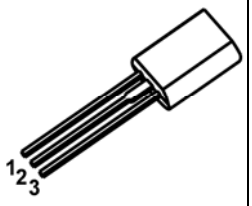
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

# TO-92MOD Plastic-Encapsulate Transistors

## 2SC1627A TRANSISTOR (NPN)

**TO-92MOD**

1. EMITTER
2. COLLECTOR
3. BASE




### FEATURE

- Complementary to 2SA817A
- Driver Stage Application of 30 to 35 Watts Amplifiers

### MAXIMUM RATINGS($T_a$=25℃ unless otherwise noted)

| Symbol | parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 80 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 80 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current -Continuous | 0.4 | A |
| $P_C$ | Collector Power Dissipation | 0.8 | W |
| $T_j$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55-150 | ℃ |

### ELECTRICAL CHARACTERISTICS ($T_a$=25℃ unless otherwise specified)

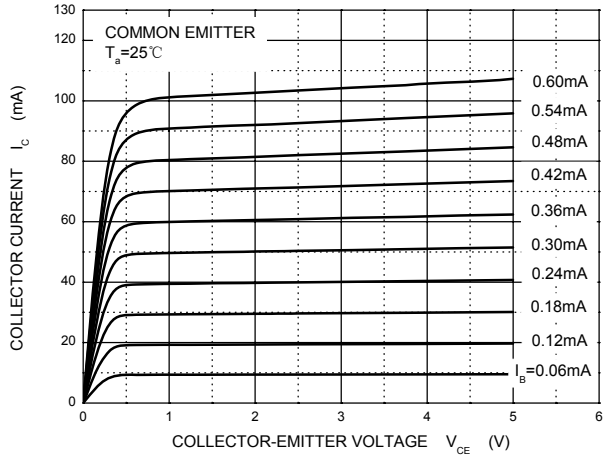
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Collector-base breakdown voltage** | $V_{(BR)CBO}$ | $I_C$=100μA , $I_E$=0 | 80 | | | V |
| **Collector-emitter breakdown voltage** | $V_{(BR)CEO}$ | $I_C$=5mA, IB=0 | 80 | | | V |
| **Emitter-base breakdown voltage** | $V_{(BR)EBO}$ | $I_E$=100μA, $I_C$=0 | 5 | | | V |
| **Collector cut-off current** | $I_{CBO}$ | $V_{CB}$=50V, IE=0 | | | 0.1 | μA |
| **Emitter cut-off current** | $I_{EBO}$ | $V_{EB}$=5V, IC=0 | | | 0.1 | μA |
| **DC current gain** | $h_{FE(1)}$ | $V_{CE}$=2 V, IC= 50mA | 70 | | 240 | |
| | $h_{FE(2)}$ | $V_{CE}$=2 V, IC= 200mA | 40 | | | |
| **Collector-emitter saturation voltage** | $V_{CE(sat)}$ | $I_C$= 200m A, $I_B$= 20mA | | | 0.4 | V |
| **Base-emitter voltage** | $V_{BE(on)}$ | $V_{CE}$= 2V, IC= 5mA | 0.55 | | 0.8 | V |
| **Transition frequency** | $f_T$ | $V_{CE}$= 10 V, $I_C$= 10mA | | 100 | | MHz |

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

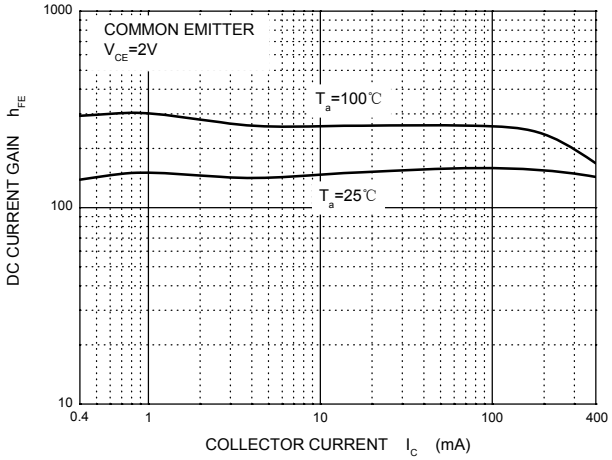
| Rank | O | Y |
|---|---|---|
| Range | 70-140 | 120-240 |

# Typical Characteristics

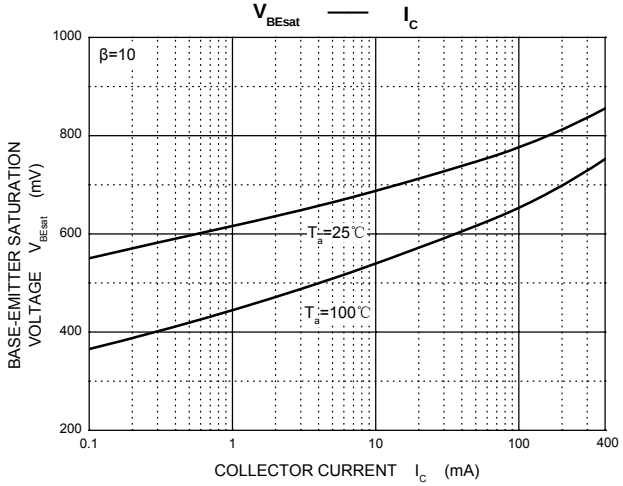
**Static Characteristic**



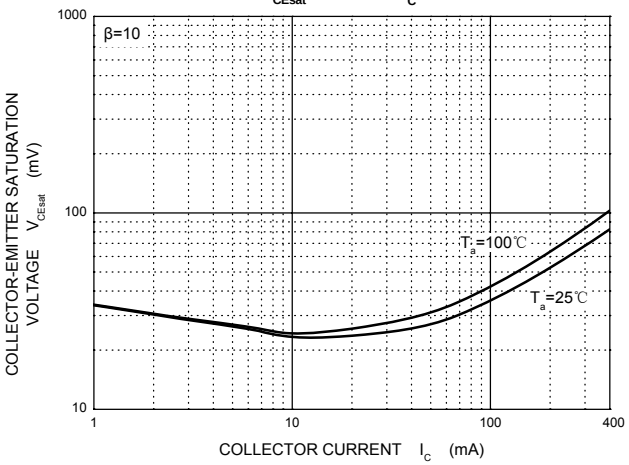

**$h_{FE}$ —— $I_C$**



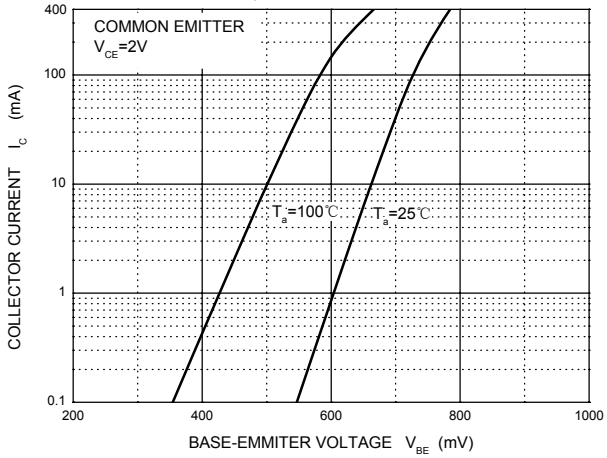

**$V_{BEsat}$ —— $I_C$**



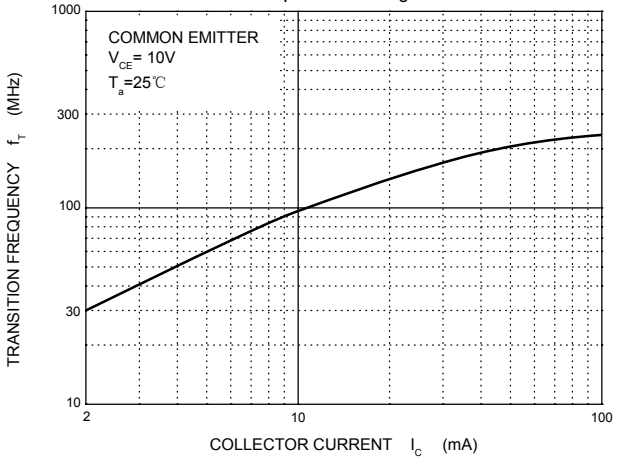

**$V_{CEsat}$ —— $I_C$**



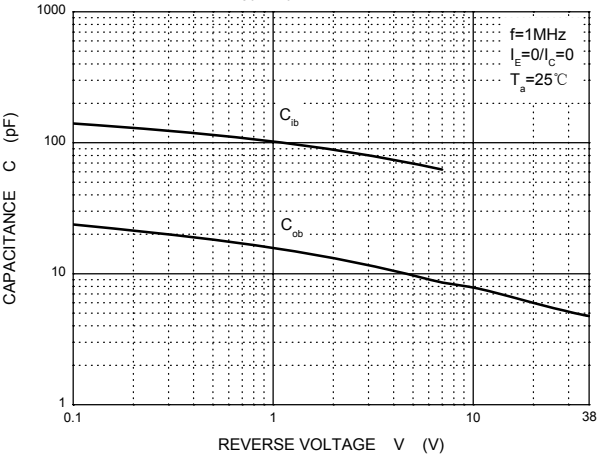

**$I_C$ —— $V_{BE}$**



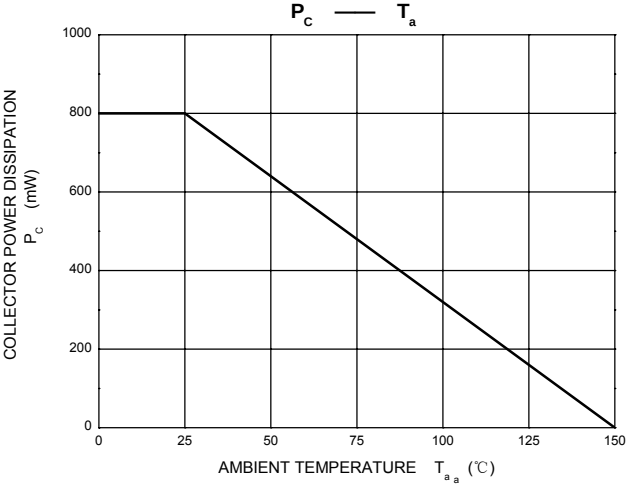

**$f_T$ —— $I_C$**



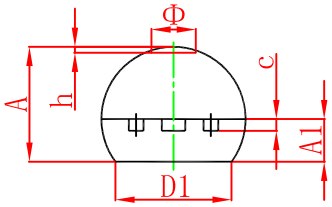

**$C_{ob}$/ $C_{ib}$ —— $V_{CB}$/ $V_{EB}$**

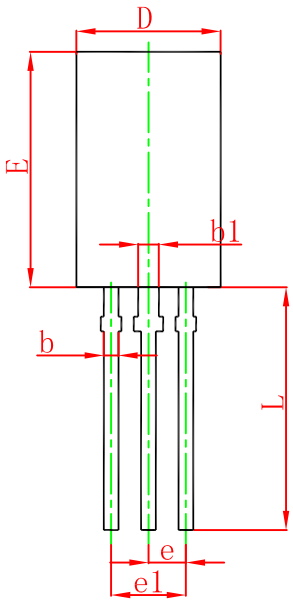



**$P_C$ —— $T_a$**



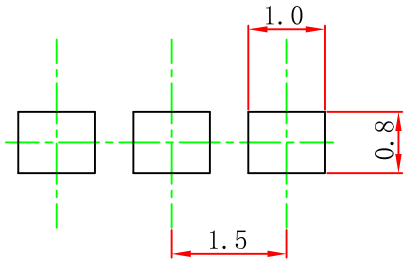
## **TO-92MOD** Package Outline Dimensions



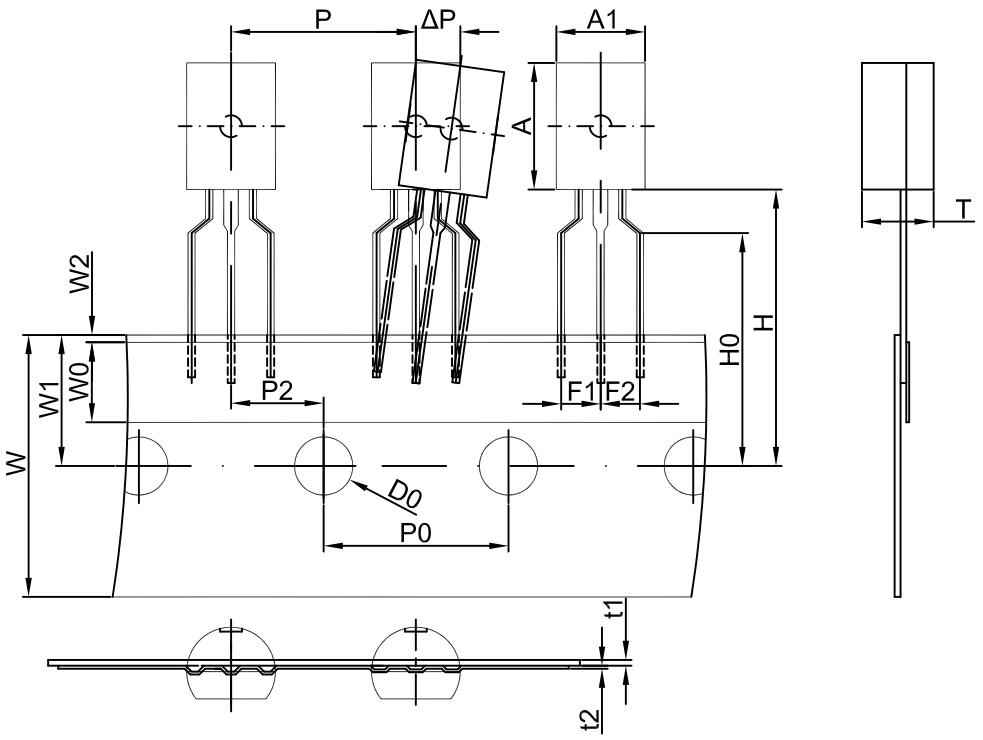

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 4.800 | 5.000 | 0.189 | 0.197 |
| A1 | 1.730 | 2.030 | 0.068 | 0.080 |
| b | 0.440 | 0.600 | 0.017 | 0.024 |
| b1 | 0.940 | 1.100 | 0.037 | 0.043 |
| c | 0.350 | 0.450 | 0.014 | 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 |
| Φ | | 1.600 | | 0.063 |
| h | 0.000 | 0.380 | 0.000 | 0.015 |

## **TO-92MOD** Suggested Pad Layout

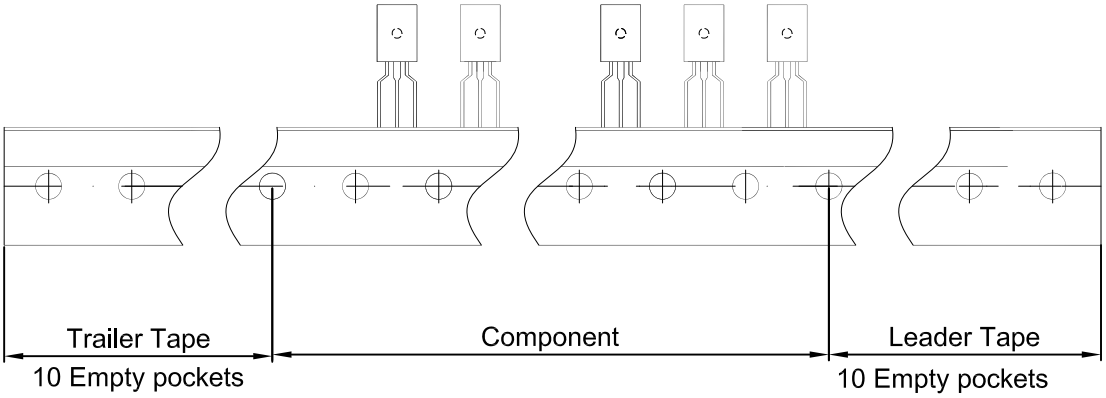



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

## TO-92MOD PACKAGE TAPEING DIMENSION




| Dimiensions 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 |