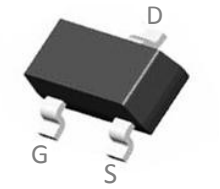
Description：

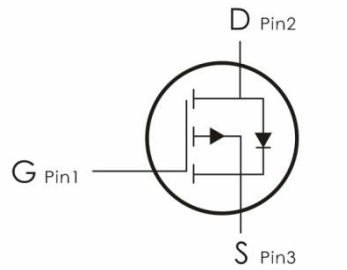
This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features：

1) V_{DS}=-30V,I_D=-4.2A,$R_{DS(ON)}$<50mΩ @V_{GS}=-10V（Typ：43 mΩ）
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.
6) MSL3



Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
DO3401B	A19T	SOT-23	3000pcs/Reel

Absolute Maximum Ratings： (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±12	
I_D	Continuous Drain Current-T_A=25℃[1]	-4.2	A
	Continuous Drain Current-T_A=100℃[1]	-3	
I_{DM}	Pulsed Drain Current[2]	-16.8	
P_D	Power Dissipation	1.2	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	104	℃/W

Electrical Characteristics: (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=-250μA	-30	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V,V_{DS}=-30V	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±12V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=-250μA	-0.6	---	-1.2	V
$R_{DS(ON)}$	Drain-Source On-State Resistance[3]	V_{GS}=-10V,I_D=-4.3A	---	43	50	mΩ
		V_{GS}=-4.5V,I_D=-3.5A	---	47	61	
		V_{GS}=-2.5V,I_D=-2.4A	---	56	72	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-12V, V_{GS}=0V, f=1MHz	---	670	---	pF
C_{oss}	Output Capacitance		---	275	---	
C_{rss}	Reverse Transfer Capacitance		---	100	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-12V, I_D=-4A V_{GEN}=-10V, R_G=3.3Ω	---	9	---	ns
t_r	Rise Time		---	15	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	23	---	ns
t_f	Fall Time		---	21	---	ns
Q_g	Total Gate Charge	V_{GS}=-4.5V, V_{DS}=-20V, I_D=-4A	---	8.5	---	nC
Q_{gs}	Gate-Source Charge		---	2.8	---	nC
Q_{gd}	Gate-Drain Charge		---	3	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode forward voltage	I_S=-1A,V_{GS}=0V	---	-0.7	-1	V
I_S	Continuous Drain Curren	VD=VG=0V	---	---	-4.2	A
I_{SM}	Pulsed Drain Current		---	---	-16.8	A

Notes:

1. Computed continuous current assumes the condition of $T_{j,Max}$ while the actual continuous current depends on the thermal & electro-mechanical application board design
2 Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics: (T_A=25℃ unless otherwise noted)

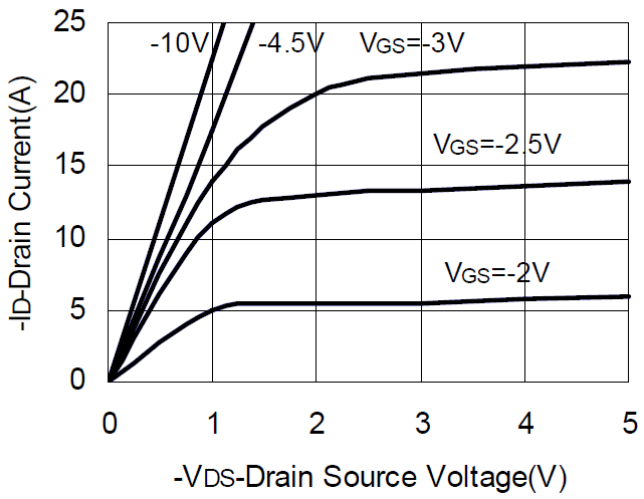


Fig1. Output Characteristics

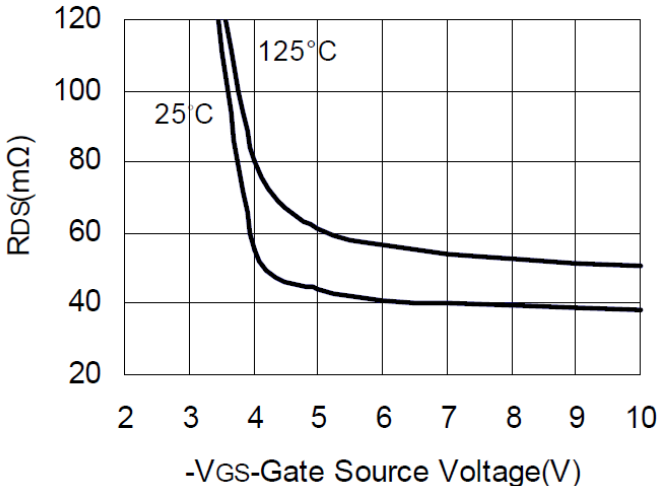


Fig2. Drain-Source On Resistance

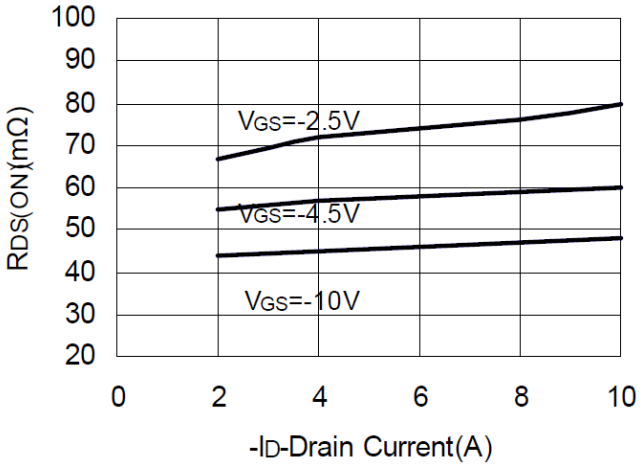


Fig3. Drain Source On Resistance

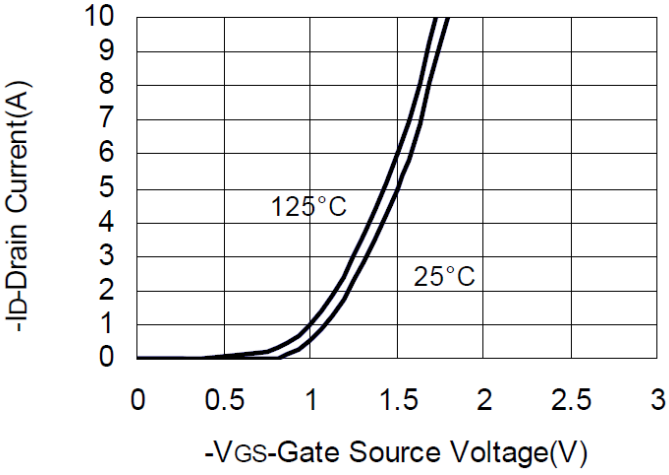


Fig4. Transfer Characteristics

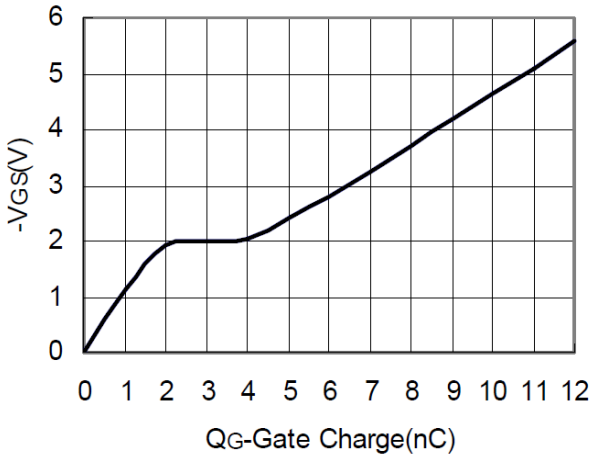


Fig5. Gate Charge

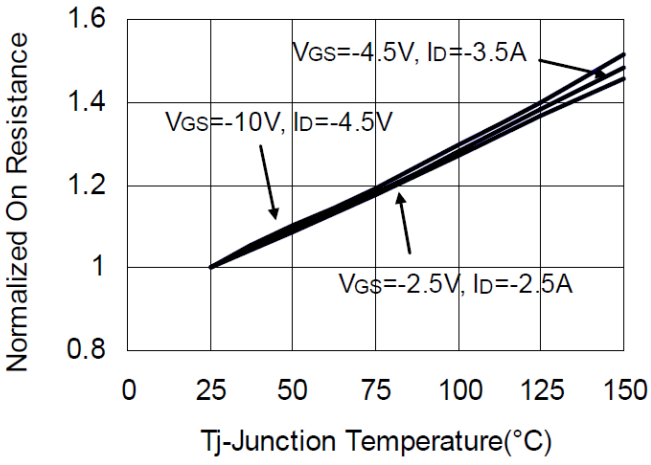


Fig6. Drain Source Resistance

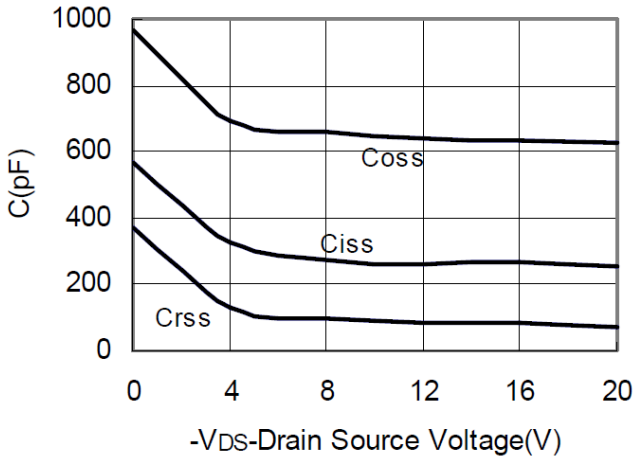


Fig7. Capacitance

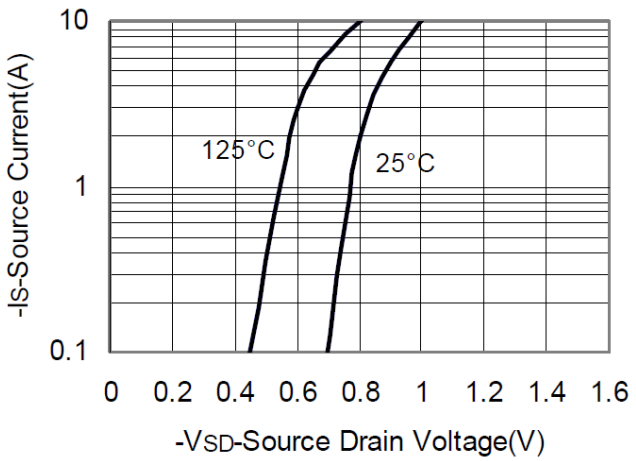


Fig8. Source Drain Diode Forward

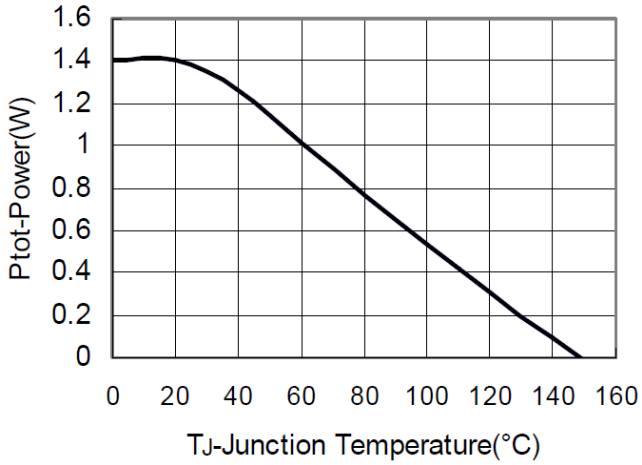


Fig9. Power Dissipation

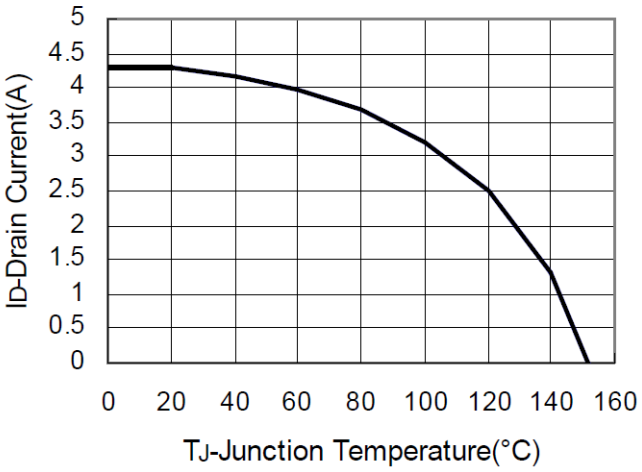


Fig10. Drain Current

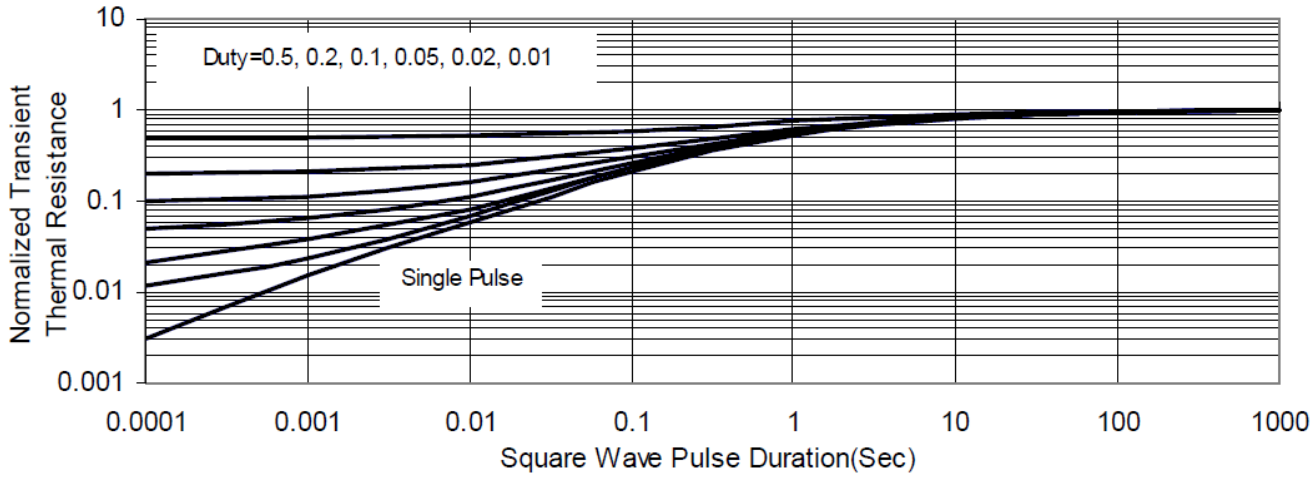
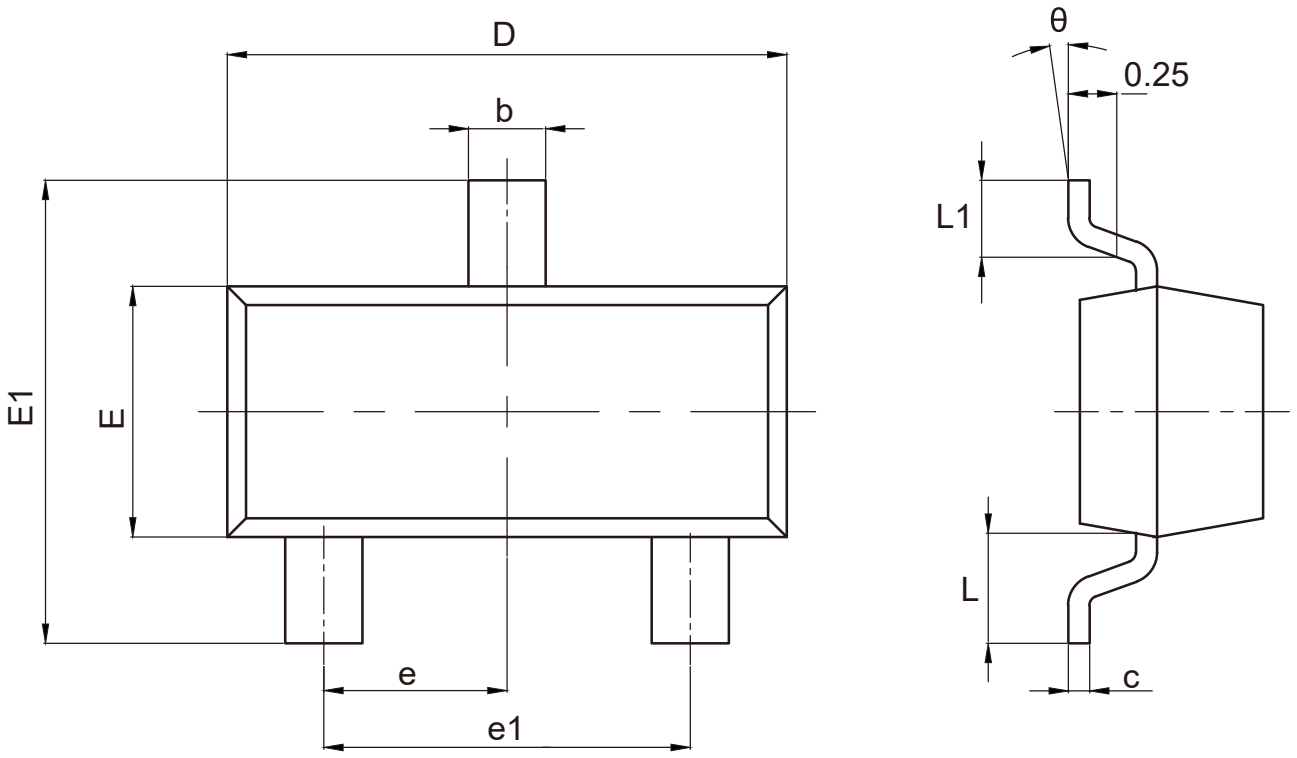
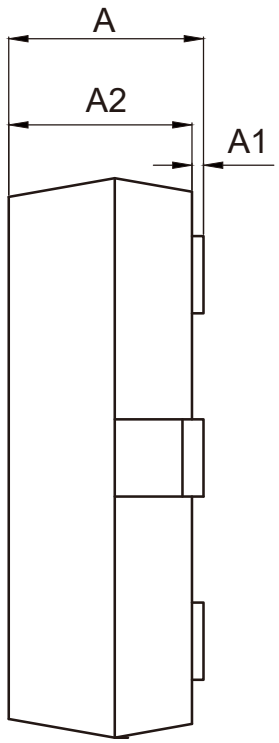


Fig11. Thermal Transient Impedance

SOT-23 Package Outline Data



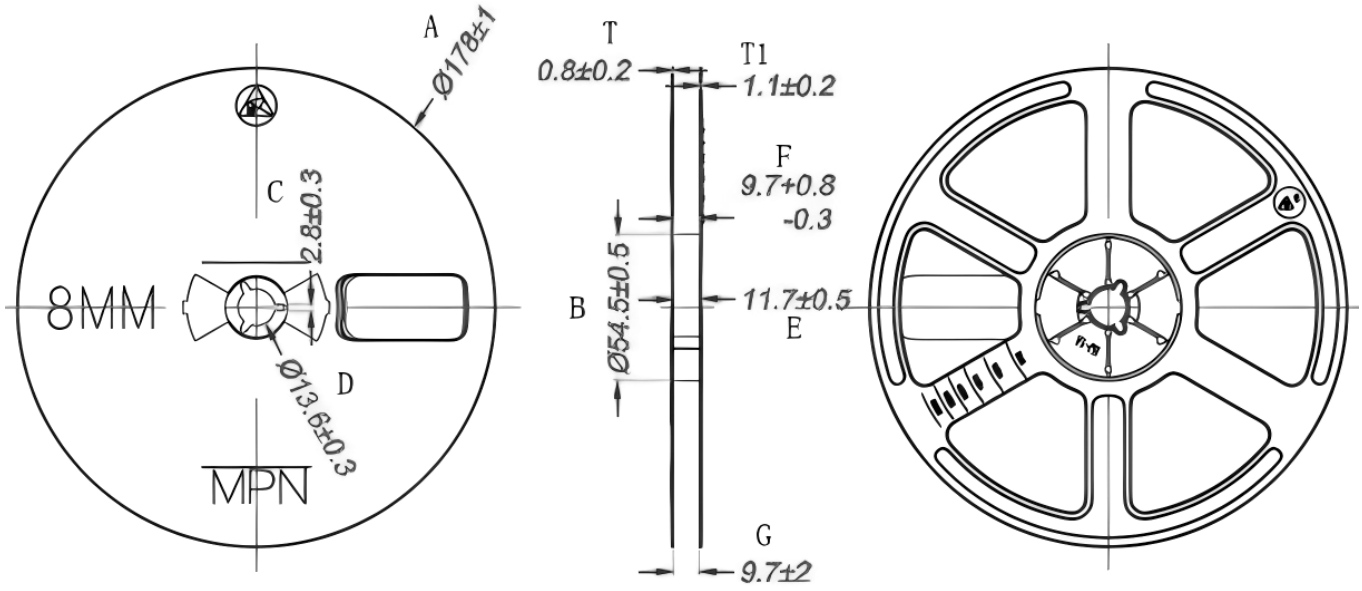


COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	0.900	--	1.150
A1	0.000	--	0.100
A2	0.900	--	1.050
c	0.100	--	0.200
b	0.300	0.400	0.500
D	2.800	2.900	3.000
E	1.200	--	1.400
E1	2.250	--	2.550
e	0.950TYP		
e1	1.800	1.900	2.000
L	0.550REF		
L1	0.300	0.400	0.500
θ	0°	--	8°

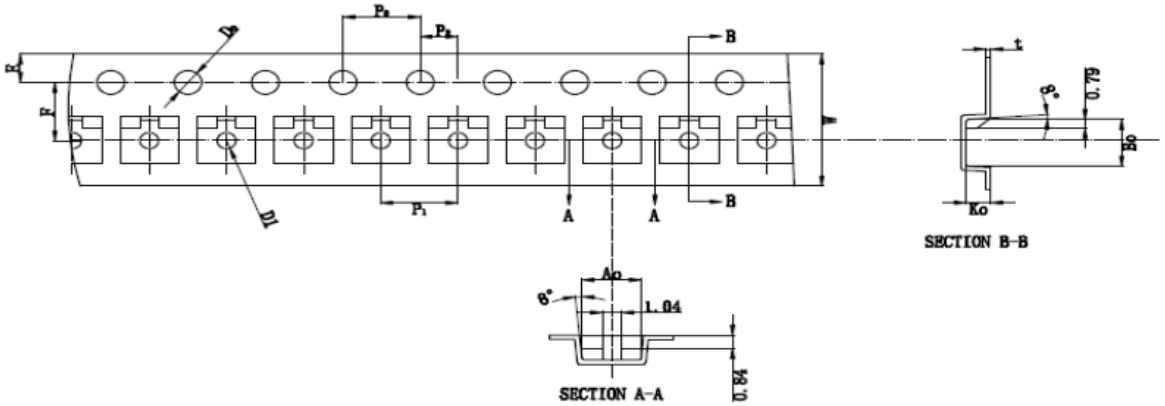
Unit:mm

Tape & Reel Information

Dimensions in mm

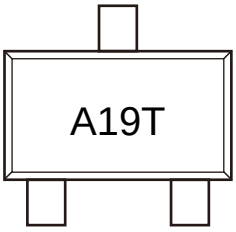


PKG TYPE	W	P	E	F	D	D1	Po	Po10	P2	A0	B0	K0	T
SOT-23	8.00	4.00	1.75	3.50	1.55	1.00	4.00	40.00	2.00	3.17	2.77	1.28	0.20
Tolerance	+0.3/-0.1	±0.1	±0.1	±0.05	±0.1	±0.1	±0.1	±0.2	±0.05	±0.1	±0.1	±0.1	±0.03



Pulling direction

Marking Information：



Previous Version

Version	Date	Subjects (major changes since last revision)
2.1	2025-10-02	Release of final version

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