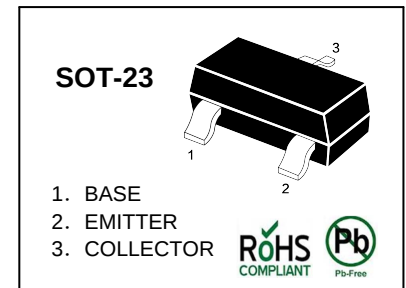
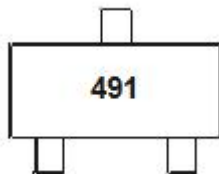


NPN Silicon Epitaxial Planar Transistor

Marking Information;



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7	V
Continuous Collector Current	I_C	1	A
Peak Pulse Current	I_{CM}	2	A
Base Current	I_B	200	mA

Thermal Characteristics($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	500	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	250	$^\circ\text{C/W}$
Thermal Resistance, Junction to Lead (Note 6)	$R_{\theta JL}$	197	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

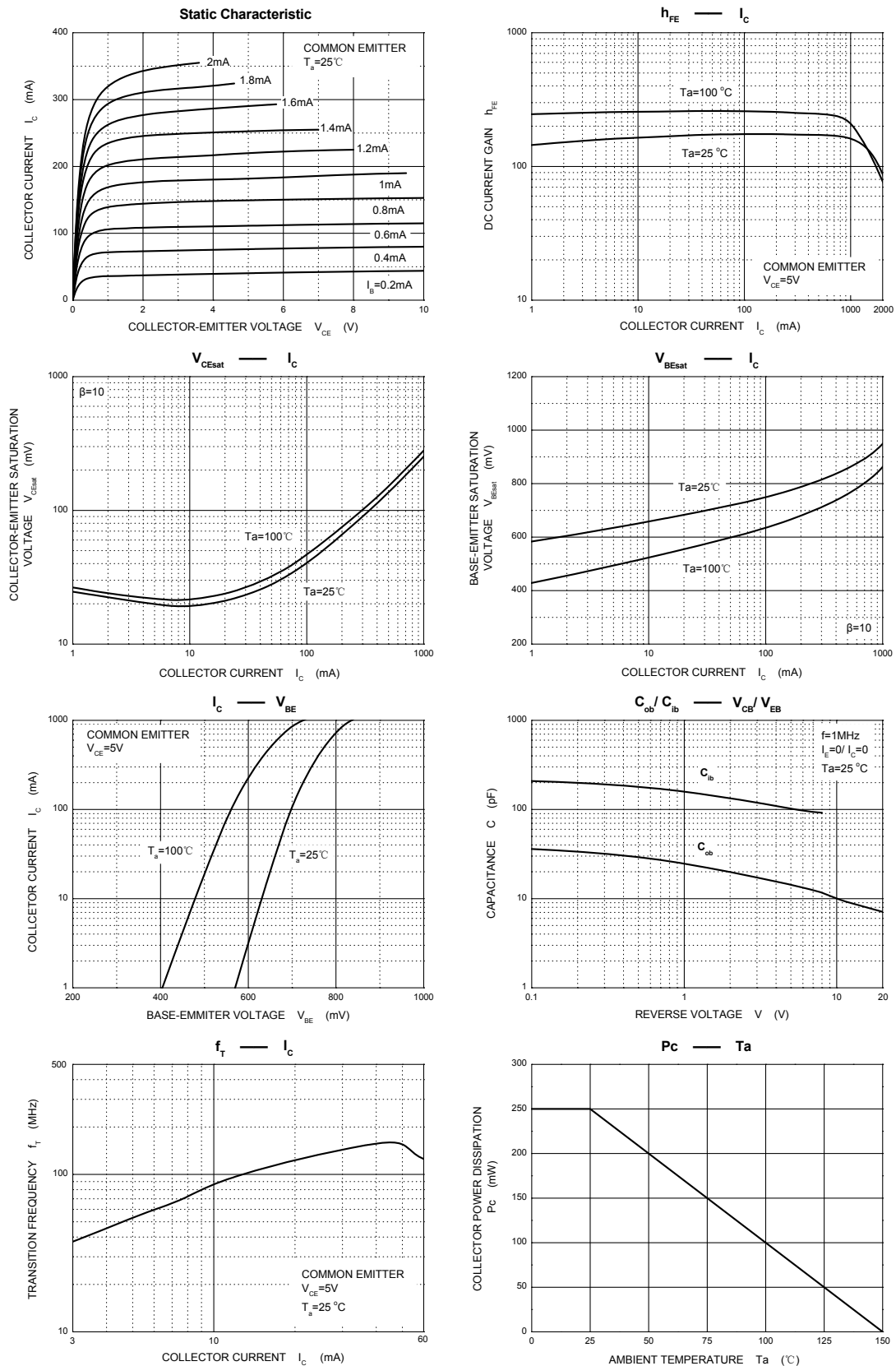
ESD Ratings

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Characteristics at $T_a = 25^\circ\text{C}$

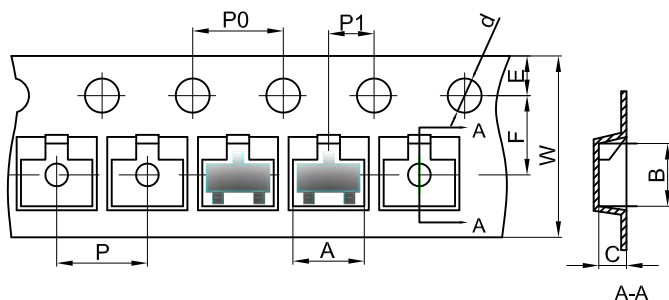
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	80	—	—	V	$I_C = 100\mu\text{A}$
Collector-Emitter Breakdown Voltage (Note 8)	BV_{CEO}	60	—	—	V	$I_C = 10\text{mA}$
Emitter-Base Breakdown Voltage	BV_{EBO}	7	8.1	—	V	$I_E = 100\mu\text{A}$
Collector Cutoff Current	I_{CBO}	—	<1	100	nA	$V_{CB} = 60\text{V}$
Emitter Cutoff Current	I_{EBO}	—	<1	100	nA	$V_{EB} = 5.6\text{V}$
Collector Emitter Cutoff Current	I_{CES}	—	<1	100	nA	$V_{CE} = 60\text{V}, V_{CES} = 60\text{V}$
Static Forward Current Transfer Ratio (Note 8)	h_{FE}	100	140	—	—	$I_C = 1\text{mA}, V_{CE} = 5\text{V}$
		100	150	300		$I_C = 500\text{mA}, V_{CE} = 5\text{V}$
		80	120	—		$I_C = 1\text{A}, V_{CE} = 5\text{V}$
		30	40	—		$I_C = 2\text{A}, V_{CE} = 5\text{V}$
Collector-Emitter Saturation Voltage (Note 8)	$V_{CE(sat)}$	—	100	150	mV	$I_C = 500\text{mA}, I_B = 50\text{mA}$
		—	160	250		$I_C = 1\text{A}, I_B = 100\text{mA}$
Base-Emitter Turn-On Voltage(Note 8)	$V_{BE(on)}$	—	830	1000	mV	$I_C = 1\text{A}, V_{CE} = 5\text{V}$
Base-Emitter Saturation Voltage(Note 8)	$V_{BE(sat)}$	—	965	1100	mV	$I_C = 1\text{A}, I_B = 100\text{mA}$
Output Capacitance	C_{obo}	—	—	10	pF	$V_{CB} = 10\text{V}, f = 1\text{MHz}$
Transition Frequency	f_T	150	—	—	MHz	$V_{CE} = 10\text{V}, I_C = 50\text{mA}, f = 100\text{MHz}$

Typical Characteristics



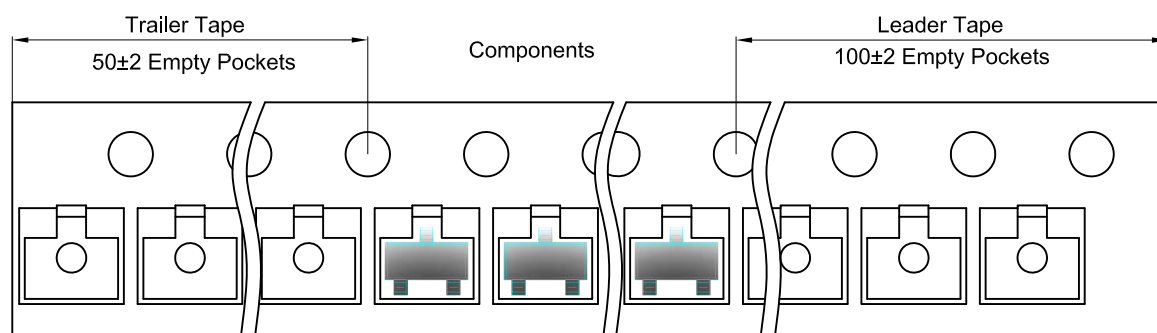
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

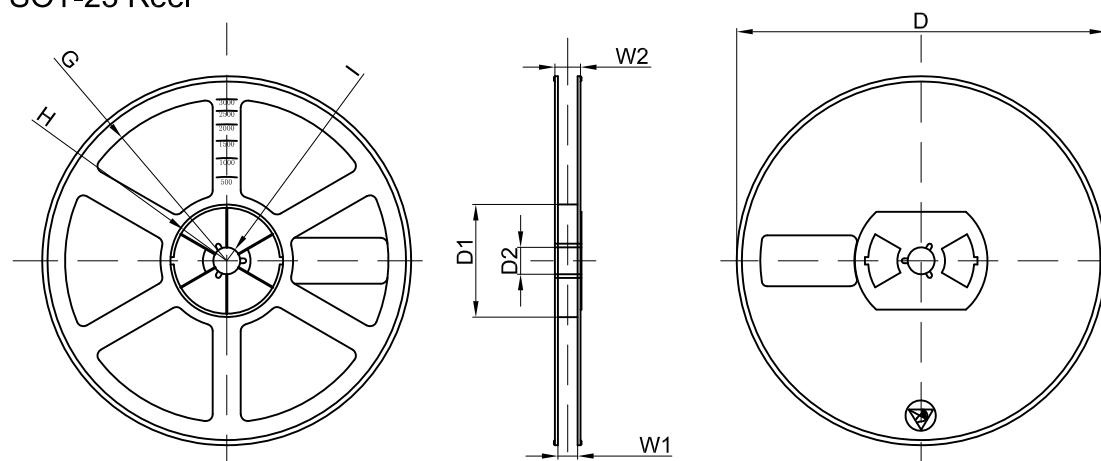


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer

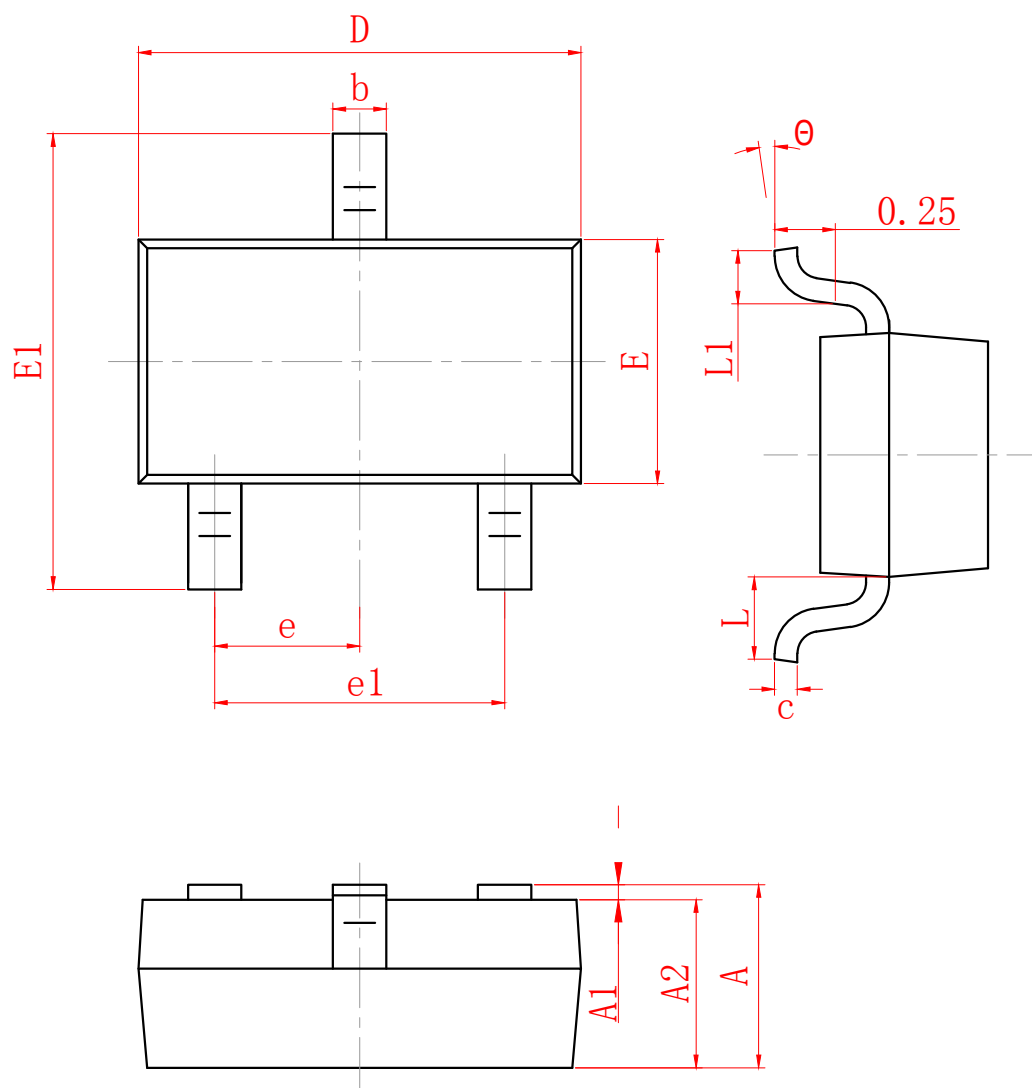


SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950 TYP	
e1	1.800	2.000
L	0.550 REF	
L1	0.300	0.500
θ	0°	8°

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