



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## SOT-23 Plastic-Encapsulate Transistors

### 2SC2712 TRANSISTOR (NPN)

#### FEATURE

- Low Noise: NF=1 dB (Typ),10dB(MAX)
- Complementary to 2SA1162

#### SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

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

| Symbol    | Parameter                     | Value   | Units              |
|-----------|-------------------------------|---------|--------------------|
| $V_{CB0}$ | Collector-Base Voltage        | 60      | V                  |
| $V_{CE0}$ | Collector-Emitter Voltage     | 50      | V                  |
| $V_{EB0}$ | Emitter-Base Voltage          | 5       | V                  |
| $I_C$     | Collector Current -Continuous | 150     | mA                 |
| $P_C$     | Collector Power Dissipation   | 150     | mW                 |
| $T_J$     | Junction Temperature          | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature           | -55-150 | $^{\circ}\text{C}$ |

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

| Parameter                            | Symbol        | Test conditions                                                                    | MIN | TYP | MAX  | UNIT          |
|--------------------------------------|---------------|------------------------------------------------------------------------------------|-----|-----|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}$ , $I_E=0$                                                     | 60  |     |      | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}$ , $I_B=0$                                                         | 50  |     |      | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}$ , $I_C=0$                                                     | 5   |     |      | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=60\text{V}$ , $I_E=0$                                                      |     |     | 0.1  | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5\text{V}$ , $I_C=0$                                                       |     |     | 0.1  | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=6\text{V}$ , $I_C=2\text{mA}$                                              | 70  |     | 700  |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=100\text{mA}$ , $I_B=10\text{mA}$                                             |     | 0.1 | 0.25 | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=10\text{V}$ , $I_C=1\text{mA}$                                             | 80  |     |      | MHz           |
| Output capacitance                   | $C_{ob}$      | $V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$                                    |     | 2.0 | 3.5  | pF            |
| Noise Figure                         | NF            | $V_{CE}=6\text{V}$ , $I_C=0.1\text{mA}$ , $f=1\text{kHz}$ , $R_g=10\text{k}\Omega$ |     | 1.0 | 10   | dB            |

#### CLASSIFICATION OF $h_{FE}$

|         |        |         |         |         |
|---------|--------|---------|---------|---------|
| Rank    | O      | Y       | GR      | BL      |
| Range   | 70-140 | 120-240 | 200-400 | 350-700 |
| Marking | LO     | LY      | LG      | LL      |

# Typical Characteristics

2SC2712



