



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

SOT-89-3L Plastic-Encapsulate Transistors

2SA1013 TRANSISTOR (PNP)

FEATURE

- High voltage
- Large continuous collector current capability

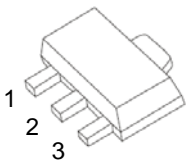
MARKING: 1013

SOT-89-3L

1. BASE

2. COLLECTOR

3. EMITTER



MAXIMUM RATINGS (Ta=25℃ unless otherwise noted )

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	-160	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-160	V
V <sub>EBO</sub>	Emitter-Base Voltage	-6	V
I <sub>C</sub>	Collector Current -Continuous	-1	A
P <sub>C</sub>	Collector Power Dissipation	0.5	W
T <sub>j</sub>	Junction Temperature	150	℃
T <sub>stg</sub>	Storage Temperature	-55~+150	℃
R <sub>θJA</sub>	Thermal Resistance from Junction to Ambient	250	℃/W

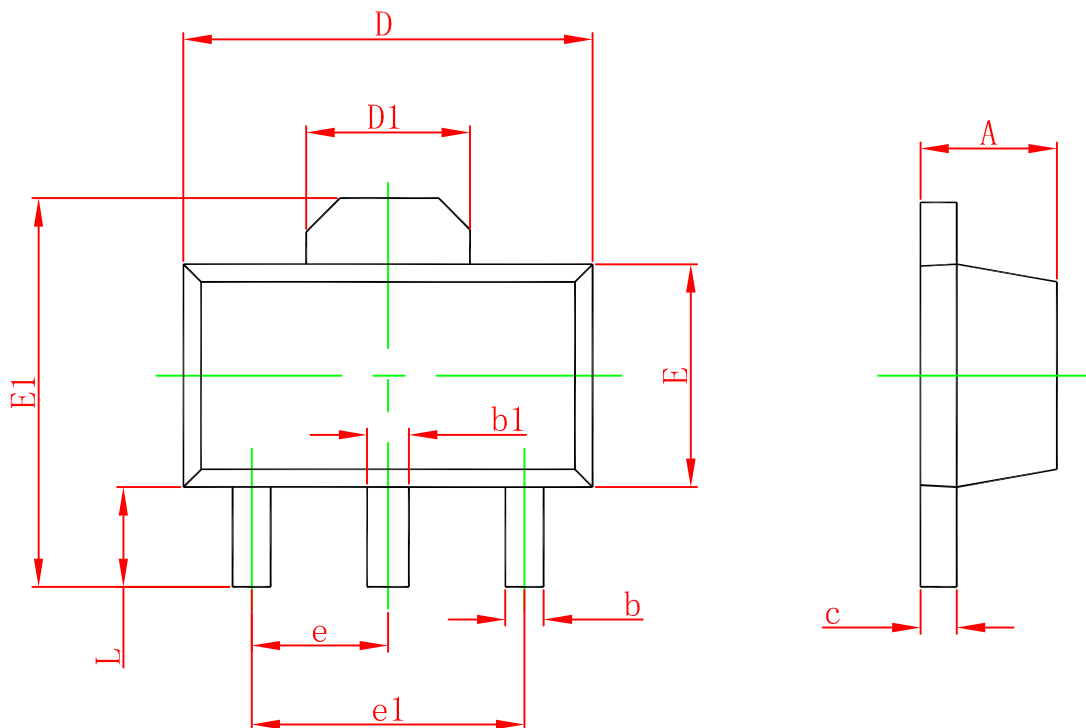
ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =- 100μA , I <sub>E</sub> =0	-160		V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA , I <sub>B</sub> =0	-160		V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -10μA, I <sub>C</sub> =0	-6		V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-150 V , I <sub>E</sub> =0		-1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-6V, I <sub>C</sub> =0		-1	μA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =-5 V, I <sub>C</sub> =- 200mA	60	320	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -500m A, I <sub>B</sub> = -50mA		-1.5	V
Base-emitter voltage	V <sub>BE</sub>	I <sub>C</sub> = -5 mA, V <sub>CE</sub> =- 5V		-0.75	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -200mA	15		MHz

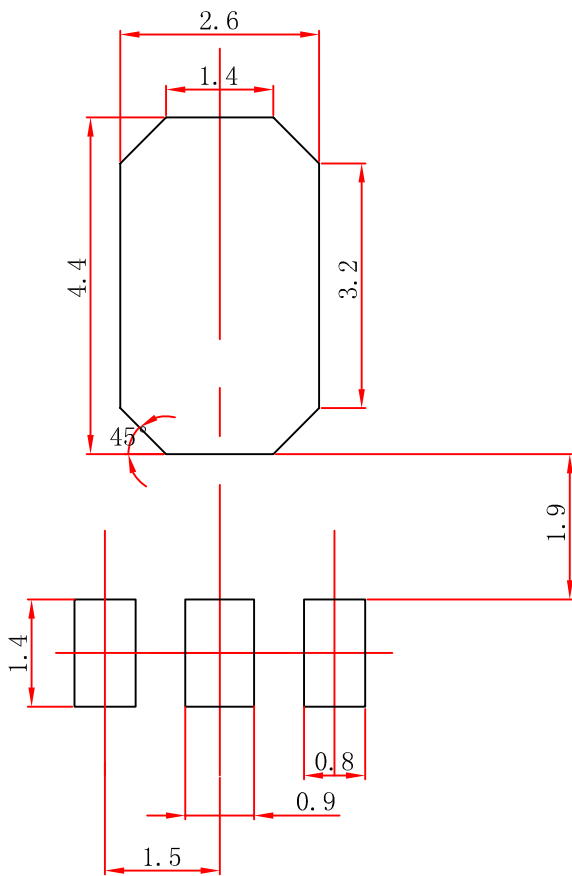
CLASSIFICATION OF h<sub>FE</sub>

Rank	R	O	Y
Range	60-120	100-200	160-320

## SOT-89-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047



中心距：1.5  
脚宽：0.42/0.48  
焊盘宽：0.8/0.9  
脚长：1.0  
焊盘长：1.4

#### 技术要求

1. 塑封体尺寸4.50×2.45；
2. 未注公差为：±0.05；
3. 所有单位为：mm。

媒体编号

镀 涂

旧底图总号

底图总号

日期 签名

更改标记	数量	更改单号	签 名	日 期
设 计				
审 核				
工 艺				
批 准				

SOT-89-3L  
焊 盘

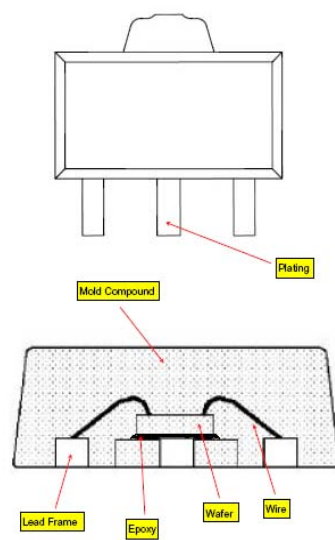
等级标记		版 号	比 例
			20:1
第 1 张		共 1 张	
江苏长电科技股份有限公司			

格式 (1)

制 图：

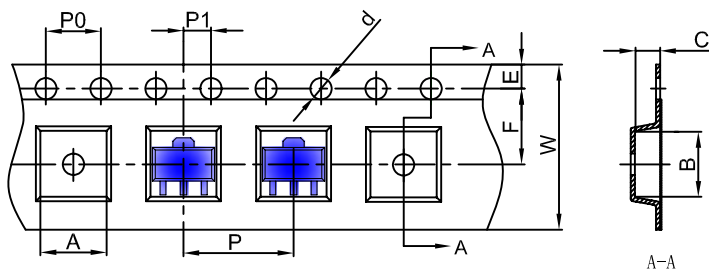
描 图：

幅 面：A4



## SOT-89-3L Tape and reel

### SOT-89-3L Embossed Carrier Tape

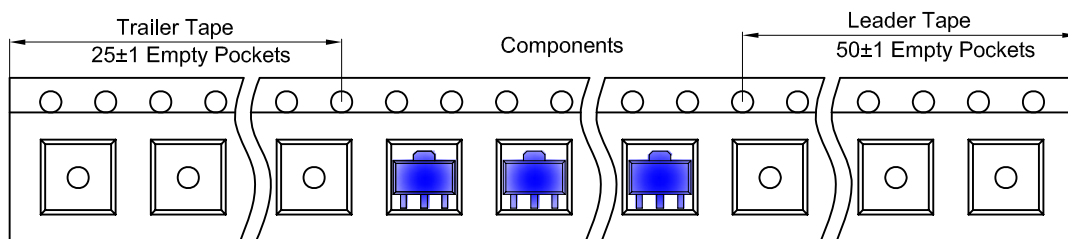


#### Packaging Description:

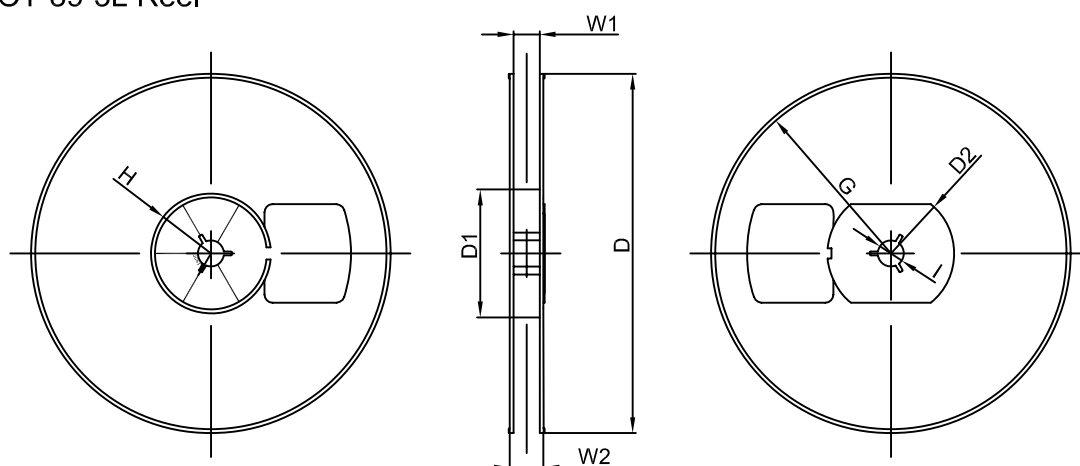
SOT-89-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 1,000 units per 7" or 18.0 cm 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-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
(Tolerance)	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+0.3/-0.1

### SOT-89-3L Tape Leader and Trailer



### SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	210×208×203	40,000 pcs	440×440×230	8.15

