

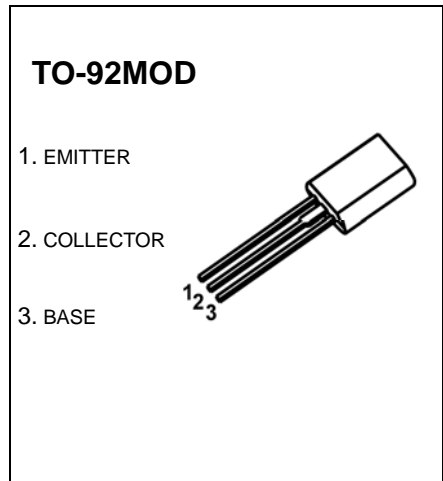


# JSCJ TO-92MOD Plastic-Encapsulate Transistors

## 2SB985 TRANSISTOR (PNP)

### FEATURES

- Power Supplies, Relay Drivers, Lamp Drivers
- Adoption of FBET,MBIT Processes
- Low Saturation Voltage
- Large Current Capacity and Wide ASO

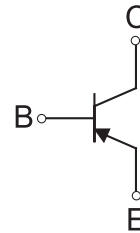


### MARKING



B985=Device code  
 Solid dot= Green molding compound device,  
 if none, the normal device  
 XXX=Code

### Equivalent Circuit



### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2SB985	TO-92MOD	Bulk	500pcs/Bag
2SB985-TA	TO-92MOD	Tape	2000pcs/Box

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

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	-60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-50	V
V <sub>EBO</sub>	Emitter-Base Voltage	-6	V
I <sub>c</sub>	Collector Current -Continuous	-3	A
P <sub>c</sub>	Collector Power Dissipation	0.9	W
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	139	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55 to +150	°C

## ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$  unless otherwise specified

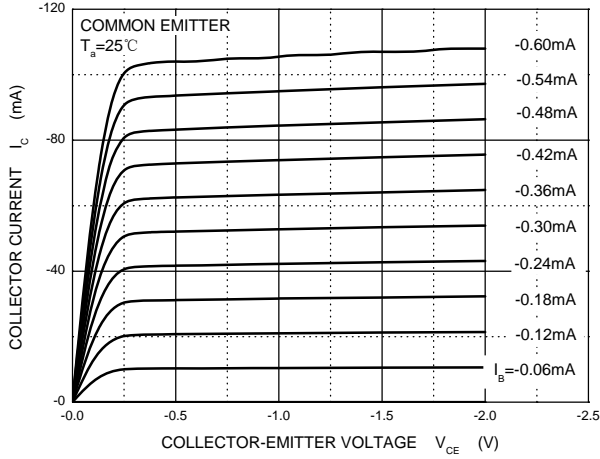
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-40\text{V}, I_E=0$			-1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0$			-1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=-2\text{V}, I_C=-100\text{mA}$	100		560	
	$h_{FE(2)}$	$V_{CE}=-2\text{V}, I_C=-3\text{A}$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-2\text{A}, I_B=-100\text{mA}$			-0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-2\text{A}, I_B=-100\text{mA}$			-1.2	V
Transition frequency	$f_T$	$V_{CE}=-10\text{V}, I_C=-50\text{mA}$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$		39		pF

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

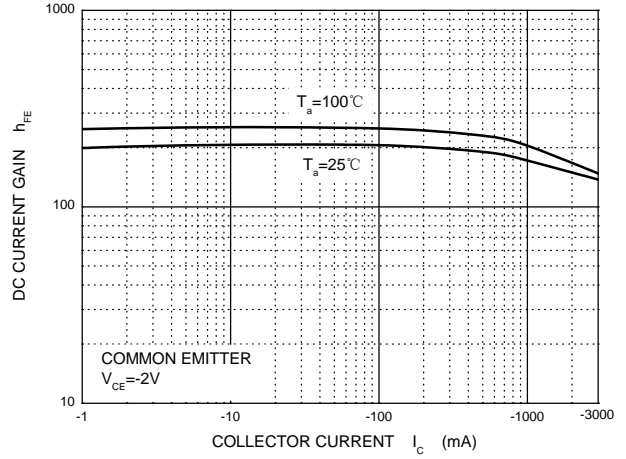
Rank	R	S	T	U
Range	100-200	140-280	200-400	280-560

# Typical Characteristics

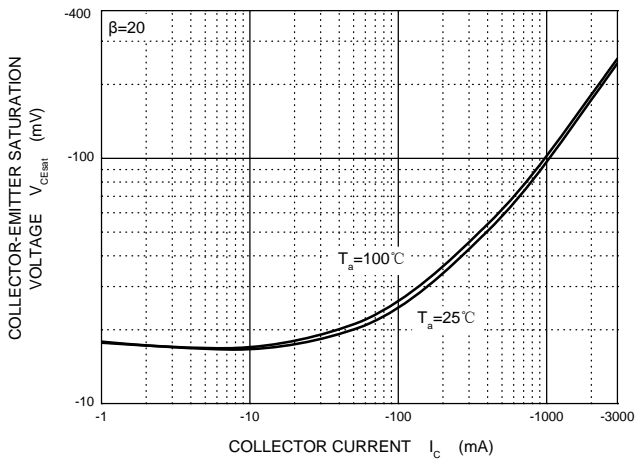
Static Characteristic



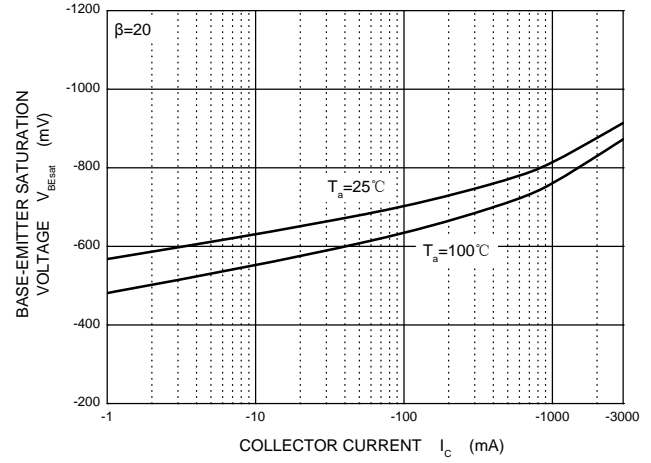
$h_{FE}$  —  $I_c$



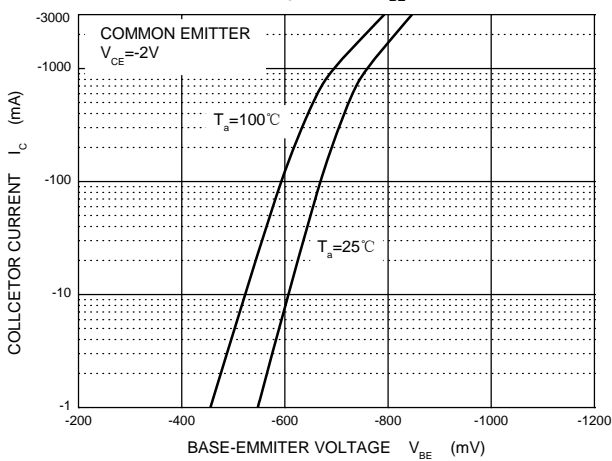
$V_{CEsat}$  —  $I_c$



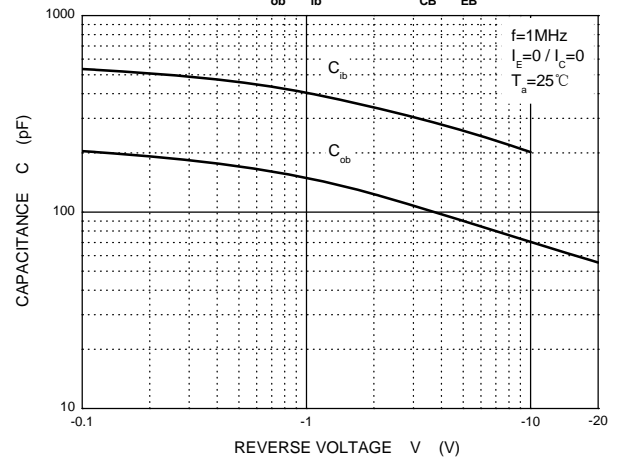
$V_{BEsat}$  —  $I_c$



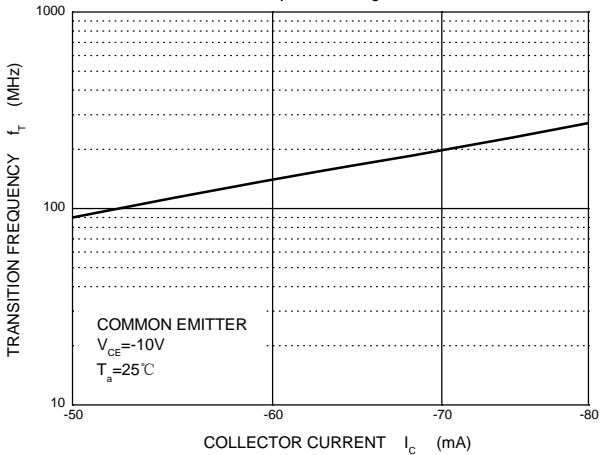
$I_c$  —  $V_{BE}$



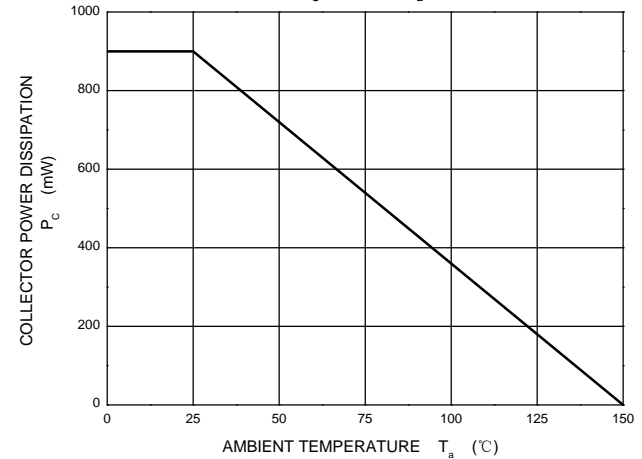
$C_{ob}/C_{ib}$  —  $V_{CB}/V_{EB}$



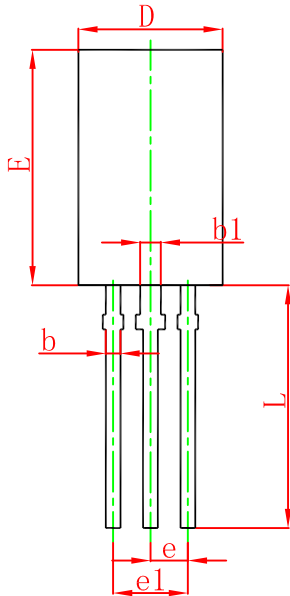
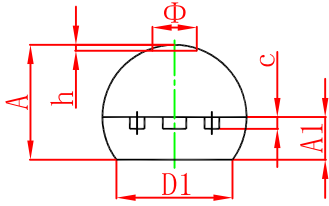
$f_T$  —  $I_c$



$P_c$  —  $T_a$

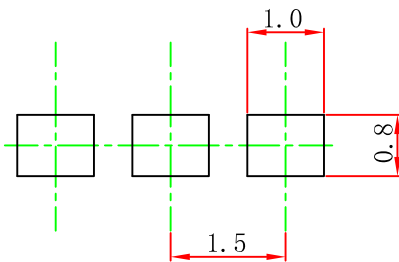


## TO-92MOD Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.800	5.000	0.189	0.197
A1	1.730	2.030	0.068	0.080
b	0.440	0.600	0.017	0.024
b1	0.940	1.100	0.037	0.043
c	0.350	0.450	0.014	0.018
D	5.900	6.100	0.232	0.240
D1	4.000		0.157	
E	8.500	8.700	0.335	0.343
e	1.500 TYP.		0.059 TYP.	
e1	2.900	3.100	0.114	0.122
L	13.800	14.200	0.543	0.559
$\Phi$		1.600		0.063
h	0.000	0.380	0.000	0.015

## TO-92MOD Suggested Pad Layout



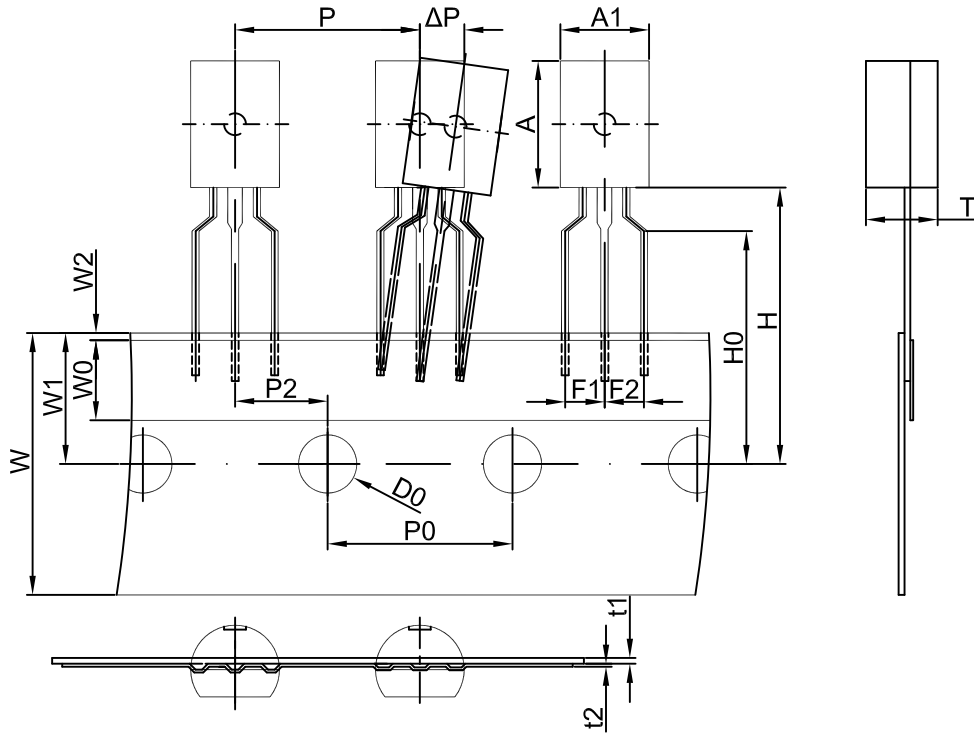
### Note:

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

### NOTICE

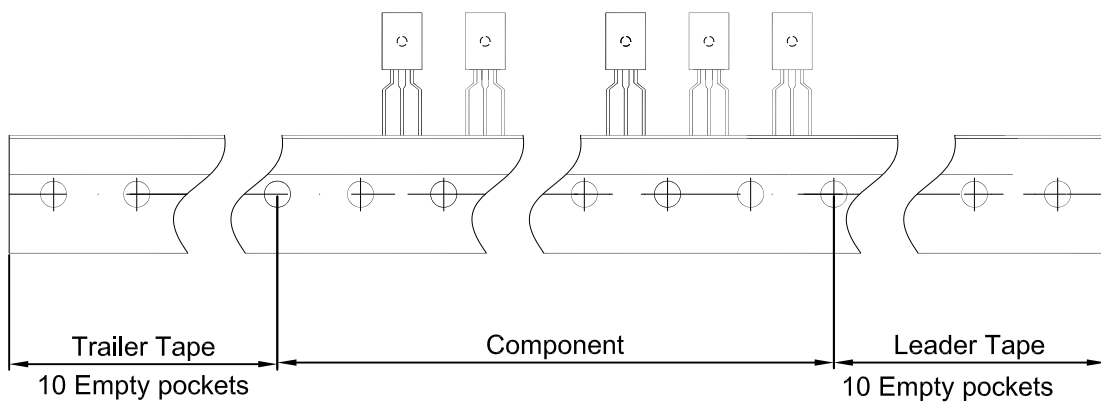
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# TO-92MOD PACKAGE TAPING DIMENSION



Dimensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
6.0	8.6	4.9	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92MOD	2000 pcs	333×245×43	20,000 pcs	573×404×266