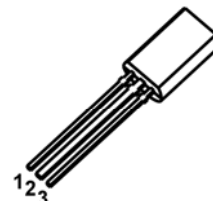
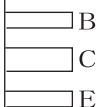


**TO-92L Plastic-Encapsulate Transistors****2SB647** TRANSISTOR (PNP)**FEATURES**

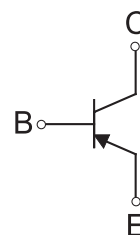
- Low Frequency Power Amplifier
- Complementary Pair with 2SD667

TO - 92L

1. EMITTER
2. COLLECTOR
3. BASE

**MARKING****B647**
• **XXX**

B647=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
2SB647	TO-92L	Bulk	500pcs/Bag
2SB647-TA	TO-92L	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	-120	V
V _{CEO}	Collector-Emitter Voltage	-80	V
V _{EB0}	Emitter-Base Voltage	-5	V
I _C	Collector Current	-1	A
P _C	Collector Power Dissipation	750	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	167	°C/W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+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	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-80			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}	$V_{CB}=-100\text{V}, I_E=0$			-10	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=-5\text{V}, I_C=-150\text{mA}$	60		320	
	$h_{FE(2)}^*$	$V_{CE}=-5\text{V}, I_C=-500\text{mA}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-1	V
Base-emitter voltage	V_{BE}^*	$V_{CE}=-5\text{V}, I_C=-150\text{mA}$			-1.5	V
Collector output capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$		20		pF
Transition frequency	f_T	$V_{CE}=-5\text{V}, I_C=-150\text{mA}$		140		MHz

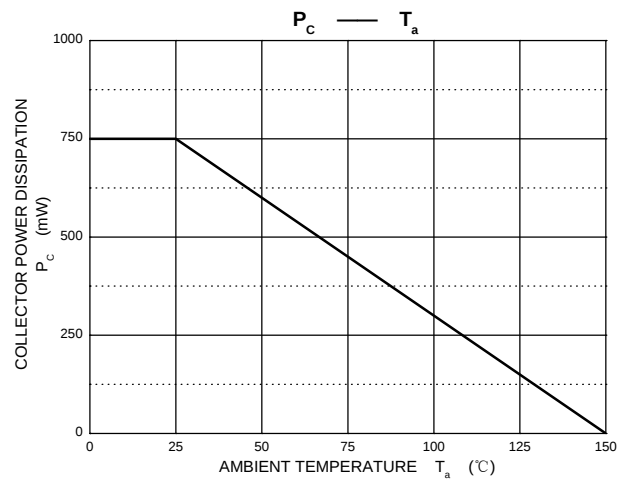
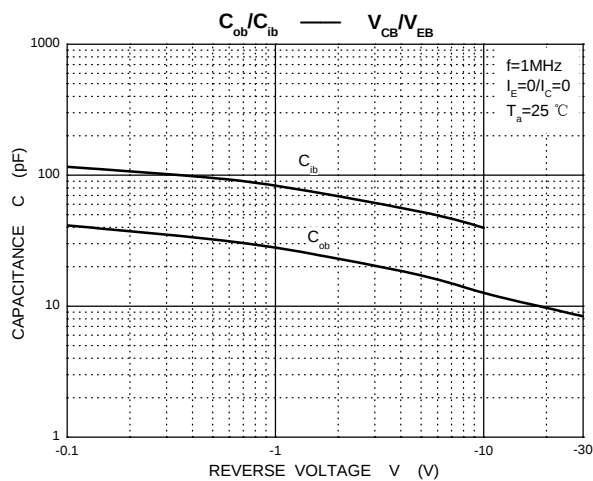
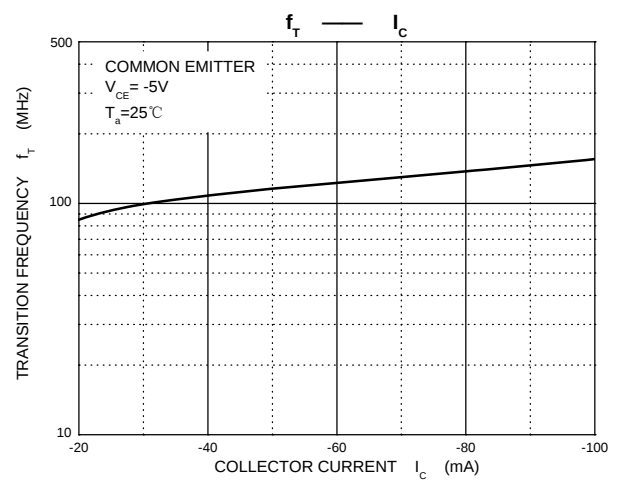
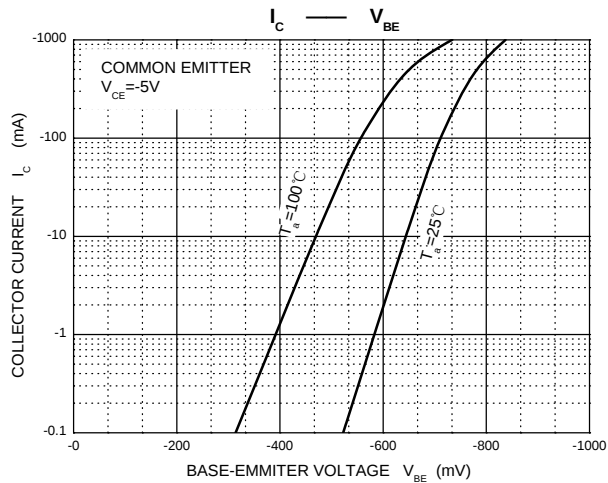
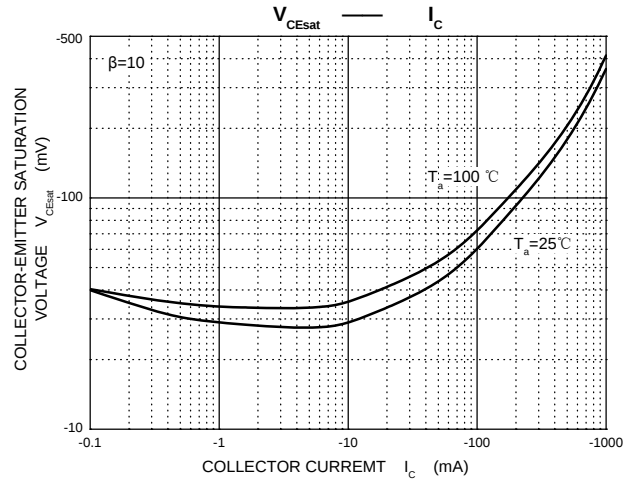
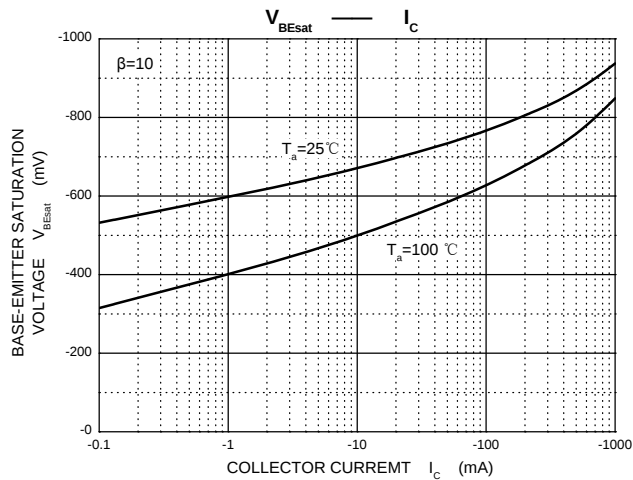
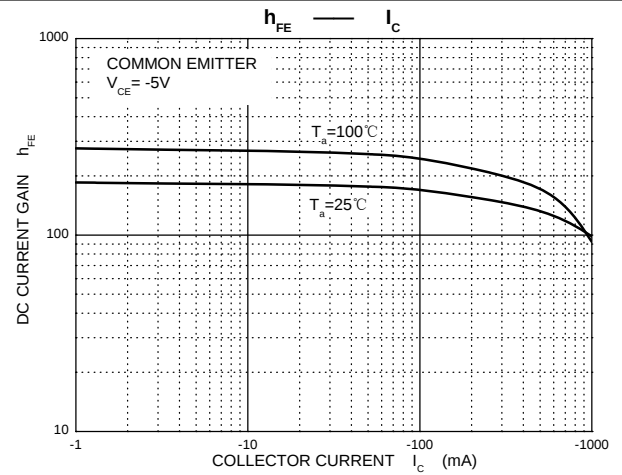
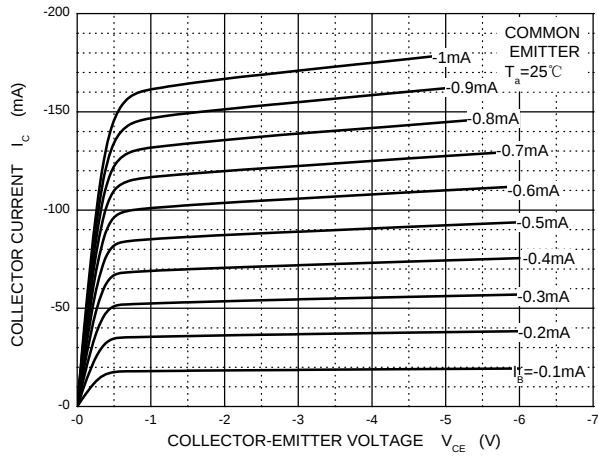
*Pulse test

CLASSIFICATION OF $h_{FE(1)}$

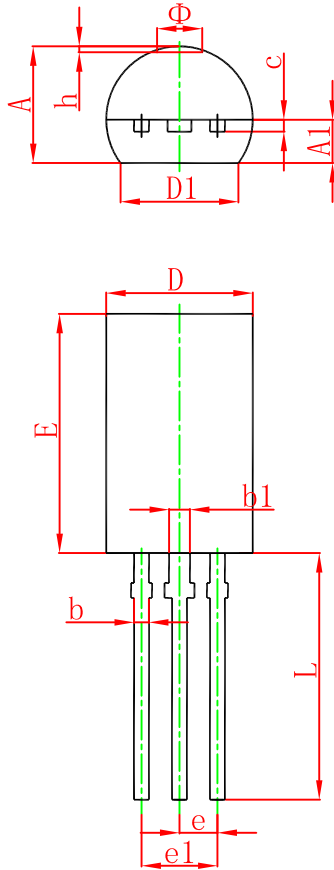
RANK	B	C	D
RANGE	60-120	100-200	160-320

Typical Characteristics

Static Characteristic

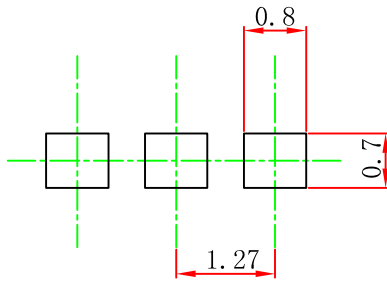


TO-92L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.750	4.050	0.148	0.159
A1	1.280	1.580	0.050	0.062
b	0.380	0.550	0.015	0.022
b1	0.620	0.780	0.024	0.031
c	0.350	0.450	0.014	0.018
D	4.750	5.050	0.187	0.199
D1	4.000		0.157	
E	7.850	8.150	0.309	0.321
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
Φ		1.600		0.063
h	0.000	0.300	0.000	0.012

TO-92L Suggested Pad Layout



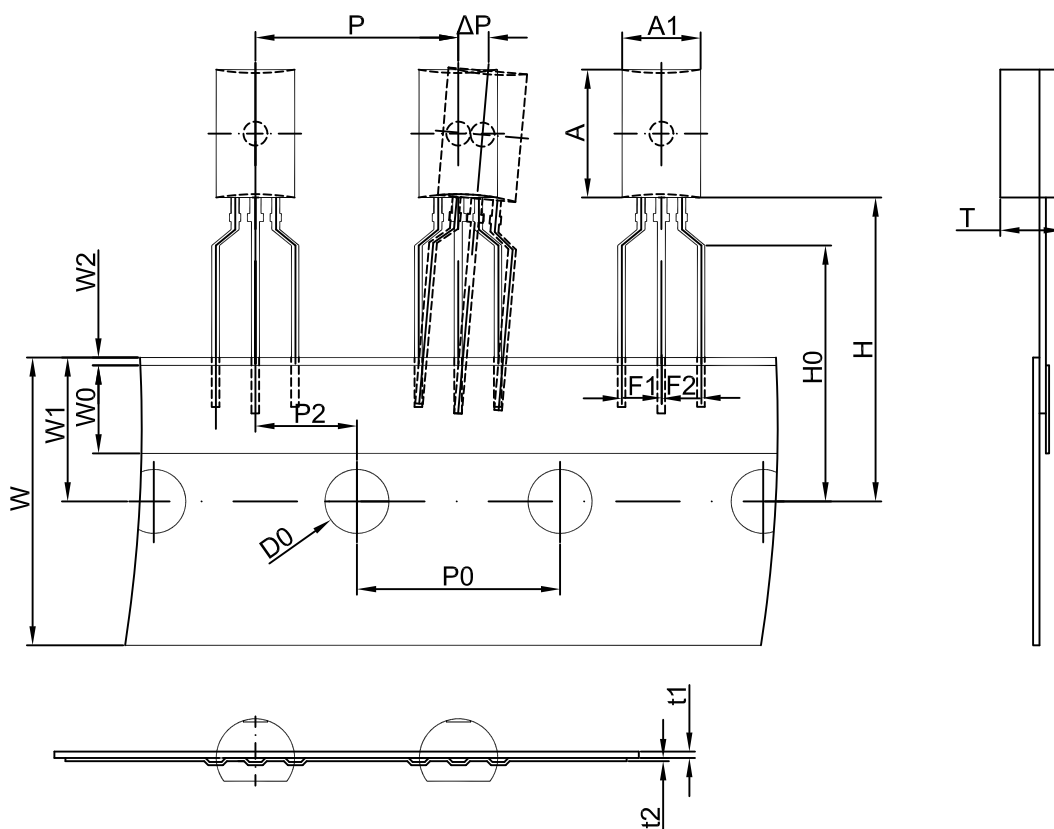
Note:

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

NOTICE

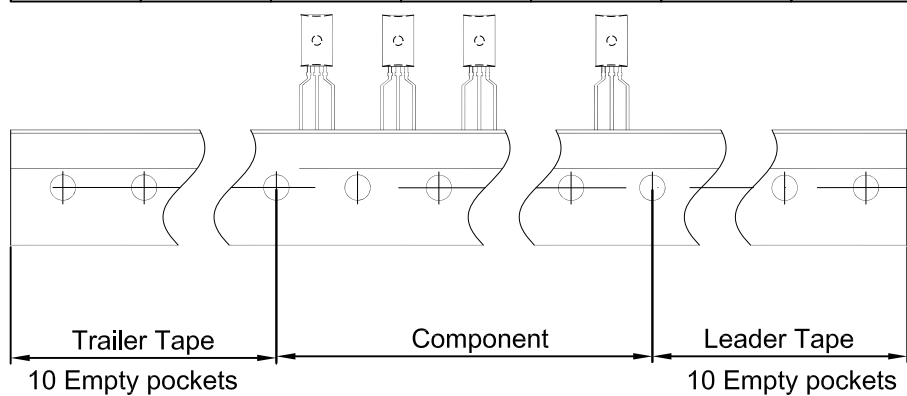
JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

TO-92L PACKAGE TAPING DIMENSION



Dimensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.9	8.0	3.9	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-92L	2000 pcs	333×203×42	20,000 pcs	493×400×264