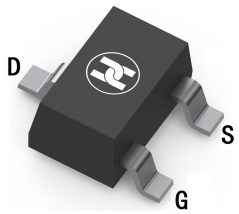
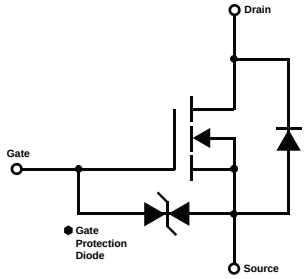
MOSFET (N-CHANNEL)



SOT-323



Equivalent circuit

FEATURES

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

MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.008 grams (approximate)
- Marking: 6C

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	±20V	V
Continuous drain current	I_D	300	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	°C/W
Junction And Storage temperature Range	T_J,T_{STG}	-65 ~+150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

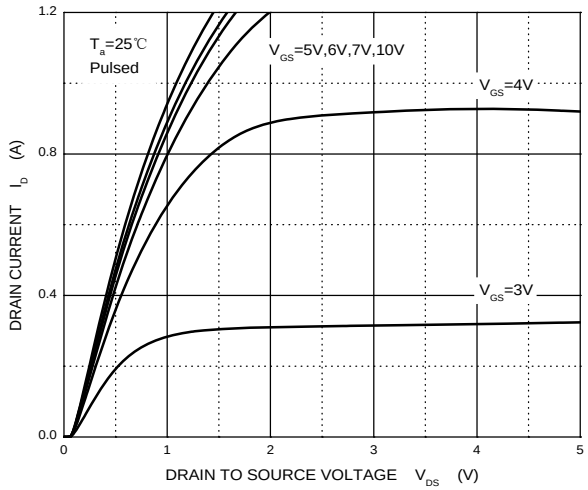
Parameter	Symb	Min	Typ	Max	Unit	Conditions
Static Characteristics						
Drain-Source breakdown voltage	$V_{(BR)DSS}$	60			V	V_{GS}=0V, I_D=250μA
Gate-threshold voltage (note 1)	$V_{GS(}$	0.82		1.47	V	V_{DS}= V_{GS}, I_D=250uA
Zero gate voltage drain current	I_{DSS}			400	μA	V_{DS}=55V, V_{GS}=0V
Gate-body leakage current	I_{GSS}			±6	μA	V_{DS}=0V, V_{GS}=±20V
Drain-source on-resistance (note 1)	$R_{DS(ON)}$			2.25	Ω	V_{GS}=4.5V, I_D=0.2A
				1.44	Ω	V_{GS}=10V, I_D=0.5A
Diode forward voltage (note 1)	V_{SD}			1.35	V	I_S=0.5A, V_{GS}=0V
Gate-Source Breakdown Voltage	BV_{GSO}	±20		±30	V	Igs=±1mA (Open Drain)
Recovered charge	Q_r		30		nC	V_{GS}=0V,I_S=0.3A,V_R=25V, dIs/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, dIs/dt=-100A/μS

Note:1. Pulse test ; Pulse width ≤300μs, Duty cycle ≤ 2% .

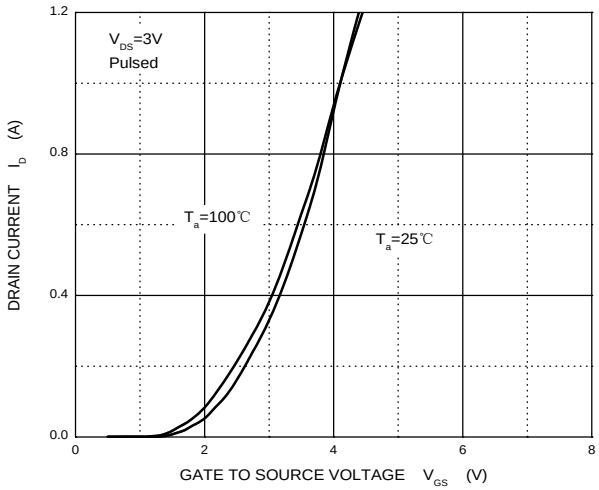
MOSFET (N-CHANNEL)

Typical Characteristics

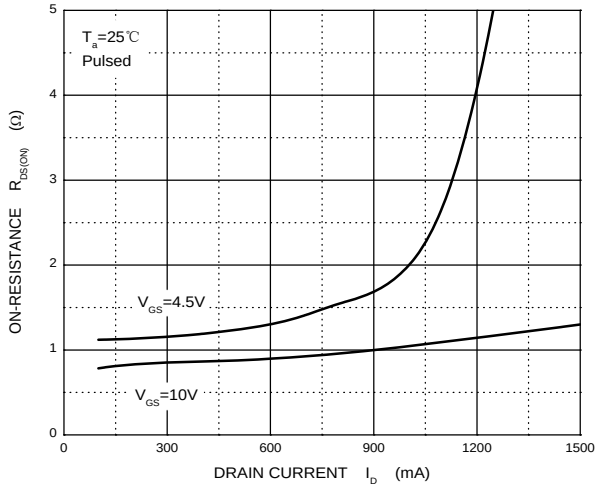
Output Characteristics



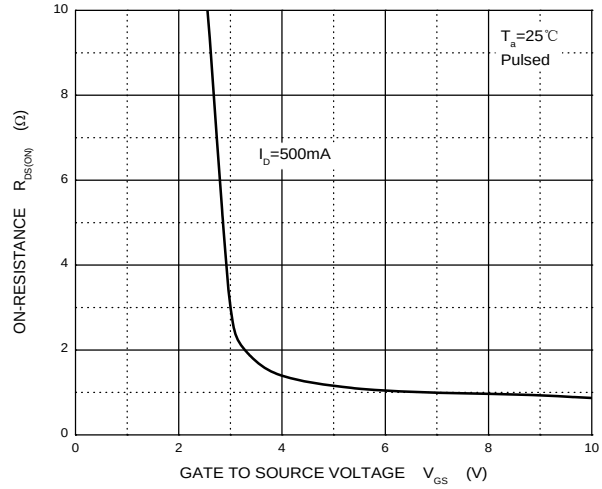
Transfer Characteristics



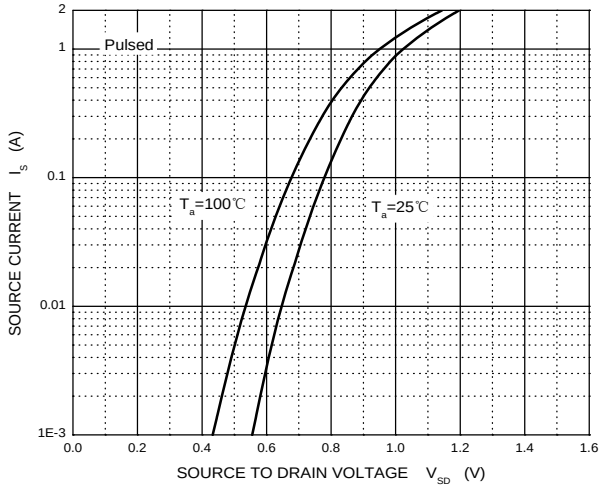
$R_{DS(ON)}$ —— I_D



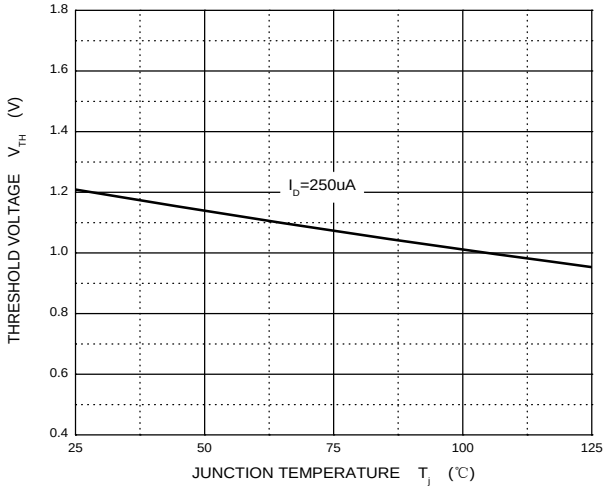
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

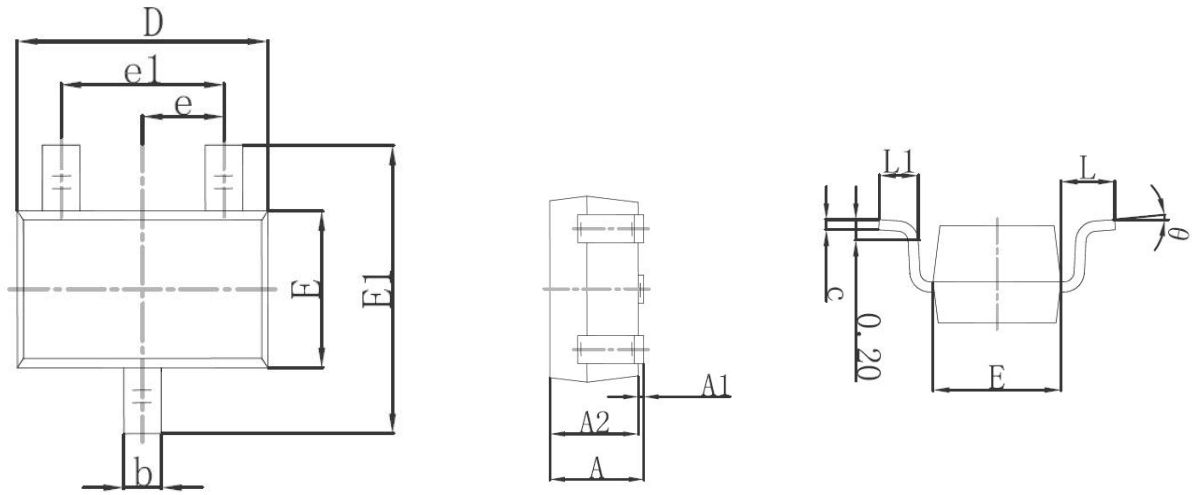


Threshold Voltage



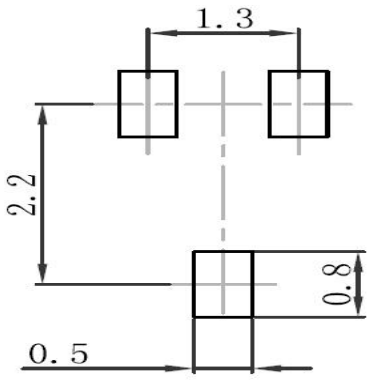
MOSFET (N-CHANNEL)

SOT-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-323 Suggested Pad Layout



Note:

1.Controlling dimension: in millimeters

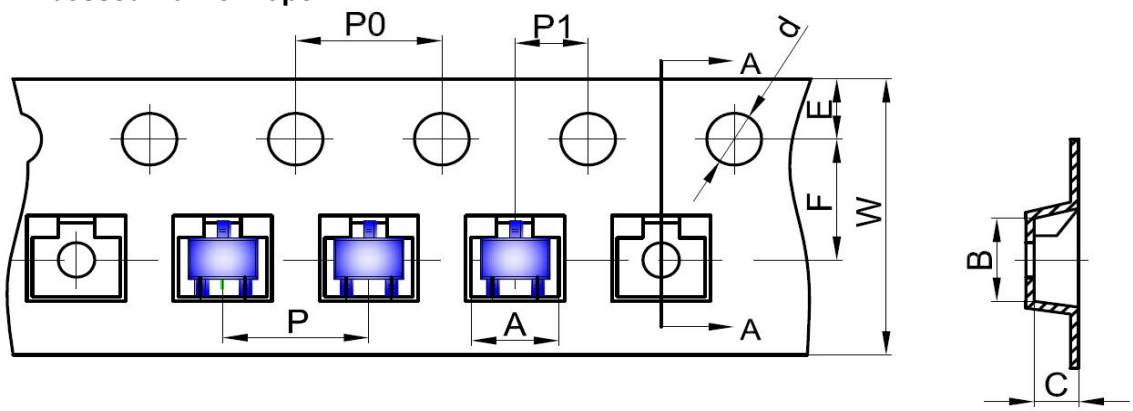
2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

MOSFET (N-CHANNEL)

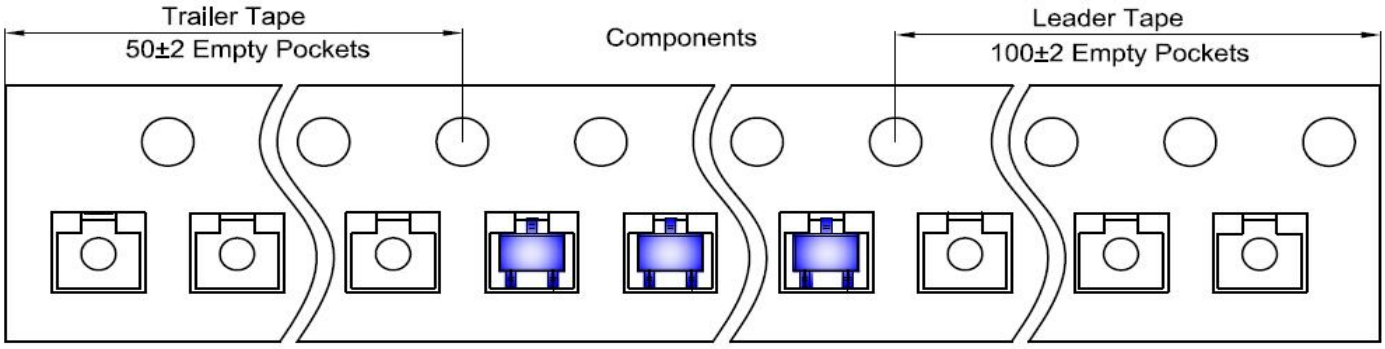
SOT-323 Tape and Reel

SOT-323 Embossed Carrier Tape

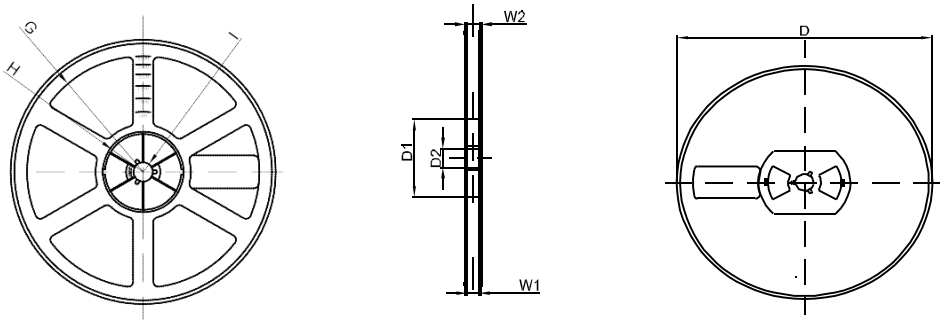


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-323 Tape Leader and Trailer



SOT-323 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