



SOT-563 Plastic-Encapsulate Transistors

NST3946 DUAL TRANSISTOR (PNP+NPN)

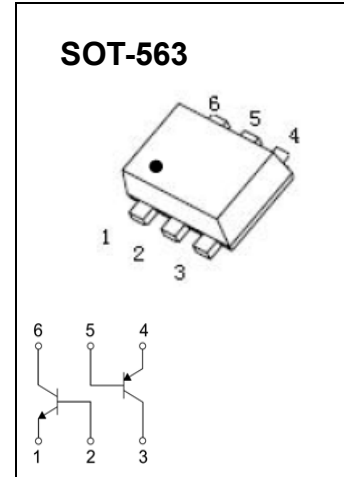
DESCRIPTION

It is designed for general purpose amplifier applications . By putting two Discrete devices in one package , this device is ideal for low – power surface mount applications where board space is at a premium.

FEATURES

- Low $V_{CE(sat)}$
- Simplifies Circuit Design
- Reduces Board Space
- Reduces Component Count

Marking: 46



PNP 3906 Absolute maximum ratings ($T_a=25^\circ\text{C}$)

| Symbol | Parameter | Value | Units |
|-----------------|--------------------------------------------------|----------|---------------------------|
| V_{CBO} | Collector-Base Voltage | -40 | V |
| V_{CEO} | Collector-Emitter Voltage | -40 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current | -200 | mA |
| P_C | Collector Power Dissipation | 150 | mW |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient | 833 | $^\circ\text{C}/\text{W}$ |
| T_J, T_{stg} | Operation Junction and Storage Temperature Range | -55~+150 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---------------------------------------------------------|-------|-----|-------|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=-10\mu\text{A}, I_E=0$ | -40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=-1\text{mA}, I_B=0$ | -40 | | | 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} | $V_{CB}=-30\text{V}, I_E=0$ | | | -0.05 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=-5\text{V}, I_C=0$ | | | -0.05 | μA |
| DC current gain | h_{FE} | $V_{CE}=-1\text{V}, I_C=-0.1\text{mA}$ | 60 | | | |
| | | $V_{CE}=-1\text{V}, I_C=-1\text{mA}$ | 80 | | | |
| | | $V_{CE}=-1\text{V}, I_C=-10\text{mA}$ | 100 | | 300 | |
| | | $V_{CE}=-1\text{V}, I_C=-50\text{mA}$ | 60 | | | |
| | | $V_{CE}=-1\text{V}, I_C=-100\text{mA}$ | 30 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-10\text{mA}, I_B=-1\text{mA}$ | | | -0.25 | V |
| | | $I_C=-50\text{mA}, I_B=-5\text{mA}$ | | | -0.4 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=-10\text{mA}, I_B=-1\text{mA}$ | -0.65 | | -0.85 | V |
| | | $I_C=-50\text{mA}, I_B=-5\text{mA}$ | | | -0.95 | V |
| Transition frequency | f_T | $V_{CE}=-20\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$ | 250 | | | MHz |
| Output capacitance | C_{ob} | $V_{CB}=-5\text{V}, I_E=0, f=1\text{MHz}$ | | | 4.5 | pF |

