

Preliminary Specification

RCL Semiconductors Ltd.



NPN Medium Power Transistor

T8050

GENERAL DESCRIPTION

T8050 is NPN medium power transistor fabricated on the epitaxial silicon wafers. It is complimentary to T8550. It can be widely used in audio amplifiers and switching.

• FEATURES

- Complimentary to T8550
- Collector Current : $I_c = 1.5A$
- Collector-emitter voltage: $V_{ce0} = 25V$
- Collector Power Dissipation: $P_c = 2W$ ($T_c = 25^\circ C$)

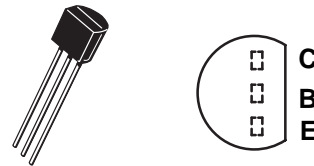
• APPLICATION AND PACKAGE

- Medium power switching and amplifier
- To-92

LAYOUT



TO92 PACKAGE DIAGRAM



Die Size : 600 X 600 μm^2
Coordinates of Pads' Center for :
Emitter (-41.0, -40.0)
Base (170, 180)

ABSOLUTE MAXIMUM RATING

| Symbol | Parameter | Rating | Units |
|-----------|-----------------------------|-----------|------------|
| V_{CB0} | Collector-Base Voltage | 40 | V |
| V_{CE0} | Collector-Emitter Voltage | 25 | V |
| V_{EB0} | Emitter -Base Voltage | 6 | V |
| I_C | Collector Current | 1.5 | A |
| P_C | Collector Power Dissipation | 1.0 | W |
| T_j | Junction Temperature | 150 | $^\circ C$ |
| T_{STG} | Storage Temperature | -65 ~ 150 | $^\circ C$ |

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, unless otherwise specified)

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|----------------------|--------------------------------------|-------------------------------------------------|------|------|------|------|
| BVCB0 | Collector-Base Breakdown Voltage | I _c =100μA, I _E =0 | 40 | | | V |
| BVCE0 | Collector- Emitter Breakdown Voltage | I _c =2mA, I _B =0 | 25 | | | V |
| BVEB0 | Emitter -Base Breakdown Voltage | I _E =100μA, I _C =0 | 6 | | | V |
| ICBO | Collector Cut-off Current | V _{CB} =35V, I _E =0 | | | 100 | nA |
| IEBO | Emitter Cut-off Current | V _{EB} =6V, I _C =0 | | | 100 | nA |
| h _{FE1} | DC Current Gain | V _{CE} =1V, I _C =5mA | 45 | | 300 | |
| h _{FE2} | | V _{CE} =1V, I _C =100mA | 85 | | | |
| h _{FE3} | | V _{CE} =1V, I _C =800mA | 40 | | | |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _c =800mA, I _B =80mA | | | 0.5 | V |
| V _{BE(sat)} | Emitter –Base Saturation Voltage | I _c =800mA, I _B =80mA | | | 1.2 | V |
| V _{BE(on)} | Base- Emitter on Voltage | V _{CE} =1V, I _C =10mA | | | 1.0 | V |
| CO _b | Output Capacitance | V _{CB} =10V, I _E =0, f=1MHz | | 9.0 | | pF |
| f _T | Current Gain Bandwidth Product | V _{CE} =10V, I _C =50mA | 100 | | | MHz |

hFE CLASSIFICATION

| Classification | B | C | D |
|----------------|----------|-----------|-----------|
| hFE | 85 ~ 160 | 120 ~ 200 | 160 ~ 300 |