

## TO-92L Plastic-Encapsulate Transistors

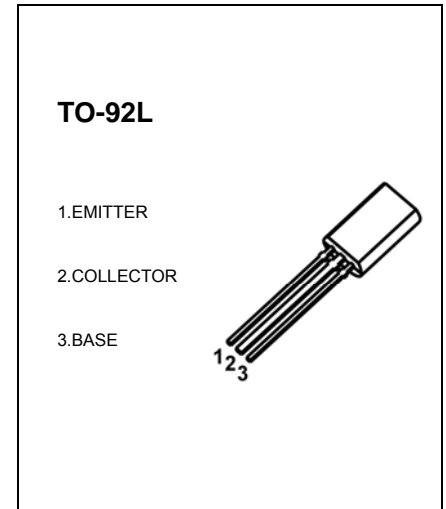
**2SC1383** TRANSISTOR (NPN)  
**2SC1384**

### FEATURES

- Low Collector to Emitter Saturation Voltage  $V_{CE(sat)}$ .
- Complementary Pair with 2SA0683 and 2SA0684.

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

Symbol	Parameter	2SC1383	2SC1384	Unit
$V_{CBO}$	Collector-Base Voltage	30	60	V
$V_{CEO}$	Collector-Emitter Voltage	25	50	V
$V_{EBO}$	Emitter-Base Voltage	5		V
$I_C$	Collector Current –Continuous	1		A
$P_C$	Collector Power Dissipation	0.75		W
$T_J$	Junction Temperature	150		$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150		$^\circ\text{C}$



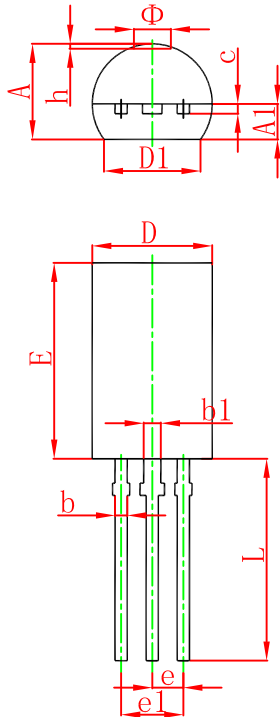
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	2SC1383	30		V
			2SC1384	60		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=2\text{mA}, I_B=0$	2SC1383	25		V
			2SC1384	50		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	85		340	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=1\text{A}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.2	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}$		200		MHz

### CLASSIFICATION OF $h_{FE(1)}$

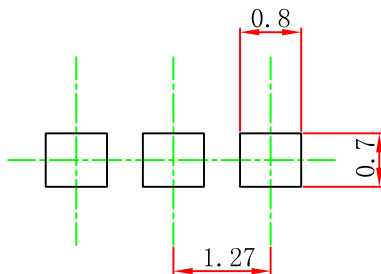
Rank	Q	R	S
Range	85-170	120-240	170-340

## TO-92L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.700	4.100	0.146	0.161
A1	1.280	1.580	0.050	0.062
b	0.350	0.550	0.014	0.022
b1	0.600	0.800	0.024	0.031
c	0.350	0.450	0.014	0.018
D	4.700	5.100	0.185	0.201
D1	4.000		0.157	
E	7.800	8.200	0.307	0.323
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	13.800	14.200	0.543	0.559
$\Phi$		1.600		0.063
h	0.000	0.300	0.000	0.012

## TO-92L Suggested Pad Layout



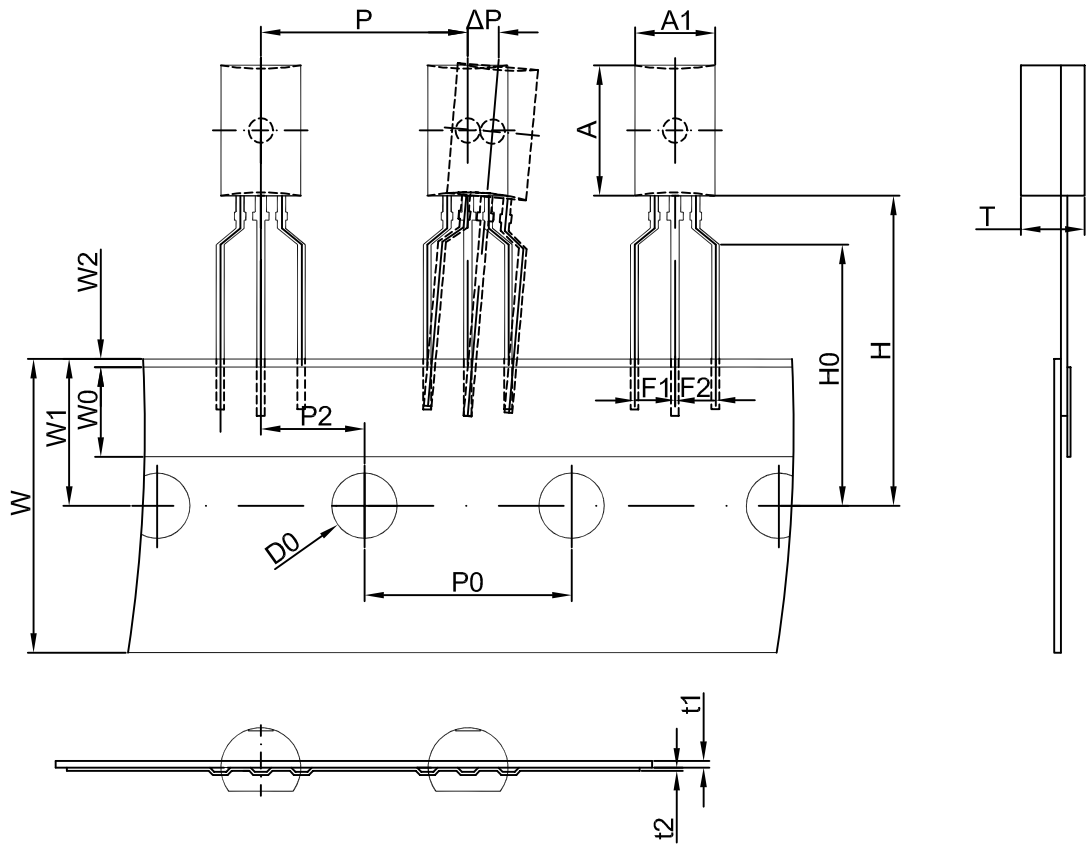
### Note:

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

### NOTICE

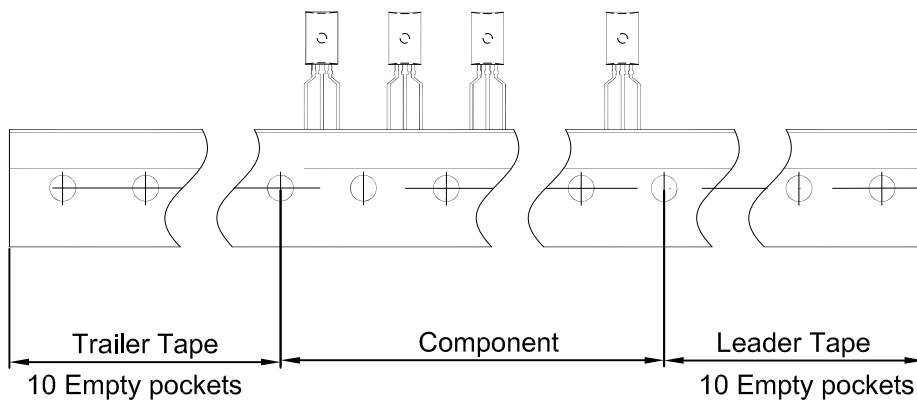
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# TO-92L PACKAGE TAPING DIMENSION



Dimensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.9±0.2	8.0±0.2	3.9±0.2	12.7±0.3	12.7±0.2	6.35±0.3	2.5±0.3	2.5±0.3	18.0+1.0/-0.5
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0±0.5	9.0±0.5	1.0 MAX.	19.0+2.0/-0	16.0±0.5	4.0±0.2	0.4±0.05	0.2±0.05	0 ± 1.0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92L	2000 pcs	333×203×42	20,000 pcs	493×400×264