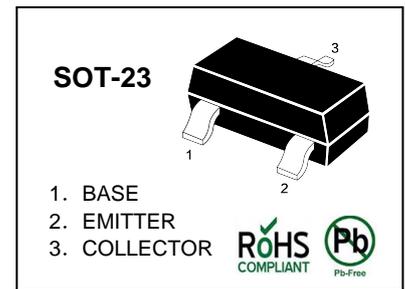


## PNP Silicon Epitaxial Planar Transistor



Marking:591A

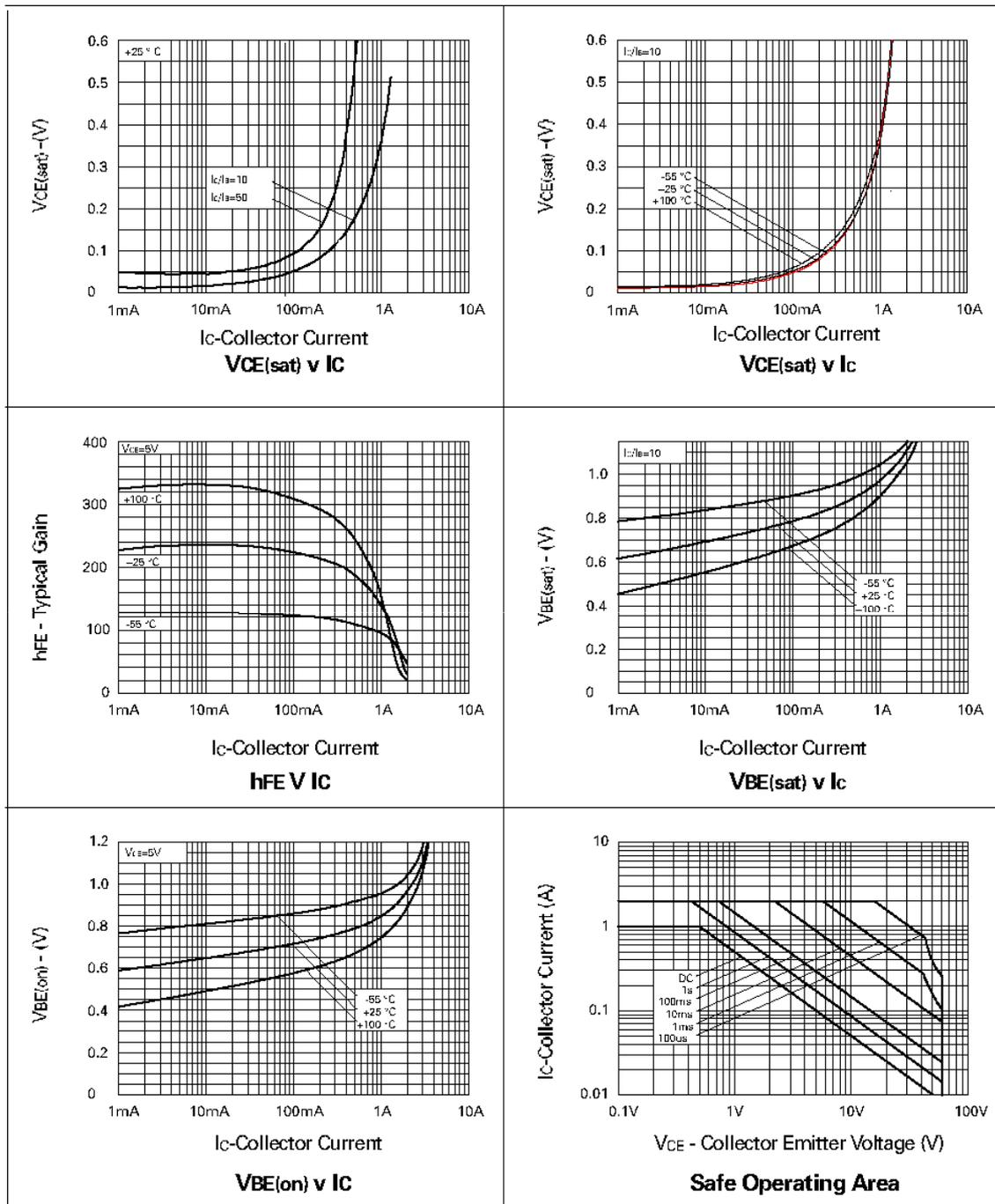
### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	40	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Peak Pulse Current	$-I_{CM}$	2	A
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_S$	- 65 to + 150	$^\circ\text{C}$

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

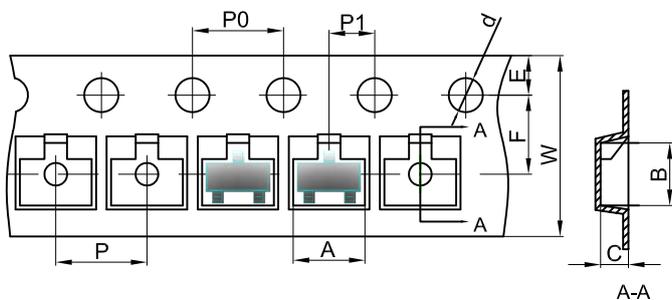
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE} = 5\text{ V}$ , $-I_C = 1\text{ mA}$	$h_{FE}$	300	-	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 100\text{ mA}$	$h_{FE}$	300	800	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 500\text{ mA}$	$h_{FE}$	250	-	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 1\text{ A}$	$h_{FE}$	160	-	-
Collector Cutoff Current at $-V_{CB} = 30\text{ V}$	$-I_{CBO}$	-	0.1	$\mu\text{A}$
Collector Cutoff Current at $-V_{CE} = 30\text{ V}$	$-I_{CEO}$	-	0.1	$\mu\text{A}$
Emitter Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	0.1	$\mu\text{A}$
Collector Emitter Saturation Voltage at $-I_C = 100\text{ mA}$ , $-I_B = 1\text{ mA}$	$-V_{CEsat}$	-	0.2	V
at $-I_C = 500\text{ mA}$ , $-I_B = 20\text{ mA}$		-	0.35	
at $-I_C = 1\text{ A}$ , $-I_B = 100\text{ mA}$		-	0.5	
Base Emitter Saturation Voltage at $-I_C = 1\text{ A}$ , $-I_B = 50\text{ mA}$	$-V_{BEsat}$	-	1.1	V
Base Emitter Voltage at $-I_C = 1\text{ A}$ , $-V_{CE} = 5\text{ V}$	$-V_{BE}$	-	1	V
Collector Capacitance at $-V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_C$	-	12	pF
Gain Bandwidth Product at $-V_{CE} = 10\text{ V}$ , $-I_C = 50\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	150	-	MHz

## Typical Characteristics



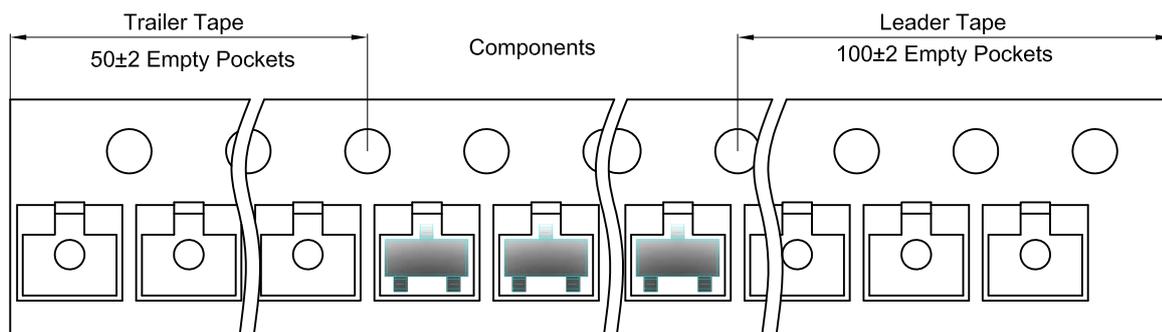
## SOT-23 Tape and Reel

### SOT-23 Embossed Carrier Tape

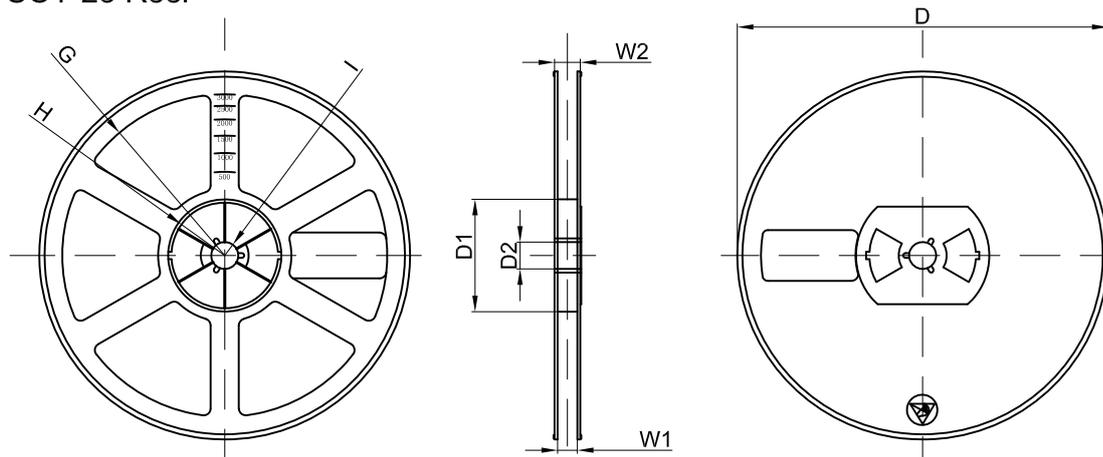


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

### 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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