

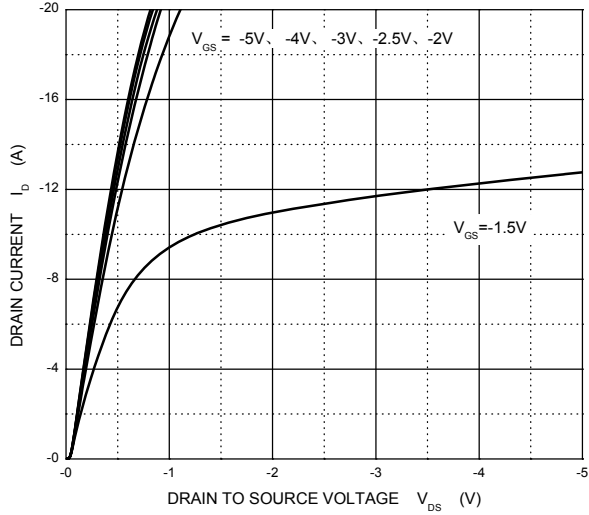


$T_a=25^{\circ}\text{C}$  unless otherwise specified

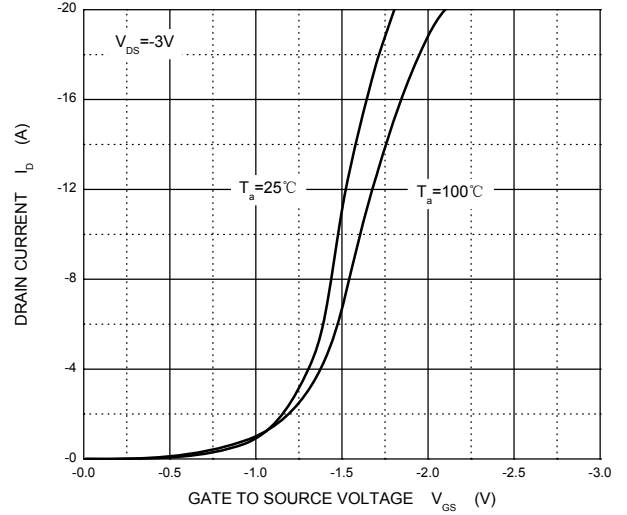
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-12			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = -12V, V_{GS} = 0V$			-1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 8V, V_{DS} = 0V$			$\pm 0.1$	$\mu A$
Gate threshold voltage (note 1)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4		-1	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -5A$		22	28	m $\Omega$
		$V_{GS} = -3.7V, I_D = -4.6A$		24	32	
		$V_{GS} = -2.5V, I_D = -4.3A$		27	40	
		$V_{GS} = -1.8V, I_D = -1A$		34	63	
		$V_{GS} = -1.5V, I_D = -0.5A$		42	150	
Forward tranconductance (note 1)	$g_{FS}$	$V_{DS} = -5V, I_D = -5A$		18		S
<b>Dynamic characteristics (note 2)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -6V, V_{GS} = 0V, f = 1MHz$		1275		pF
Output Capacitance	$C_{oss}$			255		pF
Reverse Transfer Capacitance	$C_{rss}$			236		pF
Gate resistance	$R_g$	$f = 1MHz$	1.9		19	$\Omega$
Total Gate Charge	$Q_g$	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -5A$		14	21	nC
Gate-Source Charge	$Q_{gs}$			2.3		nC
Gate-Drain Charge	$Q_{gd}$			3.6		nC
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -6V, V_{GEN} = -4.5V, I_D = -4A$ $R_L = 6\Omega, R_{GEN} = 1\Omega$		26	40	ns
Turn-on rise time	$t_r$			24	40	ns
Turn-off delay time	$t_{d(off)}$			45	70	ns
Turn-off fall time	$t_f$			20	35	ns
<b>Source-Drain Diode characteristics</b>						
Diode forward current	$I_S$	$T_C = 25^{\circ}\text{C}$			-1.4	A
Diode pulsed forward current	$I_{SM}$				-20	A
Diode Forward voltage (note 1)	$V_{DS}$	$V_{GS} = 0V, I_S = -4A$			-1.2	V
Diode reverse recovery time (note 2)	$t_{rr}$	$I_F = -4A, di/dt = 100A/\mu s$		24	48	ns
Diode reverse recovery charge (note 2)	$Q_{rr}$				8	16

- Notes :**
1. Pulse test; pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
  2. Guaranteed by design, not subject to production testing.

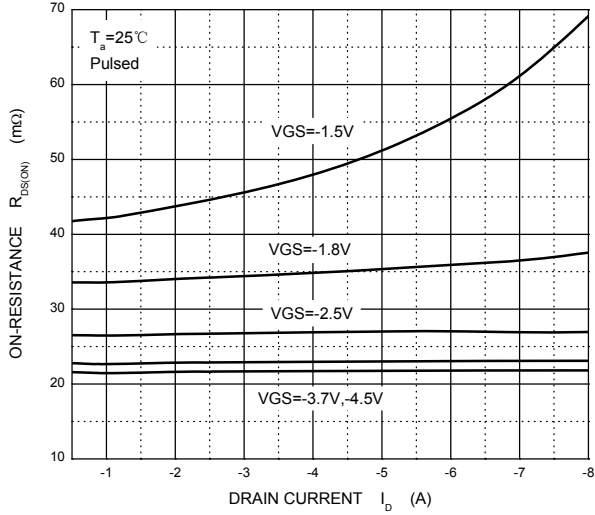
**Output Characteristics**



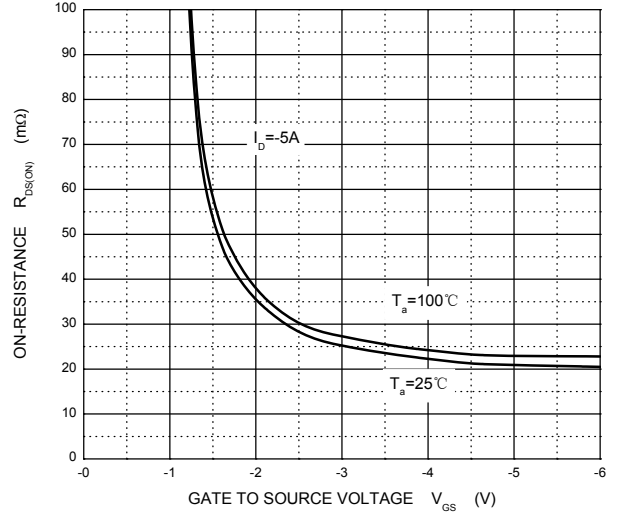
**Transfer Characteristics**



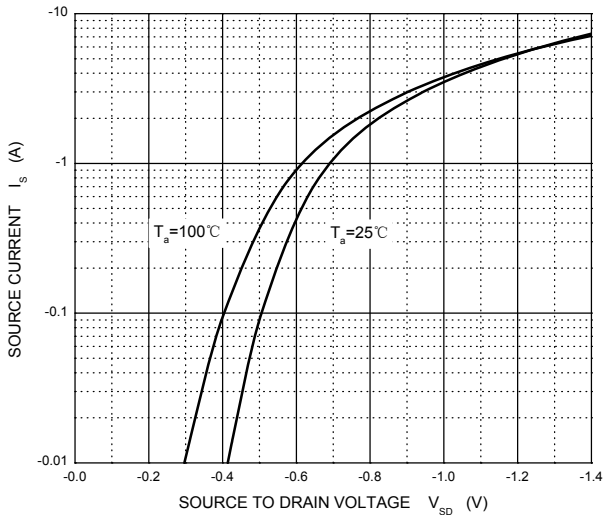
**$R_{DS(ON)}$  —  $I_D$**



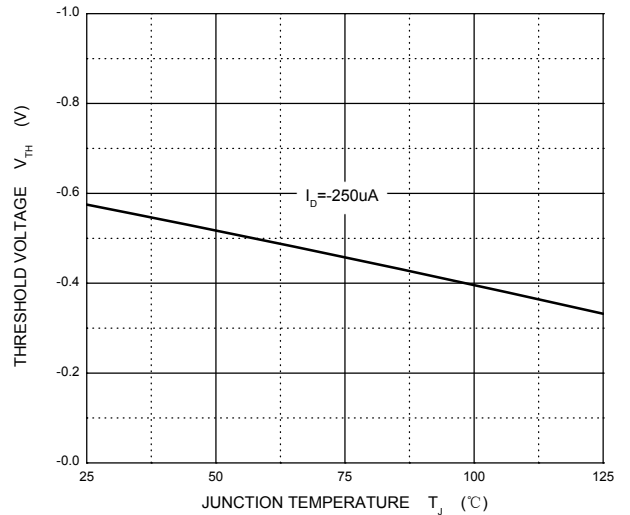
**$R_{DS(ON)}$  —  $V_{GS}$**

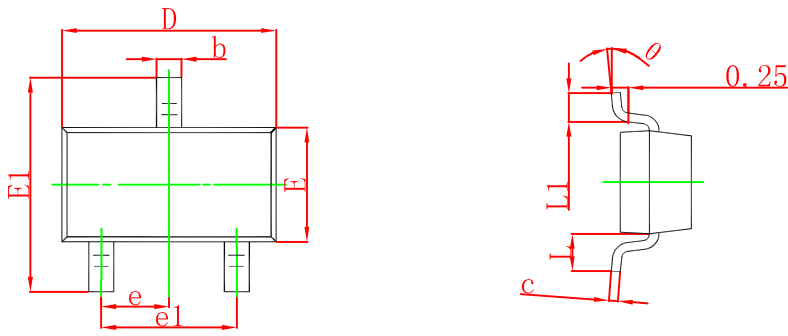


**$I_S$  —  $V_{SD}$**



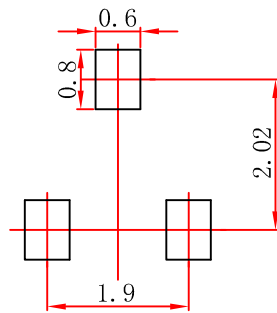
**Threshold Voltage**





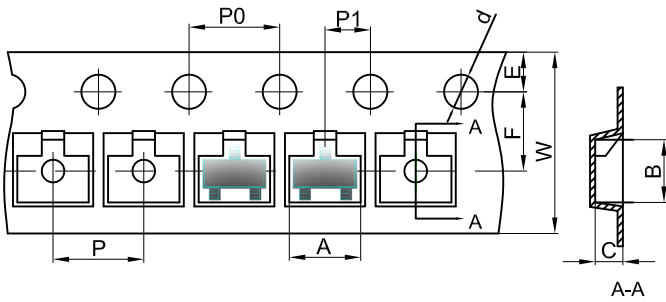
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## SOT-23 Suggested Pad Layout



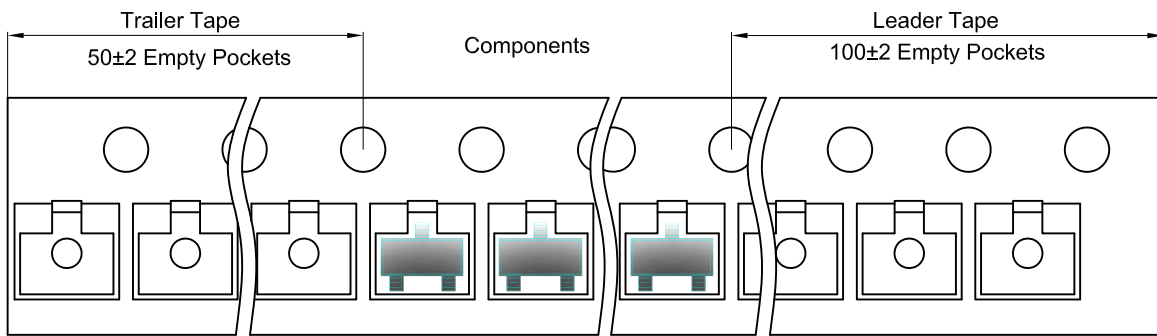
- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

## SOT-23 Embossed Carrier Tape

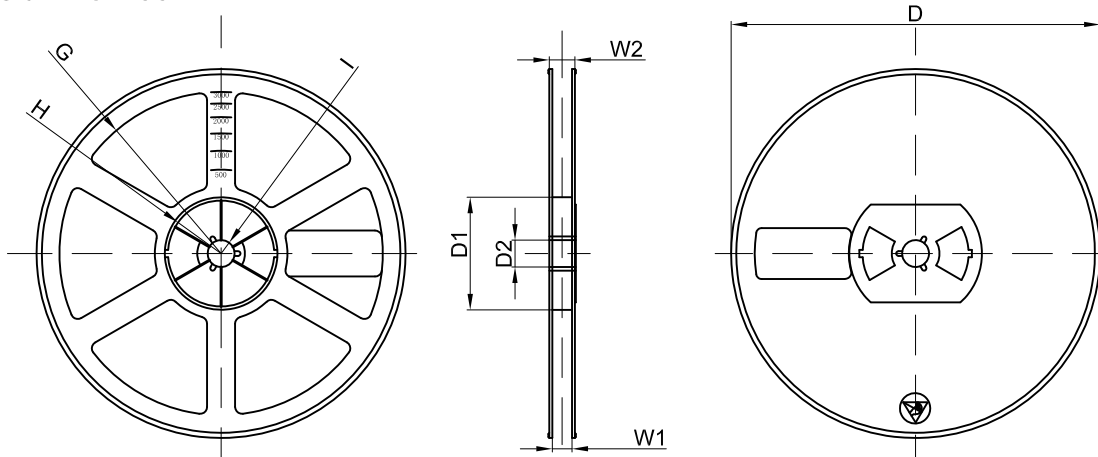


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

## 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
3000 pcs	7 inch	3000 pcs