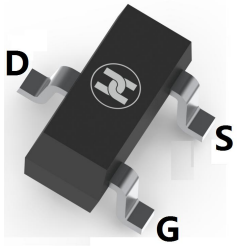
N-CHANNEL MOSFET



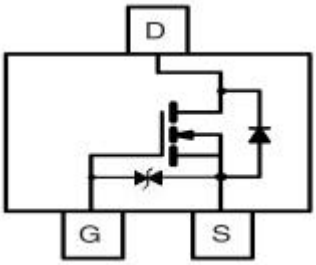
SOT-23

FEATURES

- Low On-Resistance
- Low Gate Threshold Voltage
- Fast Switching Speed
- Low Input / Output Leakage
- Sub-miniature surface mount package
- ESD Protected up to 2KV

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°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	50	V
Gate-source voltage	V_{GS}	±12	V
Continuous drain current	I_D	0.3	A
Power dissipation	P_D	0.35	W
Thermal resistance from Junction to ambient	$R_{\theta JA}$	357	°C/W
Junction temperature	T_J	150	°C
Storage temperature	T_{STG}	-55 ~+150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°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=250μA
Zero gate voltage drain current	I_{DSS}			1	μA	V_{DS}=50V, V_{GS}=0V
Gate-body leakage current	I_{GSS}			±10	μA	V_{DS}=0V, V_{GS}=±12V
Gate-threshold voltage	$V_{GS(th)}$	0.5		1.2	V	V_{DS}=V_{GS}, I_D=250μA
Drain-source on-resistance	$R_{DS(ON)}$			2.5	Ω	V_{GS}=4.5V, I_D=0.3A
				4.5	Ω	V_{GS}=2.5V, I_D=0. 2A
				5.0	Ω	V_{GS}=1.8V, I_D=0.1 A
Forward trans-conductance	g_{FS}	0.2			S	V_{DS}=10V, 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}		58		pF	V_{DS}=25V, V_{GS}=0V, f=1MHz
Output capacitance(note 1)	C_{oss}		9.75		pF	
Reverse transfer capacitance(note 1)	C_{rss}		5.2		pF	
Gate resistance(note 1)	R_G		281		Ω	V_{DS}=5V, V_{GS}=10mV, f=1MHz
Turn-on delay time(note 1)	$t_{d(on)}$			5	nS	V_{DD}=30V, V_{GS}=10V, R_{GEN}=6Ω,I_D=0.29A
Turn-on rise time(note 1)	t_r			5	nS	
Turn-off delay time(note 1)	$t_{d(off)}$			60	nS	
Turn-off fall time(note 1)	t_f			35	nS	

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

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Typical Characteristics

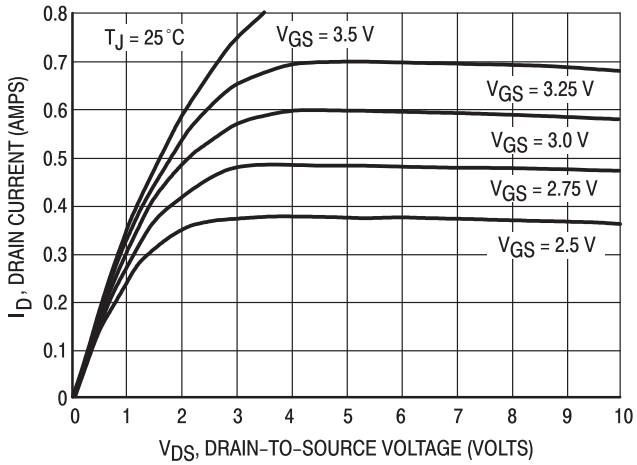

Fig.1 On–Region Characteristics

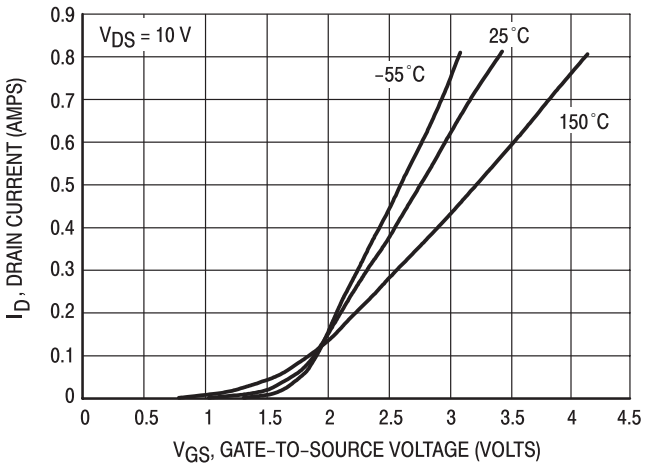

Fig.2 Transfer Characteristics

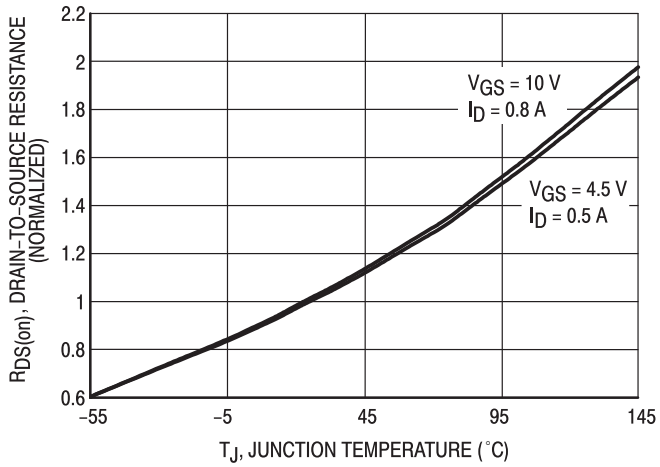

Fig.3 On–Resistance Variation with Temperature

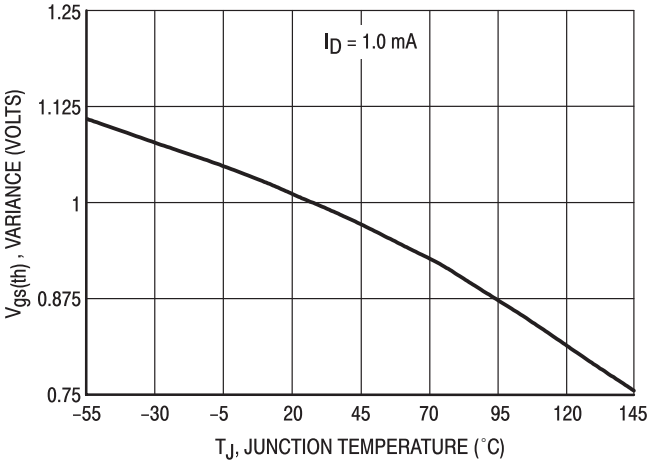

Fig.4 Threshold Voltage Variation with Temperature

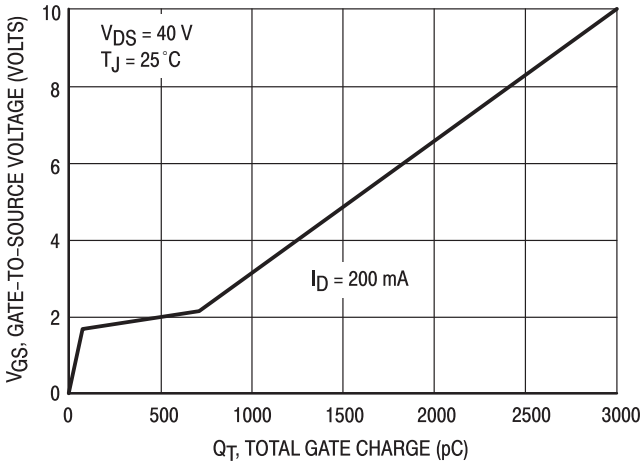

Fig.5 Gate Charge

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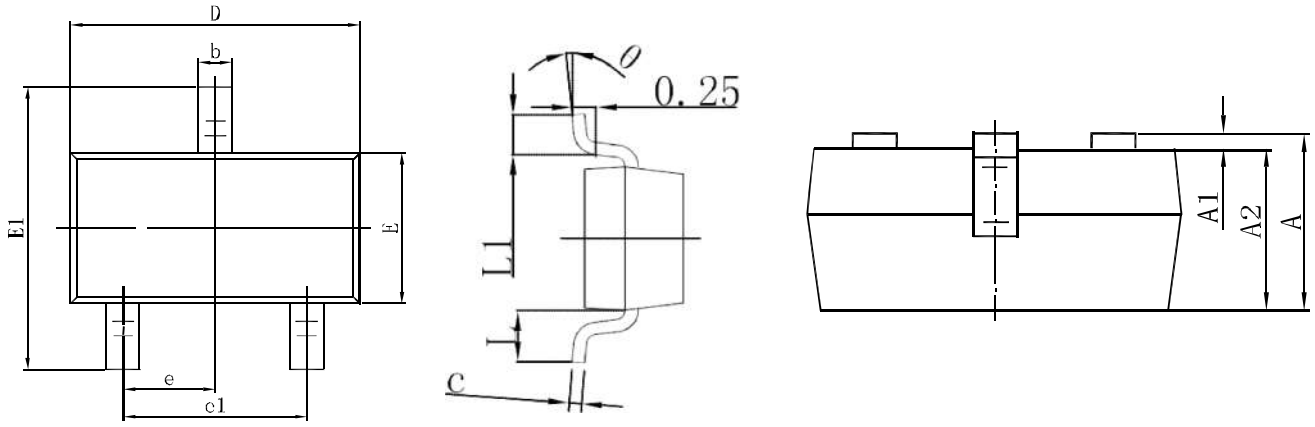
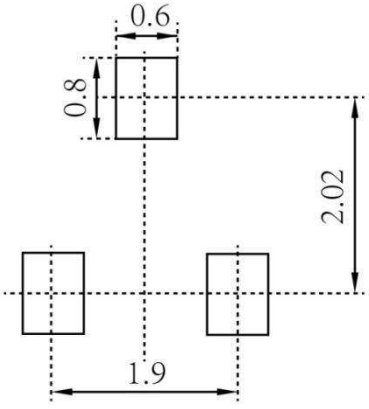
SOT-23 Package Outline Dimensions



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: ±0.05mm

3.The pad layout is for reference purposes only

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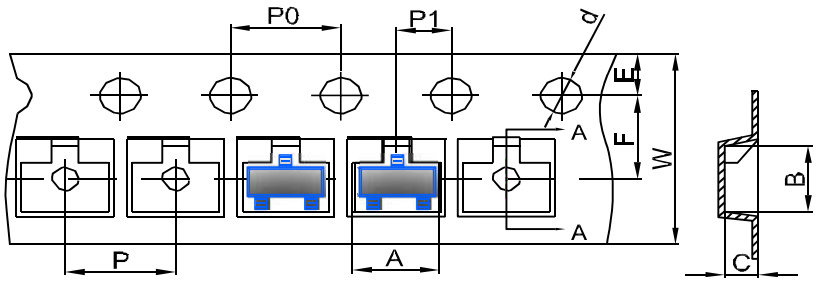
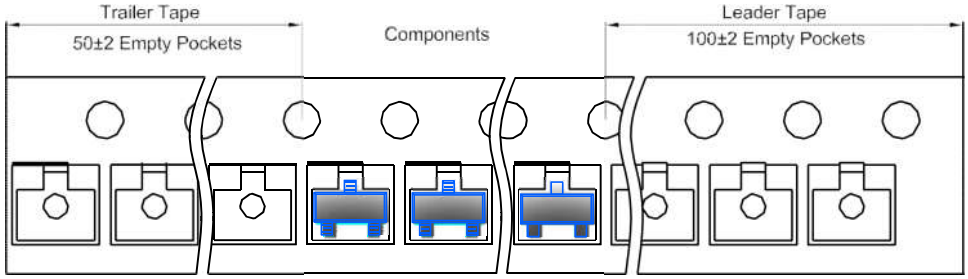
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

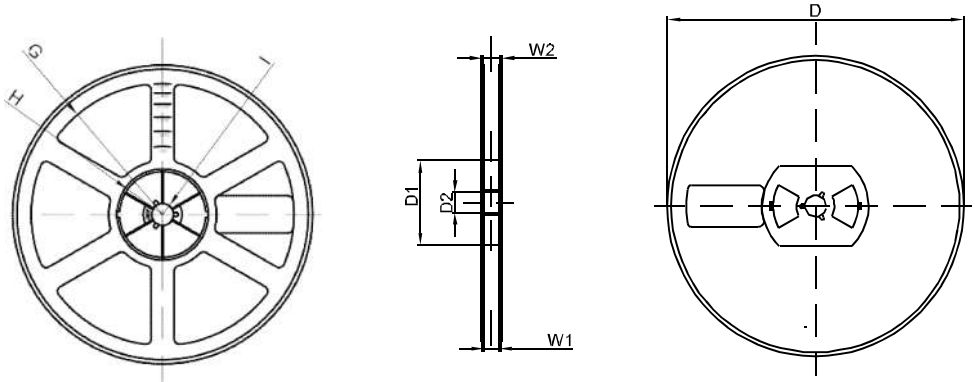


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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