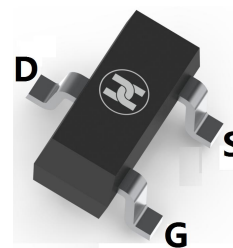
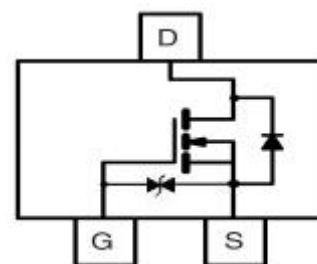


MOSFET (N-CHANNEL)
FEATURES

- Low On-Resistance: $R_{DS(ON)}$
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- ESD Protection

MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.008 grams (approximate)


SOT-23

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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	$\pm 20\text{V}$	V
Continuous drain current	I_D	340	mA
Pulsed drain current (Note 1)	I_{DM}	800	mA
Power dissipation	P_D	0.35	W
Thermal resistance from Junction to ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction And Storage temperature Range	T_J, T_{STG}	$-65 \sim +150$	$^\circ\text{C}$

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

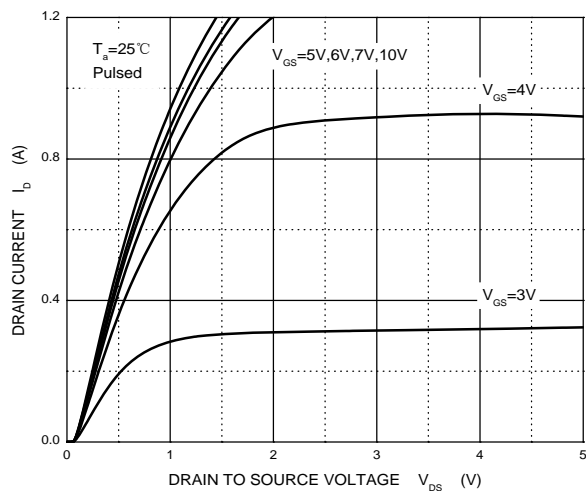
Parameter	Symb	Min	Typ	Max	Unit	Conditions
Static Characteristics						
Drain-Source breakdown voltage	V _{(BR)DSS}	60			V	V _{GS} =0V, I _D =250μA
Gate-threshold voltage (note 1)	V _{GS(}	1	1.3	2.5	V	V _{DS} = V _{GS} , I _D =1mA
Zero gate voltage drain current	I _{DSS}			1	μA	V _{DS} =48V, V _{GS} =0V
Gate-body leakage current	I _{GSS}			±10	μA	V _{DS} =0V, V _{GS} =±20V
				±200	nA	V _{DS} =0V, V _{GS} =±10V
				±100	nA	V _{DS} =0V, V _{GS} =±5V
Drain-source on-resistance (note 1)	R _{DS(ON)}		1.1	5.3	Ω	V _{GS} =4.5V, I _D =0.2A
			0.9	5	Ω	V _{GS} =10V, I _D =0.5A
Diode forward voltage (note 1)	V _{SD}			1.5	V	I _S =0.3A, V _{GS} =0V
Gate-Source Breakdown Voltage	BV _{GSO}	±21.5		±30	V	I _{GS} =±1mA (Open Drain)
Recovered charge	Q _r		30		nC	V _{GS} =0V, I _S =0.3A, V _R =25V, dI _S /dt=-100A/μS
Dynamic Characteristics						
Input capacitance	C _{iss}			40	pF	V _{DS} =10V, V _{GS} =0V, f=1MHz
Output capacitance	C _{oss}			30	pF	
Reverse transfer capacitance	C _{rss}			10	pF	
Switching Characteristics						
Turn-on delay time	t _{d(on)}		3		nS	V _{DD} =50V, V _{GS} =10V, R _G =50Ω, R _{GS} =50Ω, R _L =250Ω
Turn-off delay time	t _{d(off)}		15		nS	
Reverse recovery time	t _{rr}		26		nS	V _{GS} =0V, I _S =0.3A, V _R =25V, dI _S /dt=-100A/μS

Note:1. Pulse test ; Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

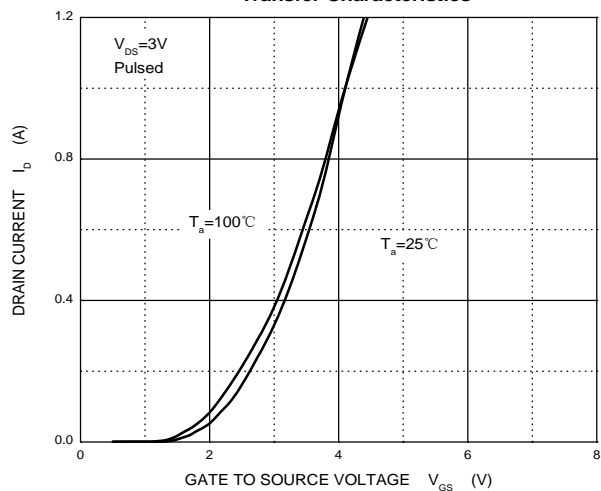
MOSFET (N-CHANNEL)

Typical Characteristics

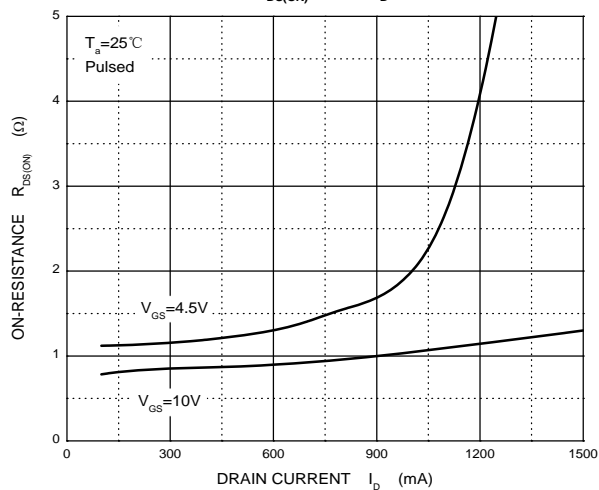
Output Characteristics



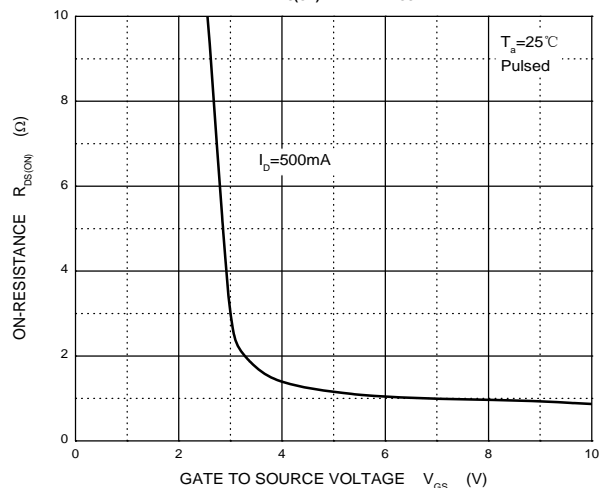
Transfer Characteristics



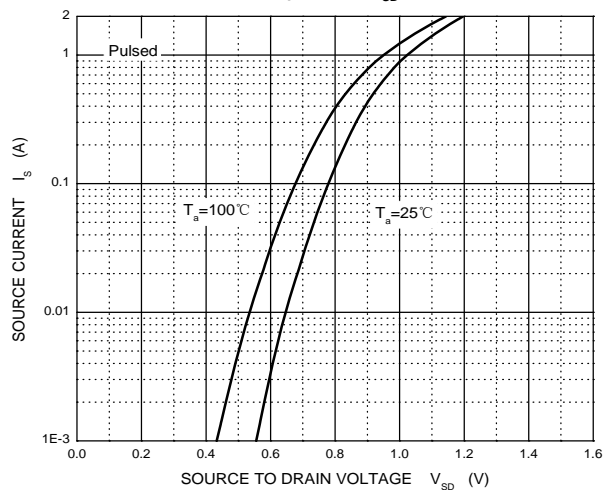
$R_{DS(ON)}$ — I_D



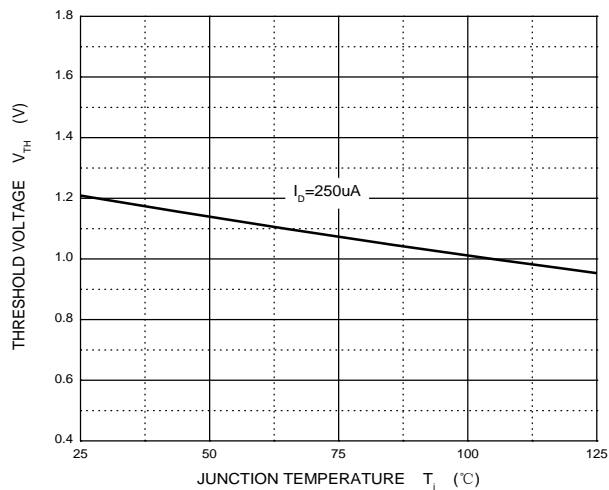
$R_{DS(ON)}$ — V_{GS}

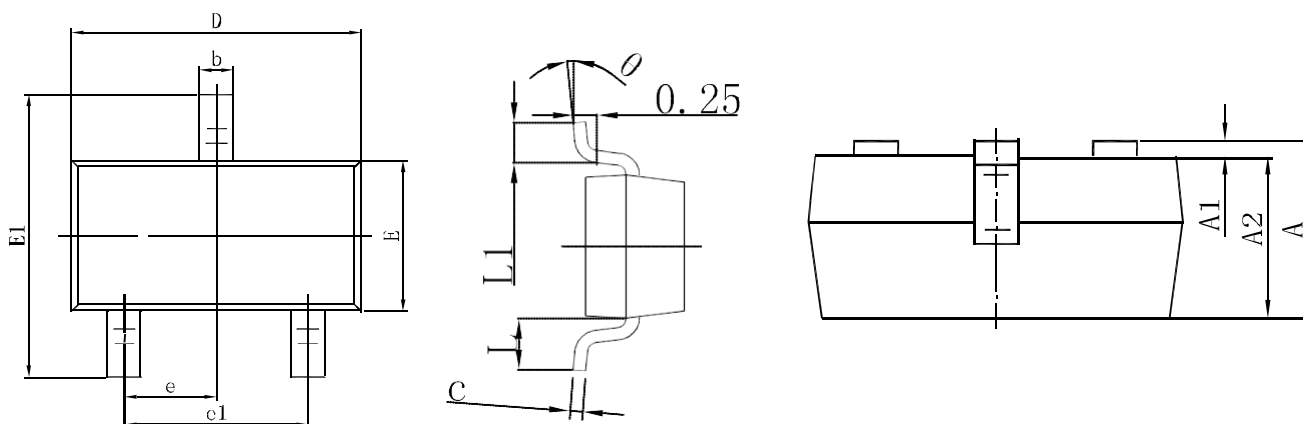


I_S — V_{SD}

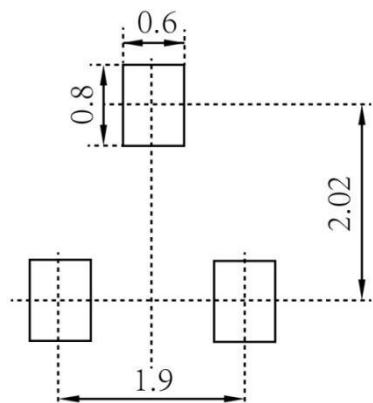


Threshold Voltage



MOSFET (N-CHANNEL)
SOT-23 Package Outline Dimensions


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°

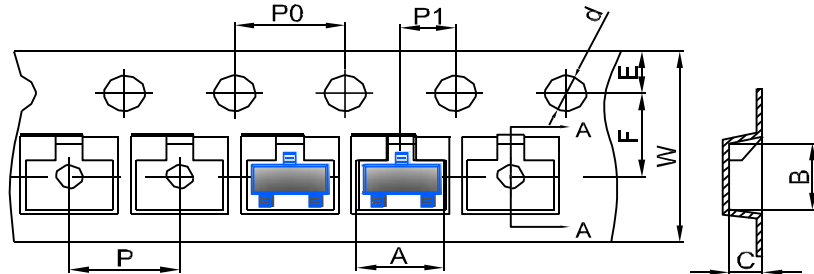
SOT-23 Suggested Pad Layout

Note:

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

MOSFET (N-CHANNEL)

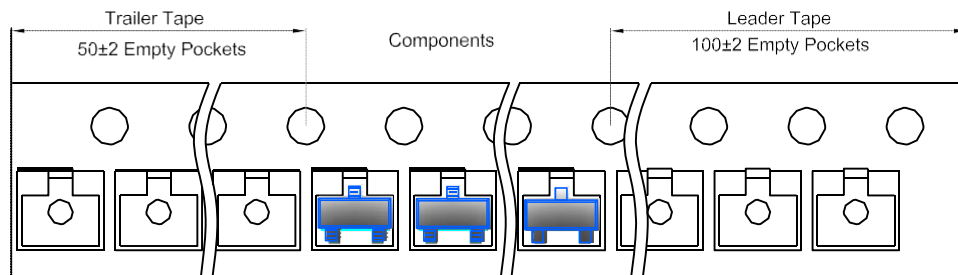
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

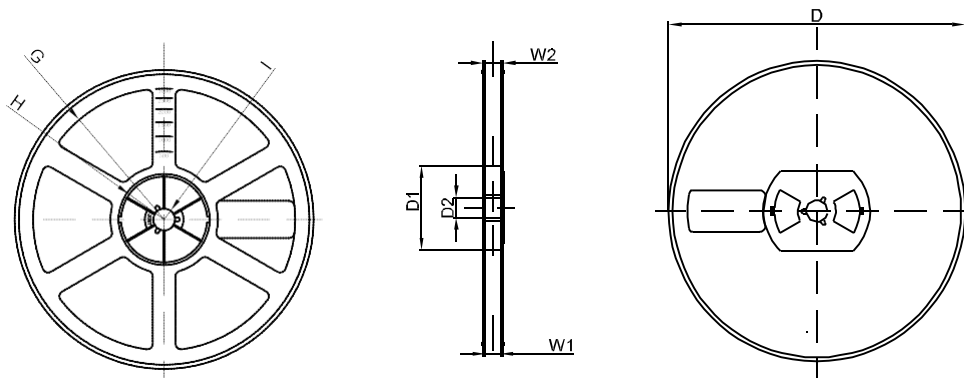


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1