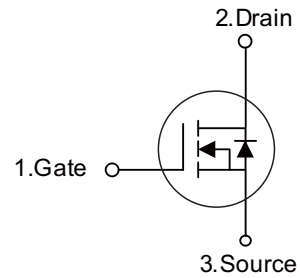


■ PRODUCT CHARACTERISTICS

VDSS	20V
$R_{DS(on)}$ Typ@ $V_{GS}=4.5V$	55m $\Omega$
$R_{DS(on)}$ Typ@ $V_{GS}=2.5V$	75m $\Omega$
ID	2A

Symbol

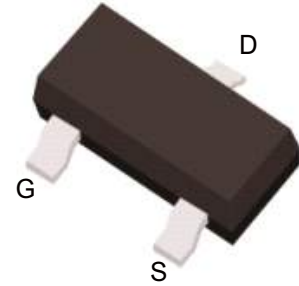


■ APPLICATIONS

- Battery protection
- Load switch
- Power management

■ FEATURES

- 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	MOT2302	SOT-23	3000pieces/Reel

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

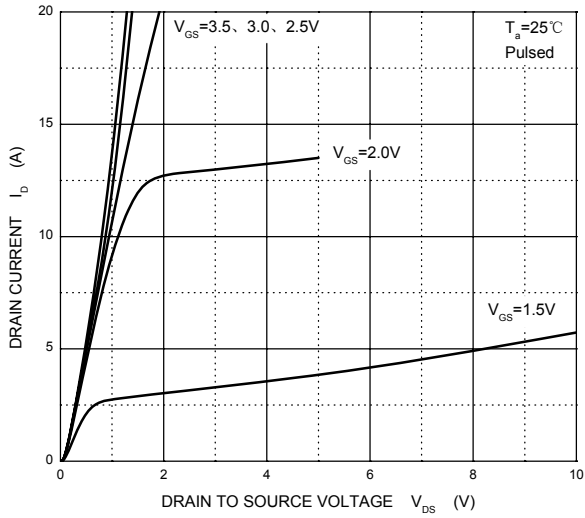
Parameter	Symbol	Value	Unit
Drain-Source Voltage ( $V_{GS}=0V$ )	$V_{DS}$	20	V
Gate-Source Voltage ( $V_{DS}=0V$ )	$V_{GS}$	$\pm 12$	V
Drain Current-Continuous	$I_D$	2.0	A
Maximum Power Dissipation	$P_D$	0.6	W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 To 150	$^\circ C$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	357	$^\circ C/W$

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

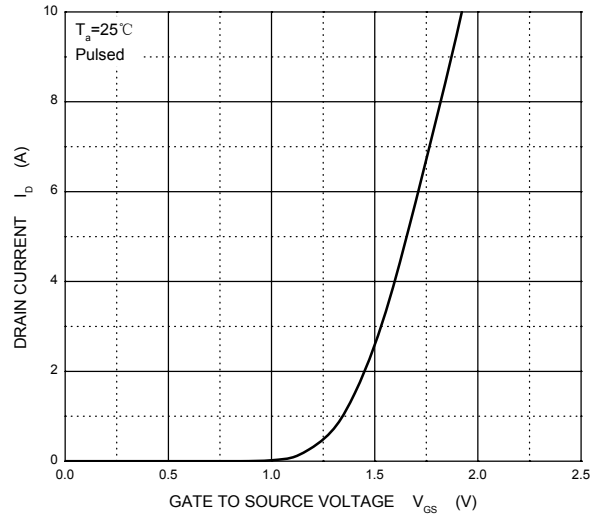
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Static</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	20	-	-	V
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.65	0.95	1.2	V
Gate-body leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$	-	-	$\pm 100$	nA
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$	-	-	1	$\mu A$
Drain-source on-resistance	$r_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3A$	-	55	70	m $\Omega$
		$V_{GS} = 2.5V, I_D = 3A$	-	75	90	m $\Omega$
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
<b>Dynamic</b>						
Total gate charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 3A$	-	4.0	-	nC
Gate-source charge	$Q_{gs}$		-	0.65	-	nC
Gate-drain charge	$Q_{gd}$		-	1.5	-	nC
Input capacitance	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1\text{MHz}$	-	300	-	pF
Output capacitance	$C_{oss}$		-	120	-	pF
Reverse transfer capacitance	$C_{rss}$		-	80	-	pF
<b>Switching</b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V,$ $R_L = 5.5\Omega, I_D \approx 3A,$ $V_{GEN} = 4.5V, R_g = 6\Omega$	-	7	-	ns
Rise time	$t_r$		-	55	-	ns
Turn-off delay time	$t_{d(off)}$		-	16	-	ns
Fall time	$t_f$		-	10	-	ns

■ TYPICAL CHARACTERISTICS

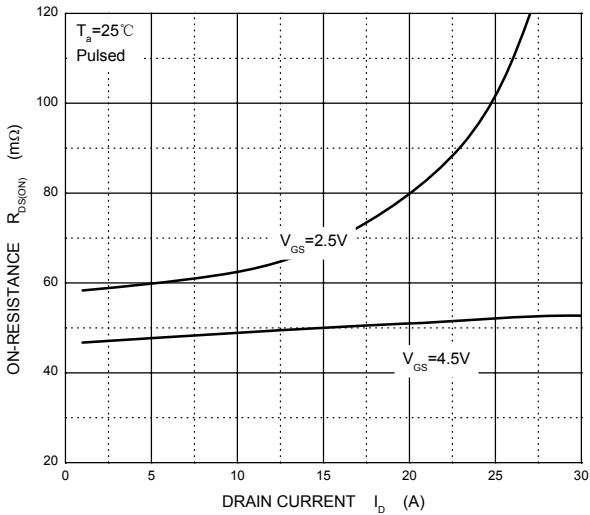
Output Characteristics



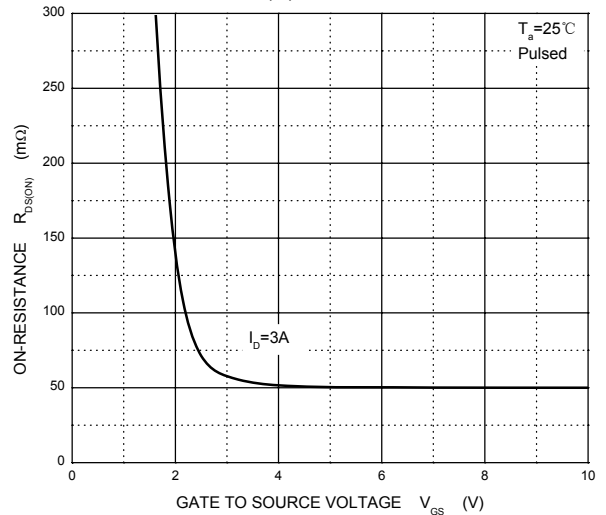
Transfer Characteristics



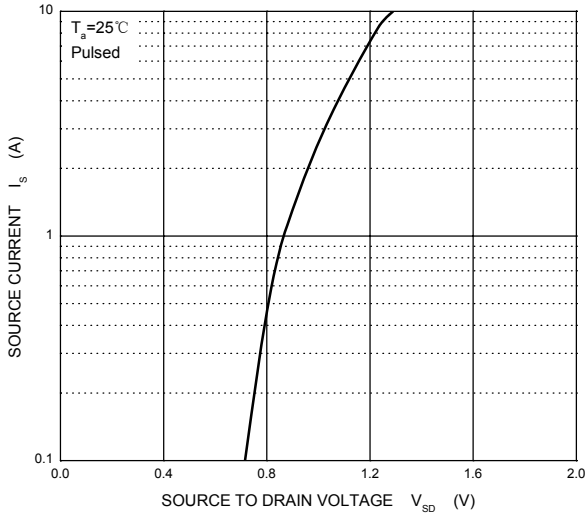
$R_{DS(ON)}$  —  $I_D$



$R_{DS(ON)}$  —  $V_{GS}$

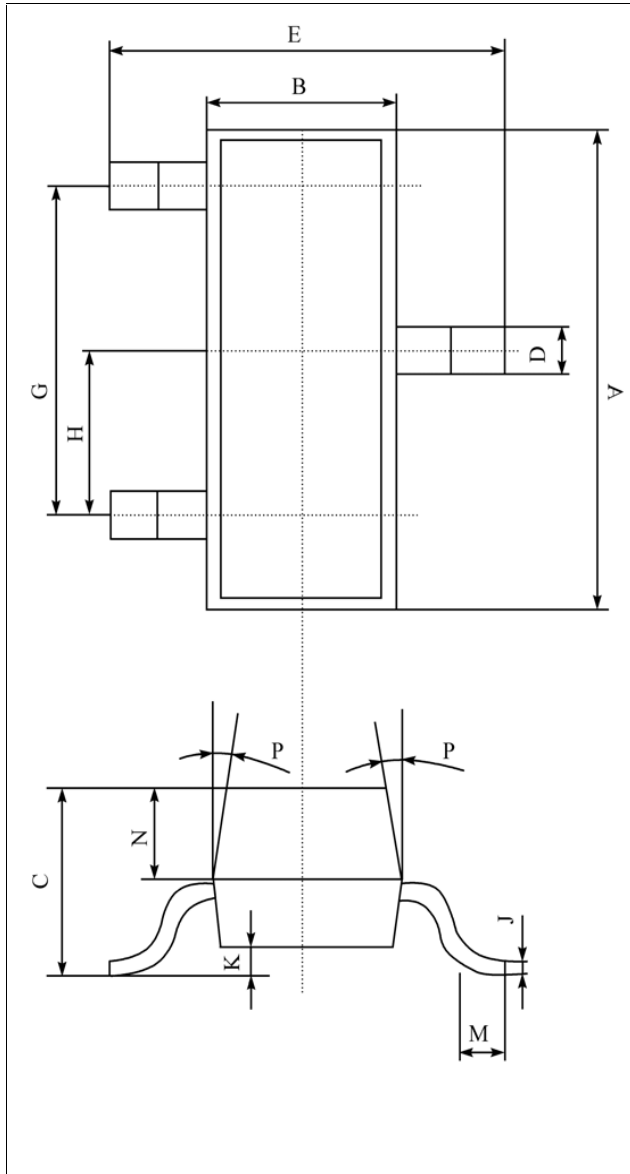


$I_S$  —  $V_{SD}$



■ SOT-23-3L PACKAGE OUTLINE DIMENSIONS

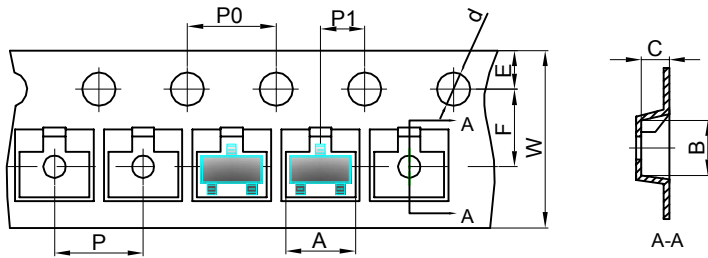
单位 (UNIT) : mm



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°

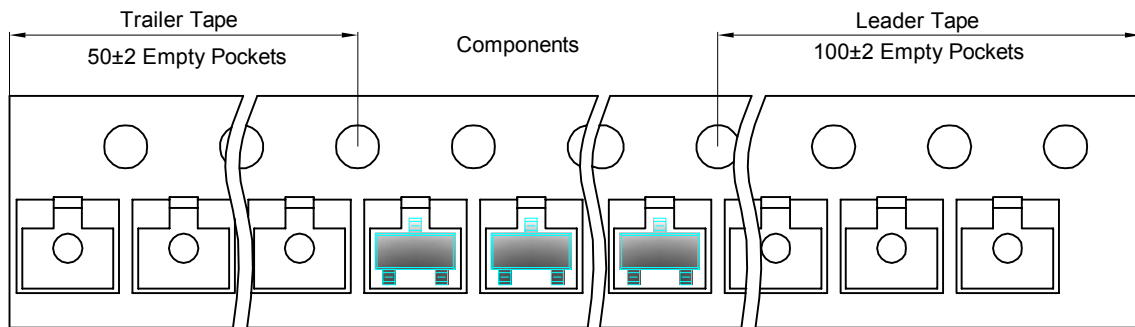
**Packing**  
**SOT-23 包装规格**  
**SMD片式表面贴封装**  
**包装方式: 载带卷盘包装**  
**Tape & Reel, 3Kpcs/Reel**  
**每卷数量3000只 (3Kpcs/Reel)**  
**每盒数量45000只 (45Kpcs/BOX)**  
**每箱数量180000只 (180Kpcs/Cartons)**

### SOT-23 Embossed Carrier Tape

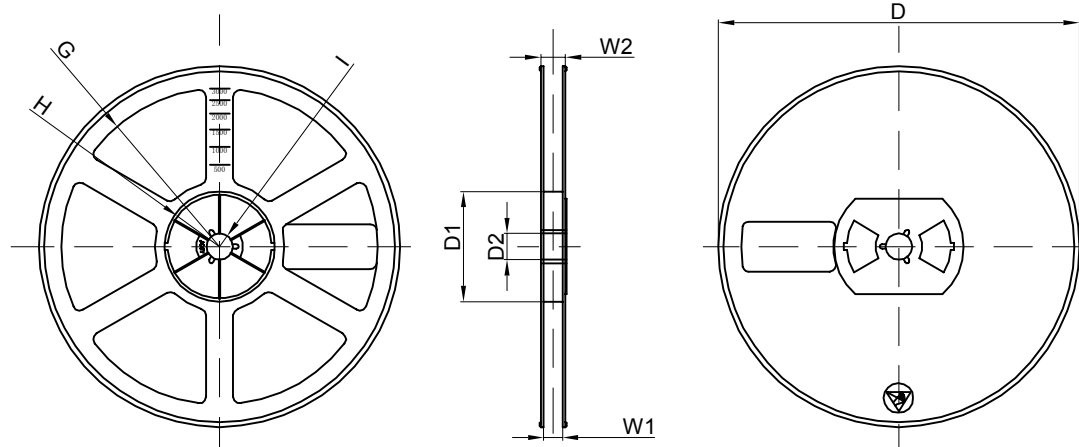


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

### 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	

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