

# SOT-23-6L Plastic-Encapsulate Transistors

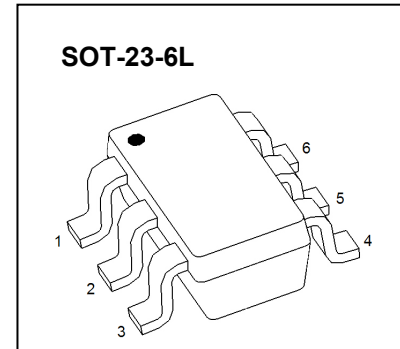
## 2SC1583 DUAL TRANSISTOR (NPN+NPN)

### FEATURE

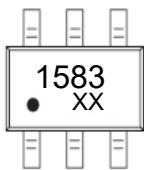
- Excellent Linearity of DC Gain
- Low Noise
- High  $h_{FE}$

### APPLICATION

- Differential Amplifier Circuit
- Pre-amplification Circuit
- Noise Suppression Circuit
- Voice Control Circuit

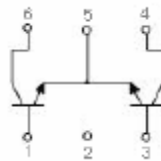


### MARKING



PIN1

### Equivalent Circuit



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

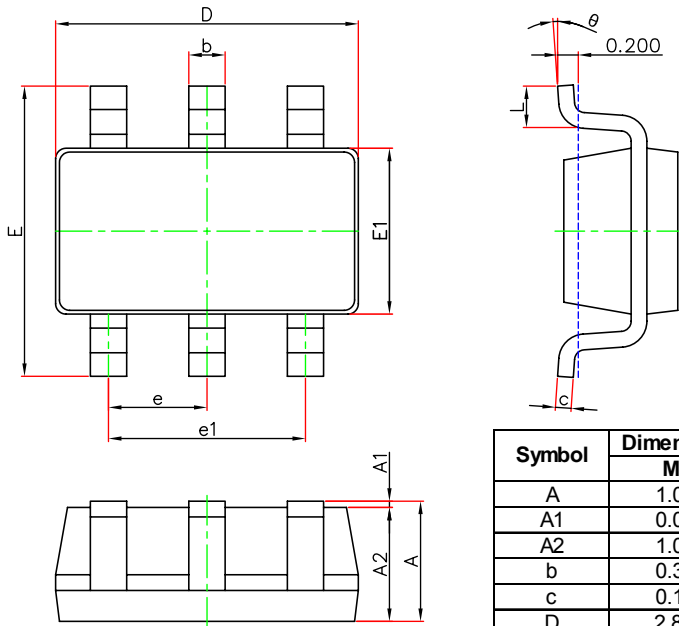
Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	50	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	0.1	A
$P_C$	Collector Power Dissipation	0.35	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	357	$^{\circ}\text{C}/\text{W}$
$T_J, T_{stg}$	2SHUDWLRW WLRDG6WRDJH7HP SHUDWUH5DJH	-55~+150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=100\mu\text{A}, I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=35\text{V}, I_E=0$			0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}=35\text{V}, I_B=0$			10	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=2\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=2\text{V}, I_C=1\text{mA}$	250		600	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.6	V
Base-emitter voltage differential	$ V_{BE1}-V_{BE2} $	$V_{CE}=6\text{V}, I_C=1\text{mA}$			10	mV
DC current gain ratio	$h_{FE1}/h_{FE2}^*$	$V_{CE}=6\text{V}, I_C=1\text{mA}$	0.8		1	
Transition frequency	$f_T$	$V_{CE}=6\text{V}, I_C=1\text{mA}$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=6\text{V}, I_E=0, f=1\text{MHz}$		2.5		pF
Noise figure	NF	$V_{CE}=6\text{V}, I_E=-0.1\text{mA}, f=1\text{kHz}, R_G=10\text{k}\Omega$		0.5		dB

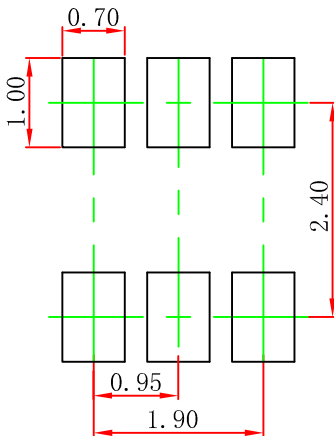
\* The lower  $h_{FE}$  of two components as  $h_{FE1}$ .

## SOT-23-6L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°

## SOT-23-6L Suggested Pad Layout



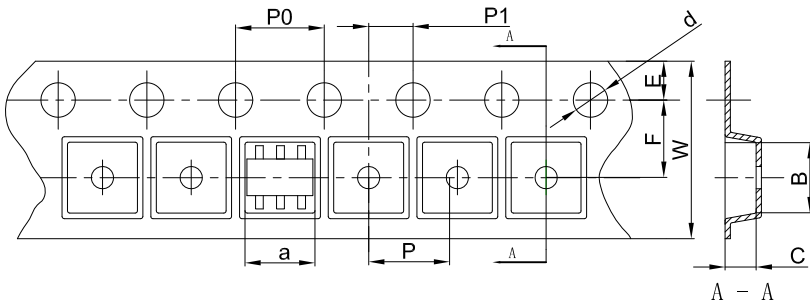
- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05$  mm.
  3. The pad layout is for reference purposes only.

### NOTICE

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# SOT-23-6L Tape and Reel

## SOT-23-6L Embossed Carrier Tape

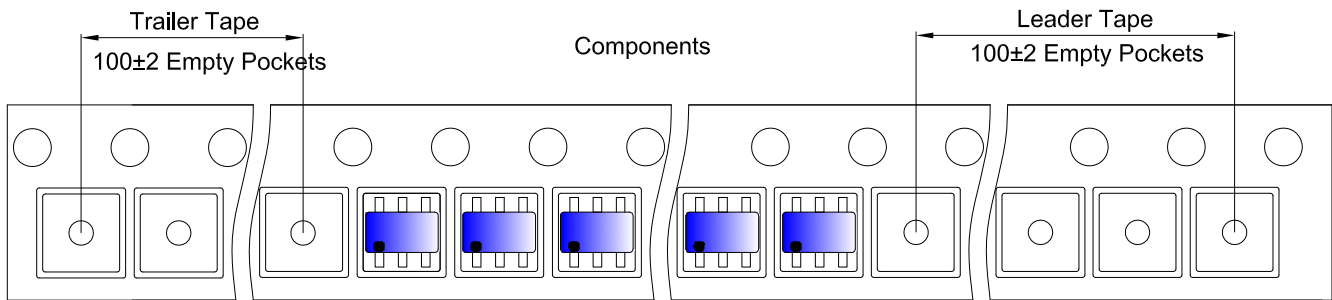


**Packaging Description:**

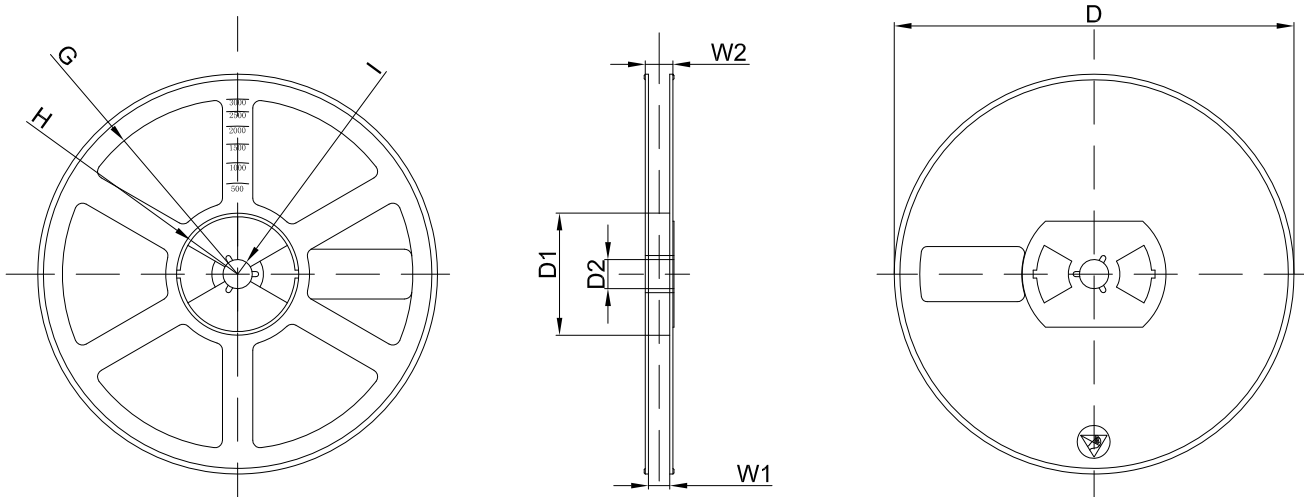
SOT-23-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOT-23-6L	3.17	3.23	1.37	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

## SOT-23-6L Tape Leader and Trailer



## SOT-23-6L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	