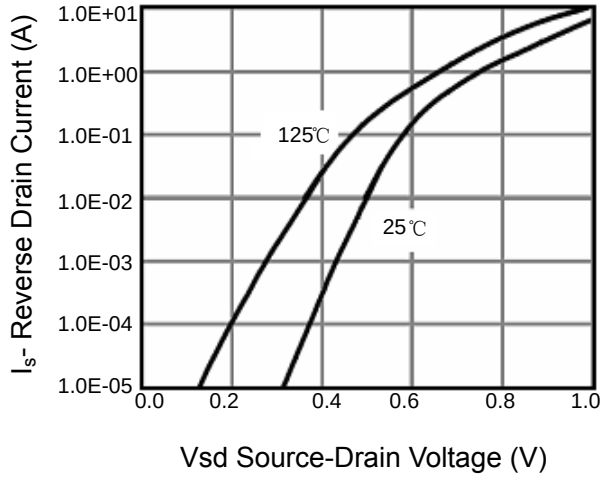


Figure 10: Source-drain diode forward

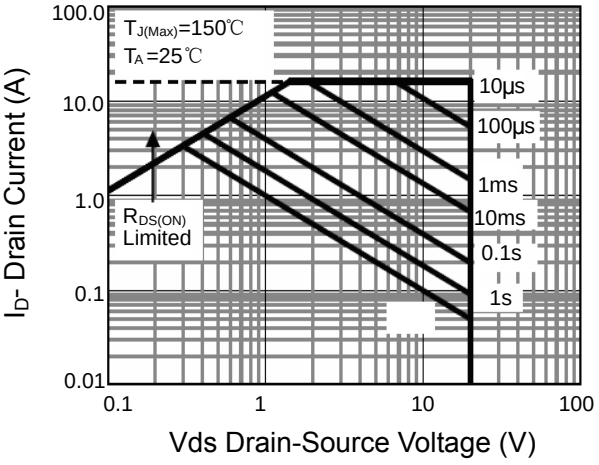
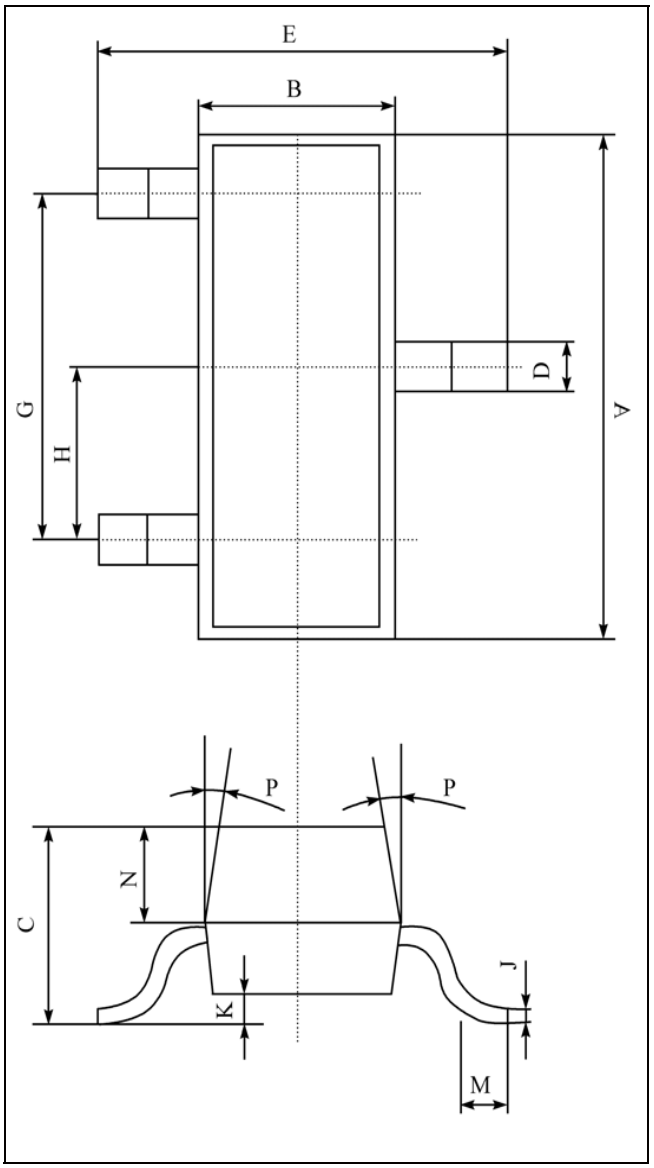


Figure 11: Safe operation area

■SOT-23 PACKAGE OUTLINE DIMENSIONS

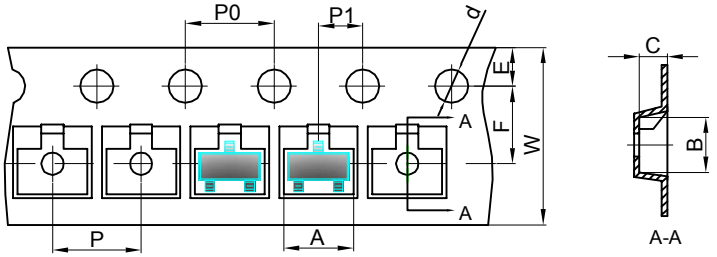


单位（UNIT）：mm

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°

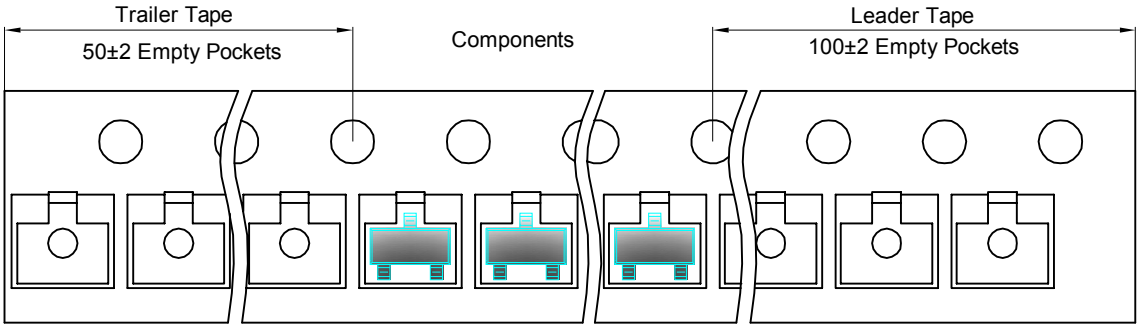
Packing
SOT-23 包装规格
SMD片式表面贴封装
包装方式: 载带卷盘包装
Tape & Reel, 3Kpcs/Reel
每卷数量3000只（3Kpcs/Reel）
每盒数量45000只（45Kpcs/BOX）
每箱数量180000只（180Kpcs/Cartons）

SOT-23 Embossed Carrier Tape

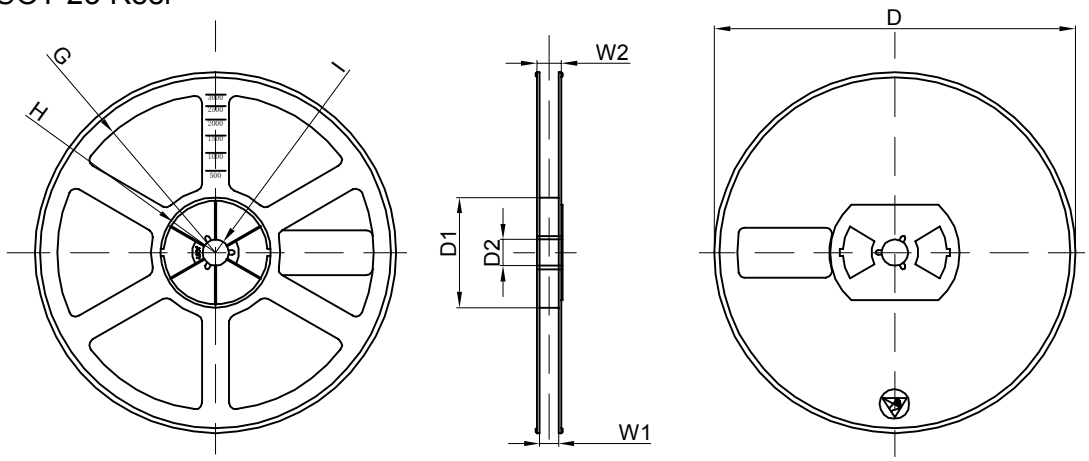


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	