

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

2SC3927

DESCRIPTION

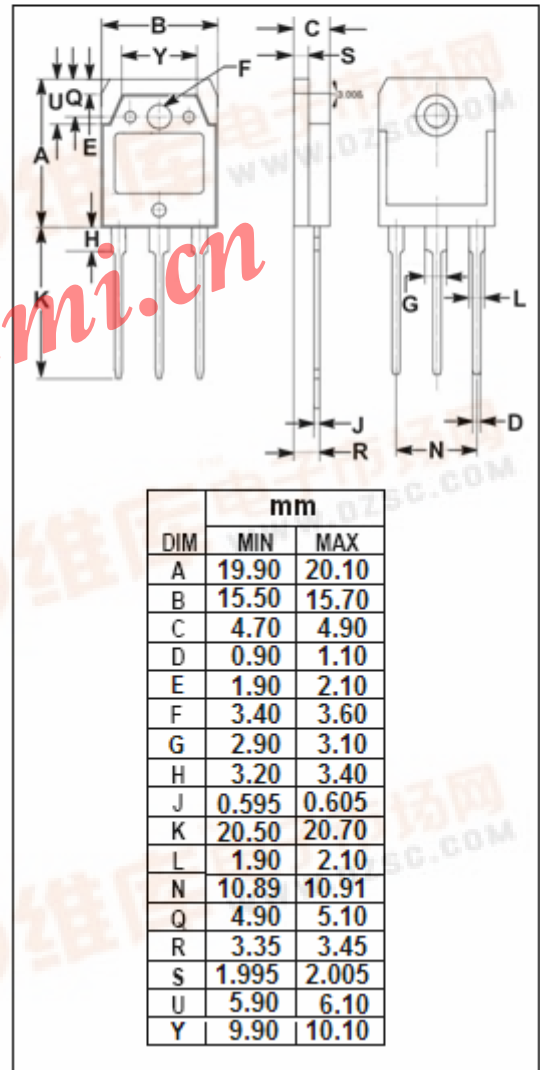
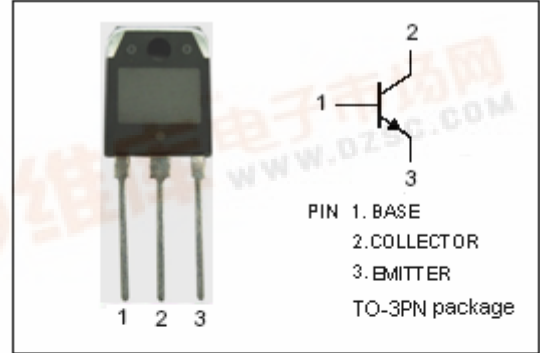
- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 550V(\text{Min})$
- High Switching Speed
- High Reliability

APPLICATIONS

- Designed for switching regulator and general purpose applications.

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 900 | V |
| V_{CEO} | Collector-Emitter Voltage | 550 | V |
| V_{EBO} | Emitter-Base voltage | 7 | V |
| I_C | Collector Current-Continuous | 10 | A |
| I_{CM} | Collector Current-Peak | 15 | A |
| I_B | Base Current-Continuous | 5 | A |
| P_C | Collector Power Dissipation @ $T_C=25^\circ\text{C}$ | 120 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|--|-----|------|-----|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=10\text{mA}$; $I_B=0$ | 550 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=5\text{A}$; $I_B=1\text{A}$ | | | 0.5 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=5\text{A}$; $I_B=1\text{A}$ | | | 1.2 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=800\text{V}$; $I_E=0$ | | | 0.1 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=7\text{V}$; $I_C=0$ | | | 0.1 | mA |
| h_{FE} | DC Current Gain | $I_C=5\text{A}$; $V_{CE}=4\text{V}$ | 10 | | 28 | |
| f_T | Current-Gain—Bandwidth Product | $I_E=-1\text{A}$; $V_{CE}=12\text{V}$ | | 6 | | MHz |
| C_{OB} | Output Capacitance | $I_E=0$; $V_{CB}=10\text{V}$; $f_{test}=1.0\text{MHz}$ | | 105 | | pF |

Switching times

| | | | | | | |
|-----------|--------------|--|--|--|-----|---------------|
| t_{on} | Turn-on Time | $I_C=5\text{A}$, $I_{B1}=0.75\text{A}$; $I_{B2}=-1.5\text{A}$ $R_L=50\Omega$; $V_{CC}=250\text{V}$ | | | 1.0 | μs |
| t_{stg} | Storage Time | | | | 5.0 | μs |
| t_f | Fall Time | | | | 0.5 | μs |