

### JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

# **SOT-23-6L Plastic-Encapsulate Transistors**

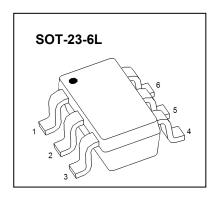
**2SC1583** DUAL TRANSISTOR (NPN+NPN)

#### **FEATURE**

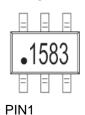
- Excellent Linearity of DC Gain
- Low Noise
- High h<sub>FE</sub>

#### **APPLICATION**

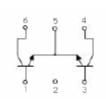
- Differential Amplifier Circuit
- Pre-amplification Circuit
- Noise Suppression Circuit
- Voice Control Circuit



### **MARKING**



### **Equivalent Circuit**



### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

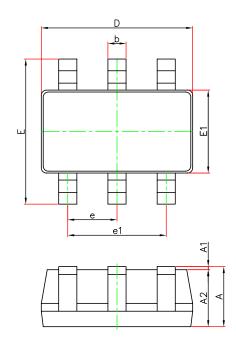
Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	50	V
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
Ic	Collector Current	0.1	Α
Pc	Collector Power Dissipation	0.35	W
R <sub>⊙JA</sub>	Thermal Resistance From Junction To Ambient	357	°C/W
Tj	Junction Temperature	150	℃
T <sub>stg</sub>	Storage Temperature	-55∼+150	°C

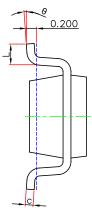
### **ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test condition	Min	Тур	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0	50			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =100μA, I <sub>B</sub> =0	50			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =35V, I <sub>E</sub> =0			0.1	μΑ
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> =35V, I <sub>B</sub> =0			10	μΑ
Emitter cut-off current	I <sub>EBO</sub>	$V_{EB}$ =2 $V$ , $I_{C}$ =0			0.1	μΑ
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =1mA	250		600	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			0.6	V
Base-emitter voltage differential	V <sub>BE1</sub> -V <sub>BE2</sub>	V <sub>CE</sub> =6V,I <sub>C</sub> =1mA			10	mV
DC current gain ratio	h <sub>FE1</sub> /h <sub>FE2</sub> *	V <sub>CE</sub> =6V,I <sub>C</sub> =1mA	0.8		1	
Transition frequency	f⊤	V <sub>CE</sub> =6V,I <sub>C</sub> =1mA		150		MHz
Collector output capacitance	Cob	V <sub>CB</sub> =6V, I <sub>E</sub> =0, f=1MHz		2.5		pF
Noise figure	NF	V <sub>CE</sub> =6V, I <sub>E</sub> =-0.1mA,		0.5		dB
Noise figure	INF	f=1kHz, $R_G$ =10 kΩ		0.0		uБ

<sup>\*</sup> The lower  $h_{\text{FE}}$  of two components as  $h_{\text{FE}1}$ .

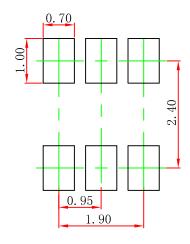
# **SOT-23-6L Package Outline Dimensions**





Symbol	Dimensions II	n Millimeters	Dimensions In Inches			
Symbol	Min.	Max.	Min.	Max.		
Α	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		
С	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		
Е	2.650	2.950	0.104	0.116		
е	0.950(	BSC)	0.037	(BSC)		
e1	1.800	2.000	0.071	0.079		
L	0.300	0.600	0.012	0.024		
θ	0°	8°	0°	8°		

# **SOT-23-6L Suggested Pad Layout**



#### Note:

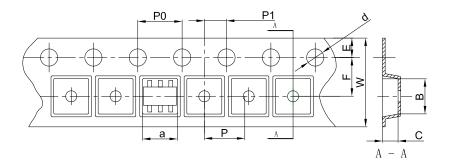
- 1. Controlling dimension: in millimeters.
- 2.General tolerance:± 0.05mm.
- 3. The pad layout is for reference purposes only.

### NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

## SOT-23-6L Tape and Reel

### SOT-23-6L Embossed Carrier Tape

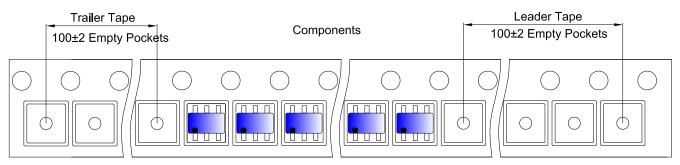


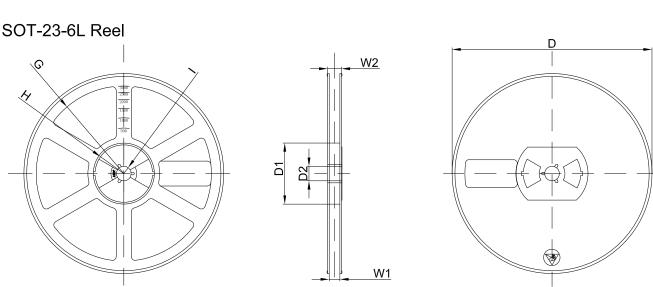
#### Packaging Description:

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	а	В	С	d	E	F	P0	Р	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





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

REEL	Reel Size	Вох	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	