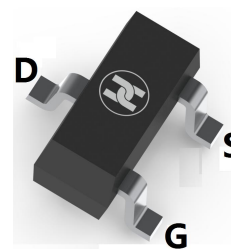


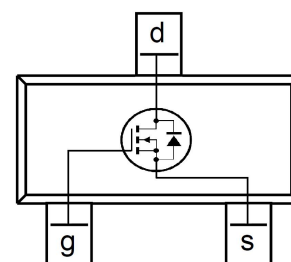
N-CHANNEL MOSFET

FEATURES

- Low On-Resistance
- Low Gate Threshold Voltage
- Fast Switching Speed
- Low Input / Output Leakage
- Sub-miniature surface mount package



SOT-23



MECHANICAL DATA

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

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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	50	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current	I_D	0.22	A
Power dissipation	P_D	225	mW
Thermal resistance from Junction to ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

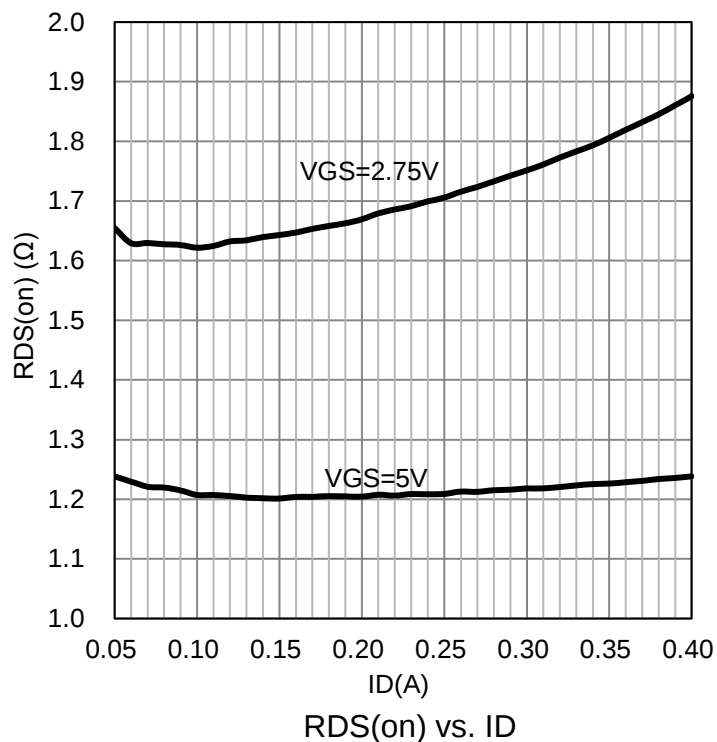
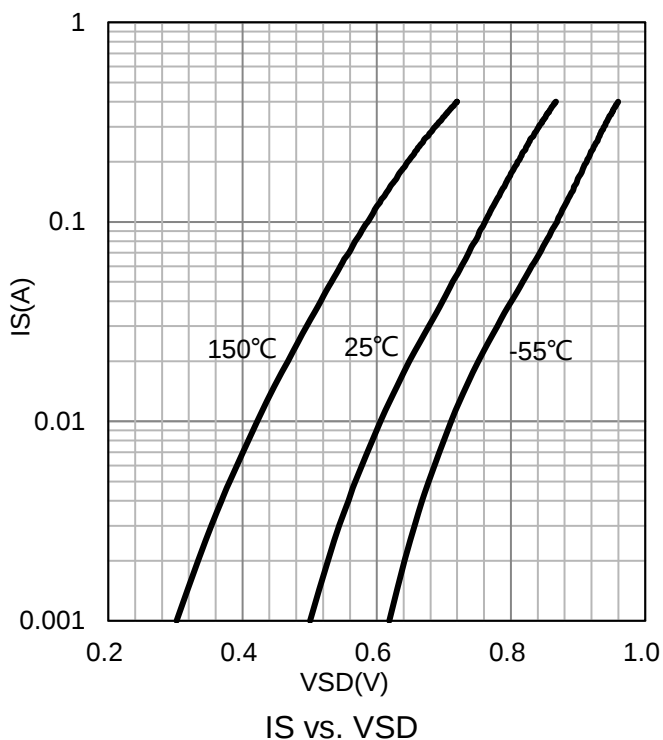
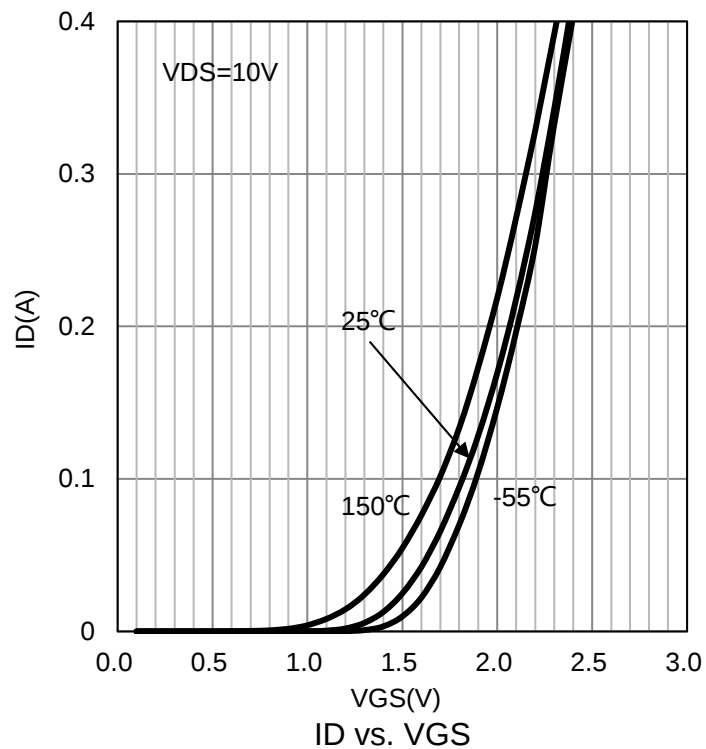
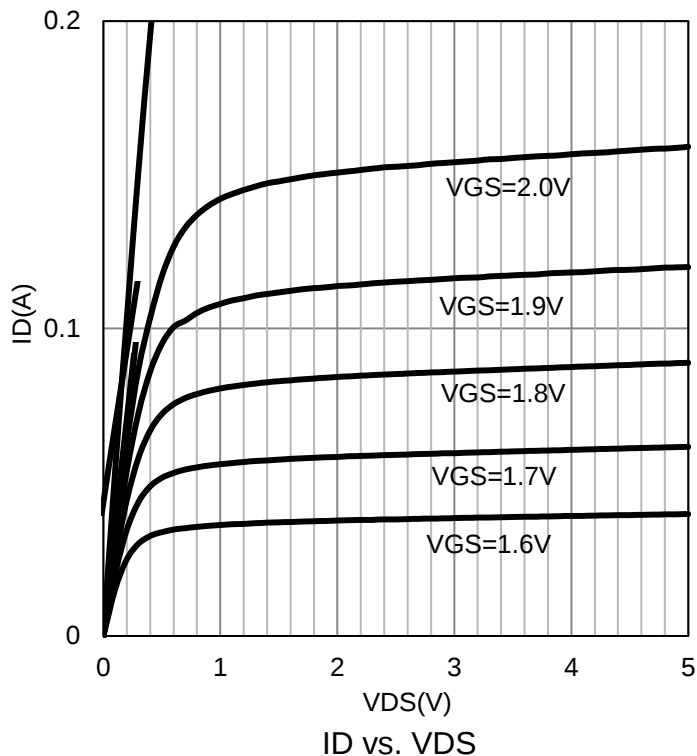
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Drain-Source breakdown voltage	$V_{(BR)DSS}$	50			V	$V_{GS}=0V, I_D=250\mu A$
Zero gate voltage drain current	I_{DSS}			0.1	μA	$V_{DS}=25V, V_{GS}=0V$
Gate-body leakage current	I_{GSS}			± 10	μA	$V_{DS}=0V, V_{GS}=\pm 20V$
Gate-threshold voltage	$V_{GS(th)}$	0.5		1.5	V	$V_{DS}=V_{GS}, I_D=1mA$
Drain-source on-resistance	$R_{DS(on)}$			2.50	Ω	$V_{GS}=1.8V, I_D=0.05A$
				10	Ω	$V_{GS}=2.5V, I_D=200mA$
				3.5	Ω	$V_{GS}=5V, I_D=200mA$
Forward trans-conductance	g_{FS}	0.1			S	$V_{DS}=25V, I_D=0.2A$
Diode forward voltage (note 1)	V_{SD}			1.2	V	$I_S=0.115A, V_{GS}=0V$
Input capacitance(note 1)	C_{iss}		22.8		pF	$V_{DS}=25V, V_{GS}=0V, f=1MHz$
Output capacitance(note 1)	C_{oss}		3.5		pF	
Reverse transfer capacitance(note 1)	C_{rss}		2.9		pF	
Gate resistance(note 1)	R_G		281		Ω	$V_{DS}=5V, V_{GS}=10mV, f=1MHz$
Turn-on delay time(note 1)	$t_{d(on)}$		3.8		nS	$V_{DD}=30V, V_{GS}=10V, R_{GEN}=25\Omega, I_D=500mA$
Turn-on rise time(note 1)	t_r		5		nS	
Turn-off delay time(note 1)	$t_{d(off)}$		19		nS	
Turn-off fall time(note 1)	t_f		35		nS	

Note:1. These parameters have no way to verify..

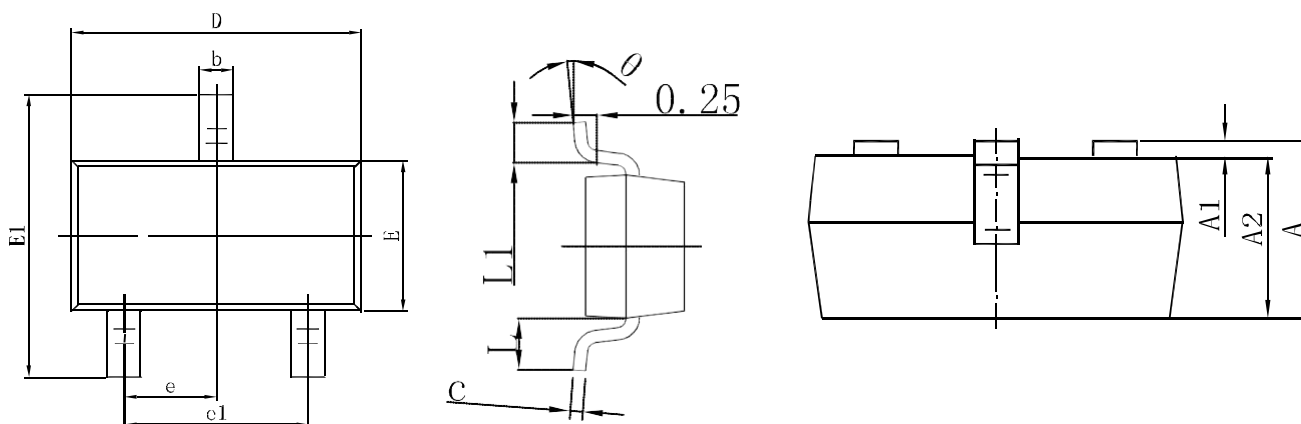
N-CHANNEL MOSFET

ELECTRICAL CHARACTERISTICS CURVES



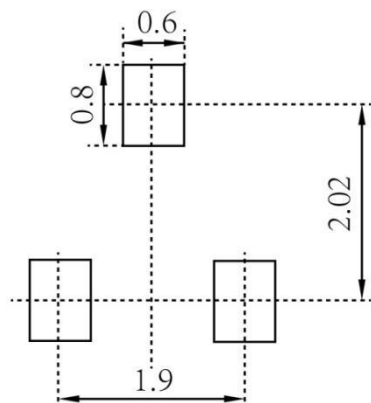
N-CHANNEL MOSFET

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



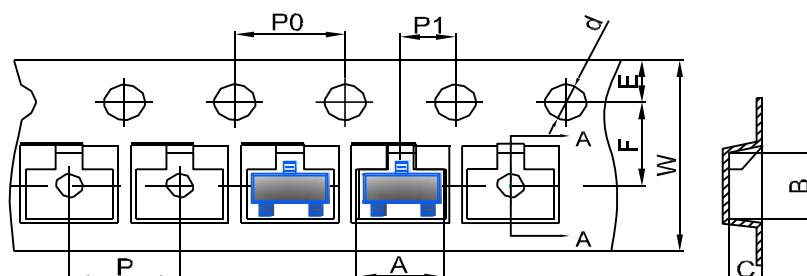
Note:

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

N-CHANNEL MOSFET

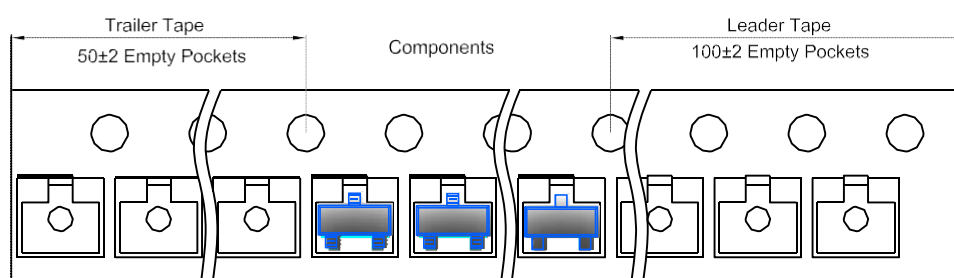
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

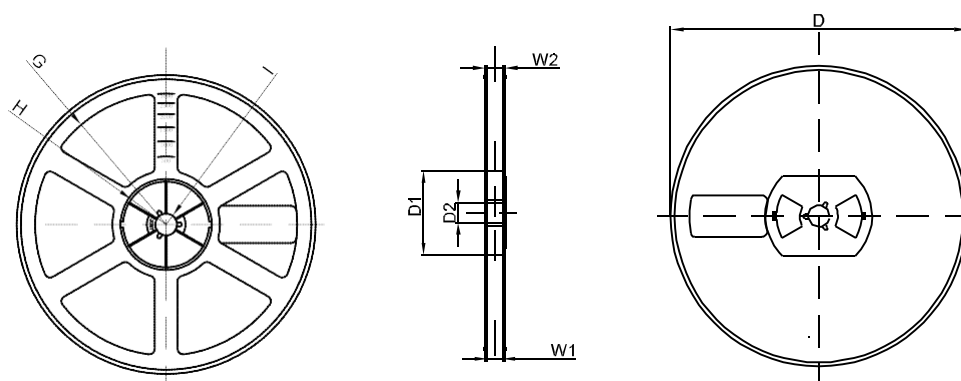


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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