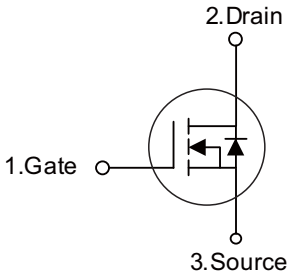
■ PRODUCT CHARACTERISTICS

VDSS	20V
R_{DS}(on)max(V_{GS} @=4.5 V)	30mΩ
R_{DS}(on)max(V_{GS} @=2.5 V)	40mΩ
ID	3A

Symbol

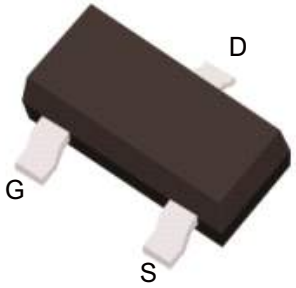


■ APPLICATIONS

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	MOT2300B2	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	1.2	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	103	℃/W

■ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified)

Parameter	Symbol	Test Conditon	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =10μA	20	-	-	V
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.73	1.2	
Gate-body leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±8V	-	-	±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V, V_{GS} =0V	-	-	1	μA
Drain-source on-resistance	$r_{DS(on)}$	V_{GS} =4.5V, I_D =3A	-	30	40	mΩ
		V_{GS} =2.5V, I_D =3A	-	40	60	
Forward transconductance	g_{fs}	V_{DS} =5V, I_D =3A	-	8	-	S
Diode forward voltage	V_{SD}	I_S=0.94A,V_{GS}=0V	-	0.76	1.2	V
Dynamic						
Total gate charge	Q_g	V_{DS} =10V,V_{GS} =4.5V,I_D =2A	-	3	-	nC
Gate-source charge	Q_{gs}		-	0.5	-	
Gate-drain charge	Q_{gd}		-	0.7	-	
Input capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f=1MHz	-	200	-	pF
Output capacitance	C_{oss}		-	35	-	
Reverse transfer capacitance	C_{rss}		-	28	-	
Switching						
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V, I_D ≈2A, V_{GS} =4.5V,Rg=3Ω	-	3	-	ns
Rise time	t_r		-	11	-	
Turn-off delay time	$t_{d(off)}$		-	20	-	
Fall time	t_f		-	8	-	

■ TYPICAL CHARACTERISTICS

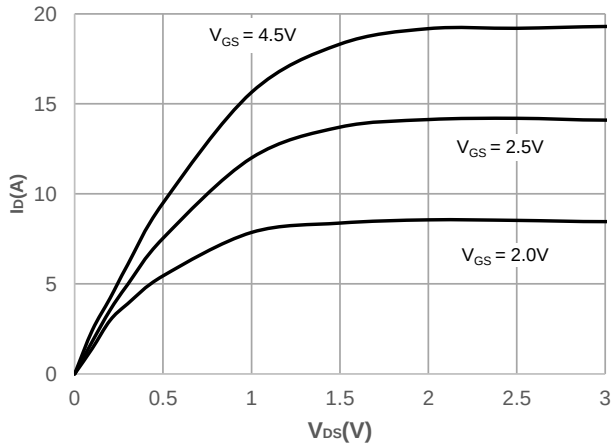


Figure1:output characteristics

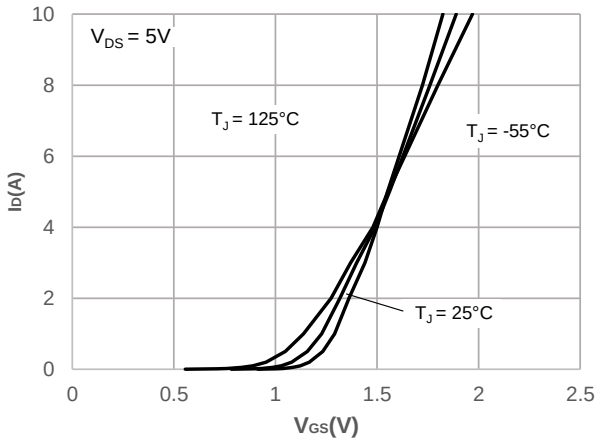


Figure1:typical transfer characteristics

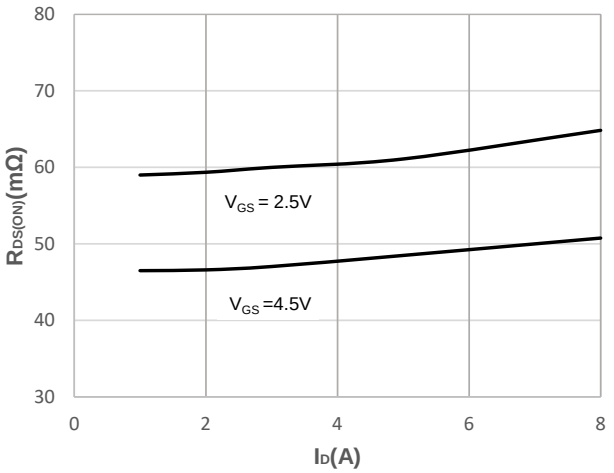


Figure3:on-resistance vs. drain current

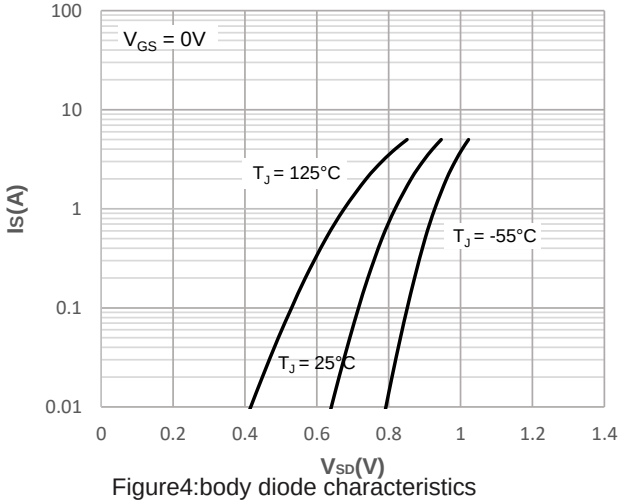


Figure4:body diode characteristics

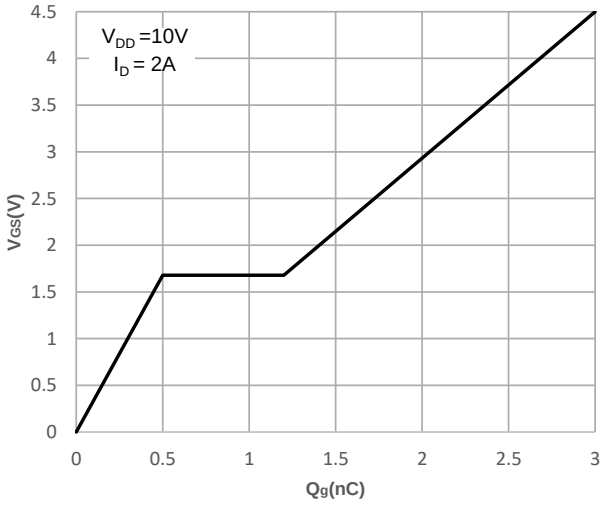


Figure5:gate charge characteristics

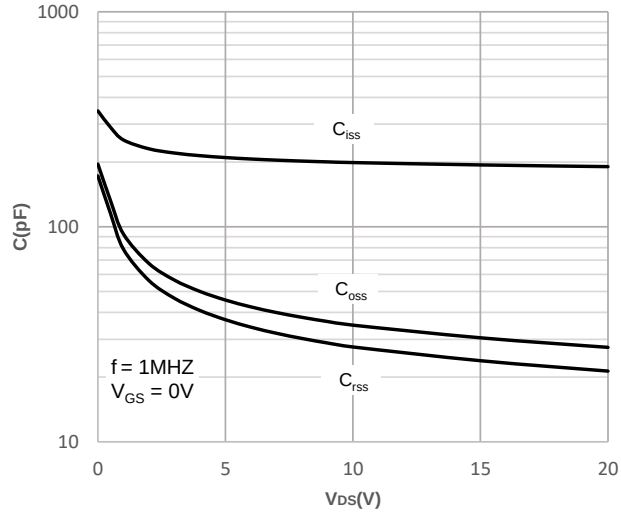


Figure6:capacitance characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

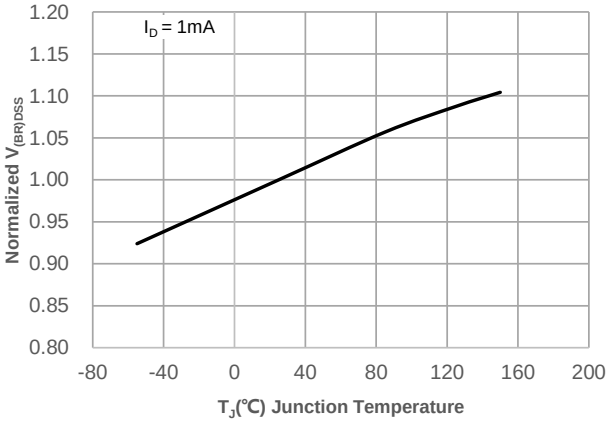


Figure7:normalized breakdown voltage vs. junction temperature

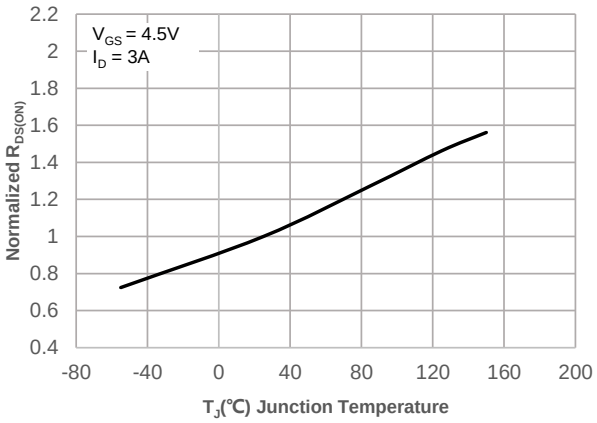


Figure8:normalized on resistance vs. junction temperature

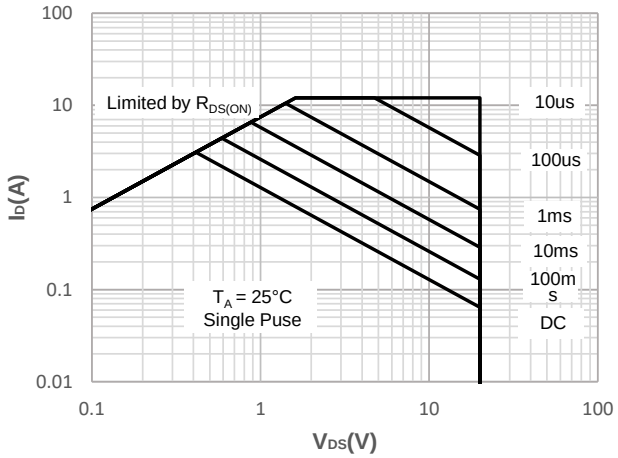


Figure9:maximum safe operating area

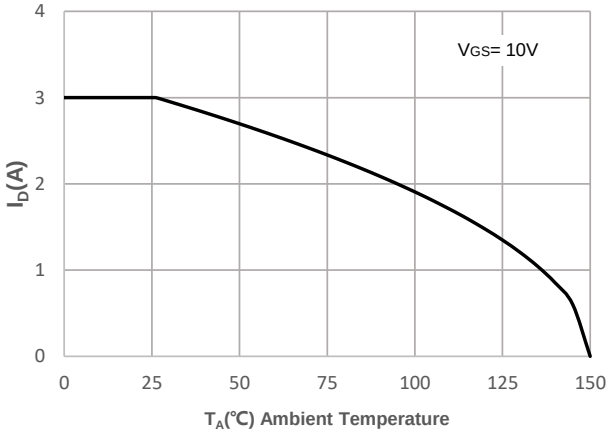


Figure10:maximum continous drain current vs, ambient temperature

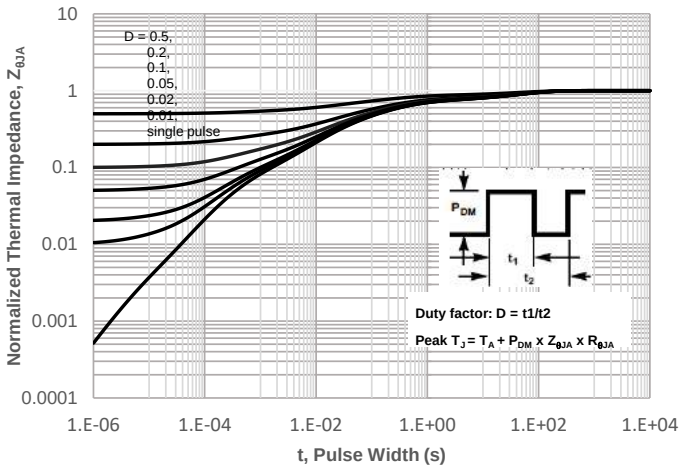


Figure11:normalized maximum transient thermal impedance

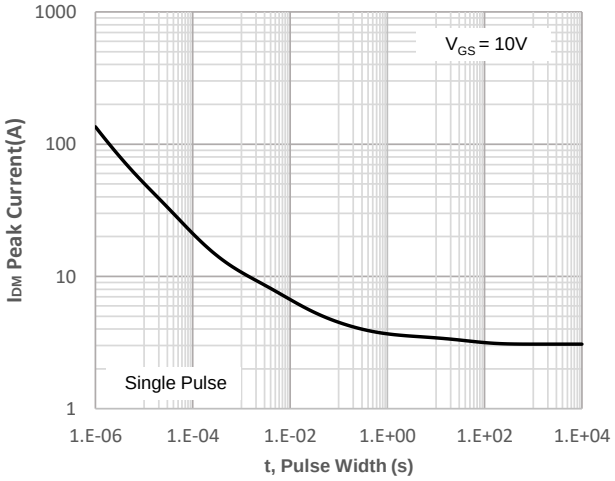
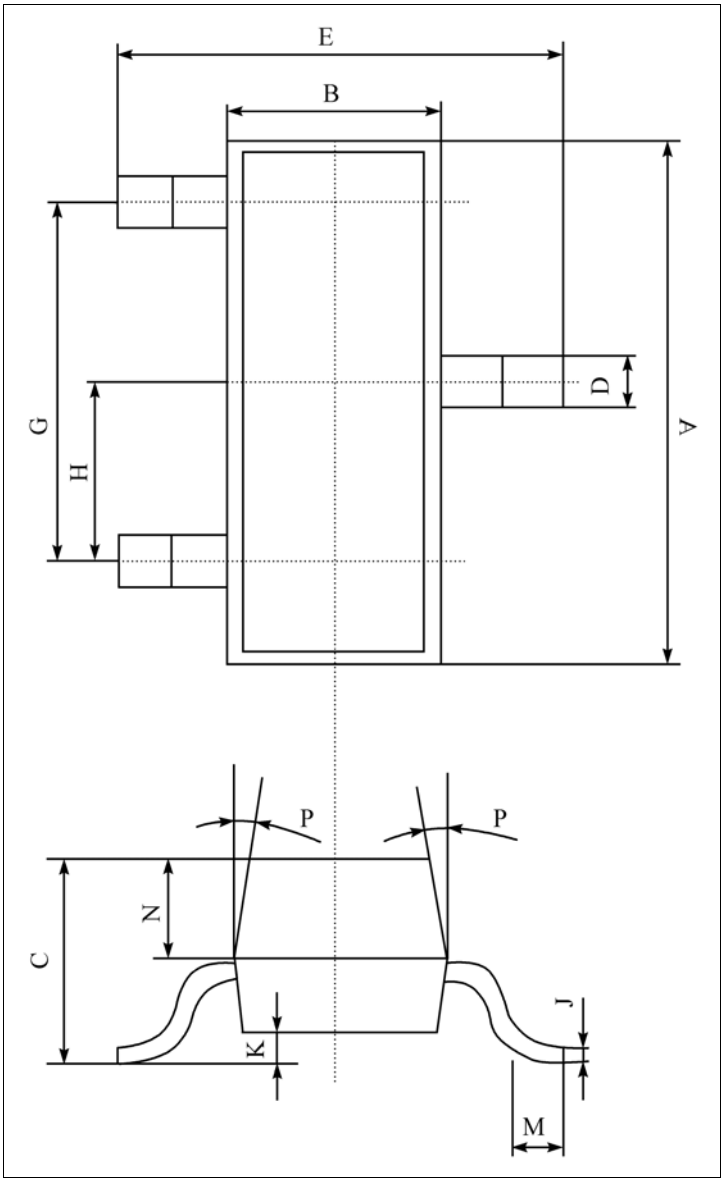


Figure12:peak current capacity

■SOT-23-3L PACKAGE OUTLINE DIMENSIONS

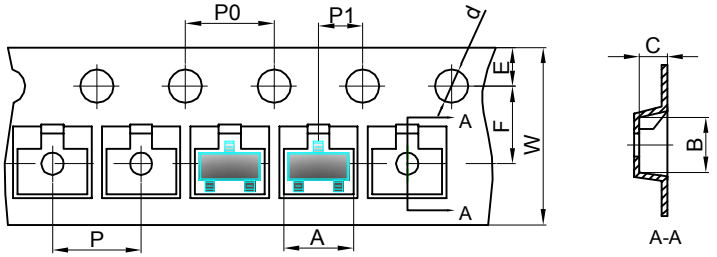


单位（UNIT）：mm

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°

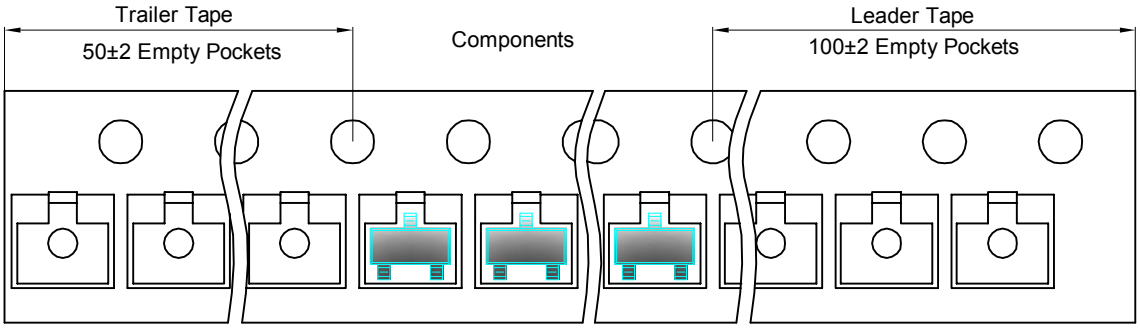
Packing
SOT-23 包装规格
SMD片式表面贴封装
包装方式: 载带卷盘包装
Tape & Reel, 3Kpcs/Reel
每卷数量3000只（3Kpcs/Reel）
每盒数量45000只（45Kpcs/BOX）
每箱数量180000只（180Kpcs/Cartons）

SOT-23 Embossed Carrier Tape

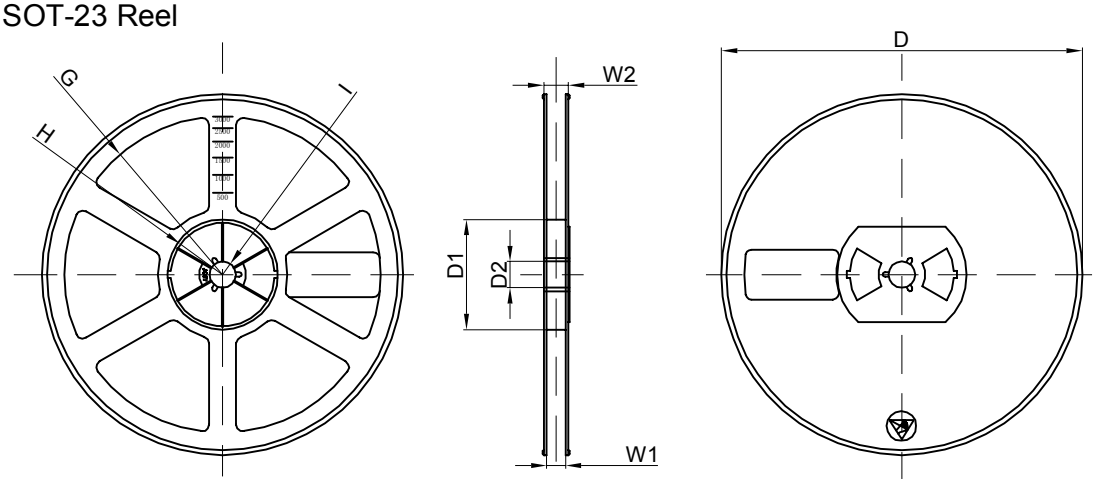


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	