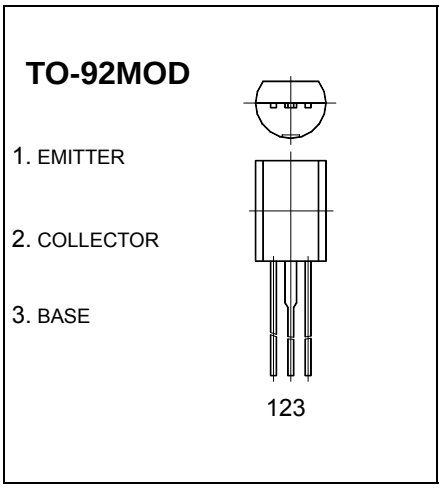
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

# TO-92MOD Plastic-Encapsulate Transistors

## 2SD667,2SD667A TRANSISTOR (NPN)




### FEATURES

- Low frequency power amplifier
- Complementary pair with 2SB647/A

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

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector- Base Voltage | 120 | V |
| $V_{CEO}$ | Collector-Emitter Voltage 2SD667 | 80 | V |
| | 2SD667A | 100 | |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current -Continuous | 1 | A |
| $P_C$ | Collector Power Dissipation | 900 | mW |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature | -55-150 | ℃ |

### ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

| Parameter | Symbol | Test conditions | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| **Collector-base breakdown voltage** | $V_{(BR)CBO}$ | $I_C$=10μA,$I_E$=0 | | 120 | | | V |
| **Collector-emitter breakdown voltage** | $V_{(BR)CEO}$ | $I_C$=1mA,$I_B$=0 | 2SD667 | 80 | | | V |
| | | | 2SD667A | 100 | | | V |
| **Emitter-base breakdown voltage** | $V_{(BR)EBO}$ | $I_E$=10μA,$I_C$=0 | | 5 | | | V |
| **Collector cut-off current** | $I_{CBO}$ | $V_{CB}$=100V,$I_E$=0 | | | | 10 | μA |
| **Emitter cut-off current** | $I_{EBO}$ | $V_{EB}$=4V,$I_C$=0 | | | | 10 | μA |
| **DC current gain** | $h_{FE(1)}$ | $V_{CE}$=5V,$I_C$=150mA | 2SD667 | 60 | | 320 | |
| | | | 2SD667A | 60 | | 200 | |
| | $h_{FE(2)}$ | $V_{CE}$=5V,$I_C$=500mA | | 30 | | | |
| **Collector-emitter saturation voltage** | $V_{CE(sat)}$ | $I_C$=500mA,$I_B$=50mA | | | | 1 | V |
| **Base-emitter voltage** | $V_{BE}$ | $V_{CE}$=5V,$I_C$=150mA | | | | 1.5 | V |
| **Transition frequency** | $f_T$ | $V_{CE}$=5V,$I_C$=150mA | | | 140 | | MHz |
| **Collector output capacitance** | $C_{ob}$ | $V_{CB}$=10V,$I_E$=0,f=1MHz | | | 12 | | pF |

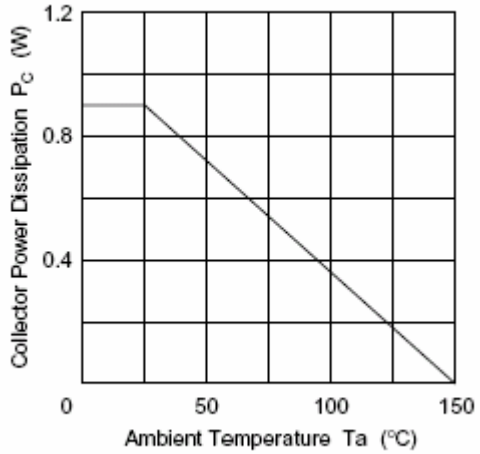
**CLASSIFICATION OF $h_{FE(1)}$**

| Rank | | B | C | D |
|---|---|---|---|---|
| Range | 2SD667 | 60-120 | 100-200 | 160-320 |
| | 2SD667A | 60-120 | 100-200 | |

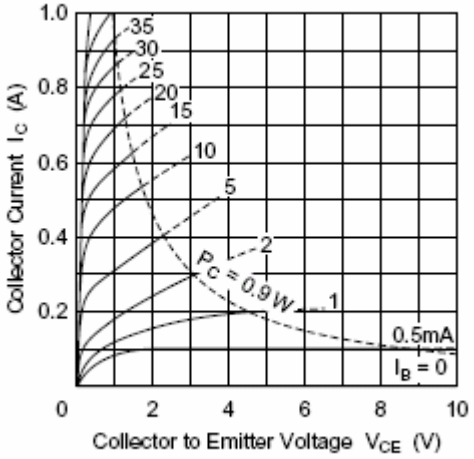
# Typical Characteristics



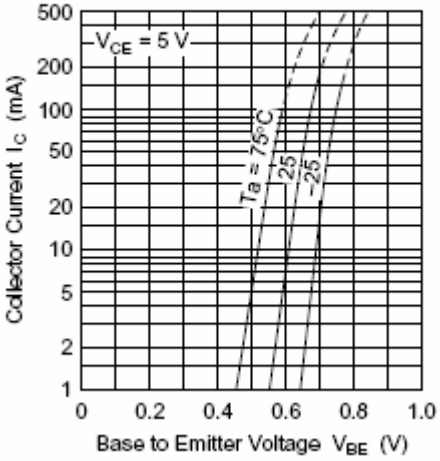
Maximum Collector Dissipation Curve



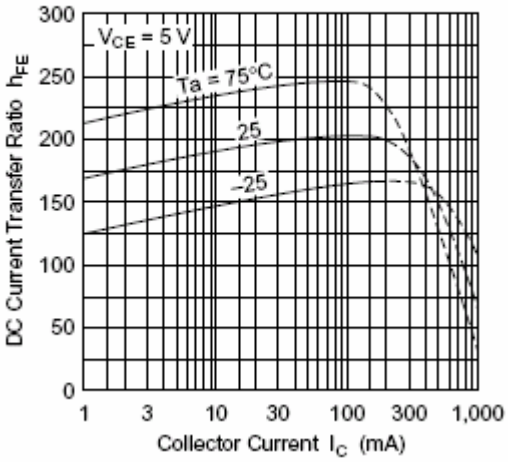

Typical Output Characteristics



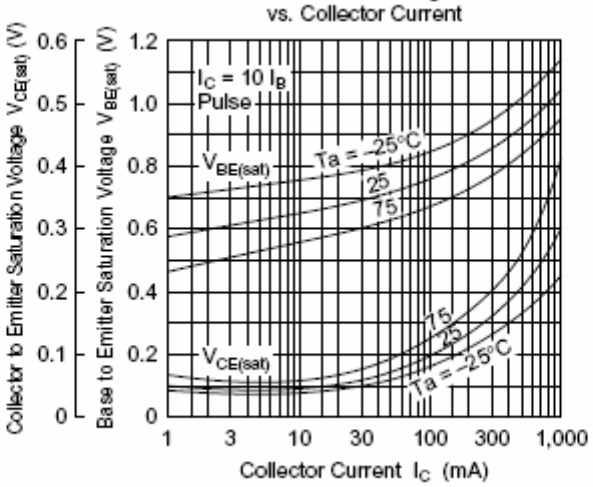

Typical Transfer Characteristics



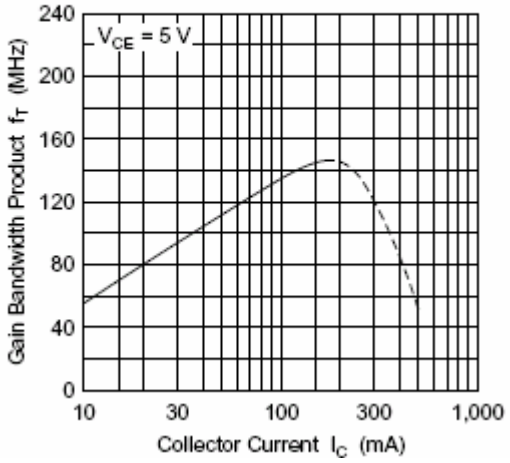

DC Current Transfer Ratio vs. Collector Current



Saturation Voltage
vs. Collector Current




Gain Bandwidth Product
vs. Collector Current




Collector Output Capacitance vs.
Collector to Base Voltage