# 2SC4964

Silicon NPN Epitaxial

HITACHI

ADE-208-005
1st. Edition

## Application

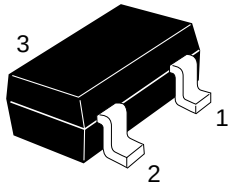
VHF / UHF RF switch

## Features

- Low Ron and high performance for RF switch.
- Capable of high density mounting.

## Outline

MPAK




1. Emitter
2. Base
3. Collector

Hitachi semiconductor

## Absolute Maximum Ratings (Ta = 25°C)

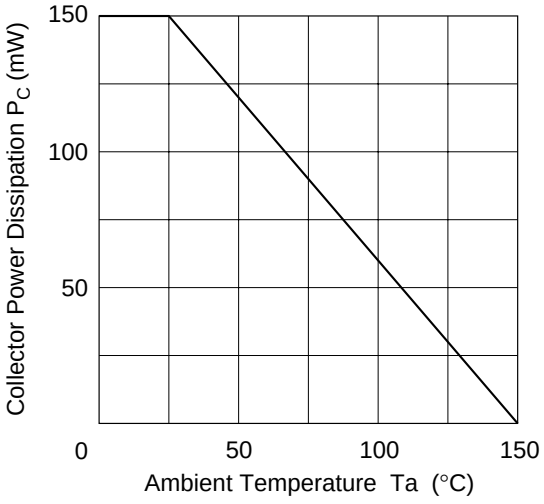
| Item | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | 12 | V |
| Collector to emitter voltage | $V_{CEO}$ | 8 | V |
| Emitter to base voltage | $V_{EBO}$ | 3 | V |
| Collector current | $I_C$ | 100 | mA |
| Collector power dissipation | $P_C$ | 150 | mW |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | °C |

## Electrical Characteristics (Ta = 25°C)

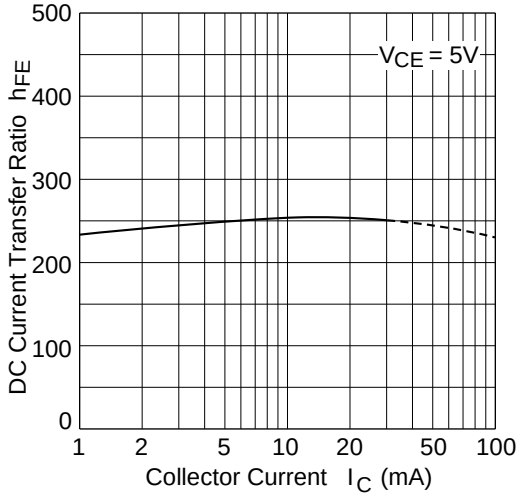
| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|---|---|---|---|---|---|---|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | 12 | — | — | V | $I_C$ = 10 µA, $I_E$ = 0 |
| Collector cutoff current | $I_{CBO}$ | — | — | 1 | µA | $V_{CB}$ = 10 V, $I_E$ = 0 |
| | $I_{CEO}$ | — | — | 1 | mA | $V_{CE}$ = 8 V, $R_{BE}$ = ∞ |
| Emitter cutoff current | $I_{EBO}$ | — | — | 10 | µA | $V_{EB}$ = 3 V, $I_C$ = 0 |
| DC current transfer ratio | $h_{FE}$ | 100 | 250 | 600 | | $V_{CE}$ = 5 V, $I_C$ = 5 mA |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | 200 | 300 | mV | $I_C$ = 80 mA, $I_B$ = 5 mA |
| Collector output capacitance | Cob | — | 1.2 | 1.6 | pF | $V_{CB}$ = 5 V, $I_E$ = 0, f = 1 MHz |
| On resistance | Ron | — | 2.0 | — | Ω | $I_B$ = 2.5 mA, f = 1 kHz |

Note: Marking is “YV–”.

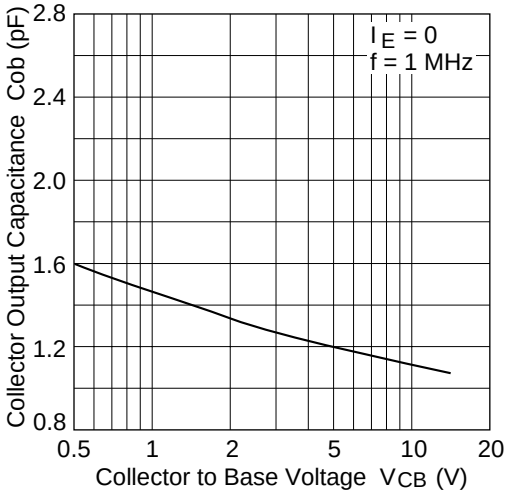
Maximum Collector Dissipation Curve



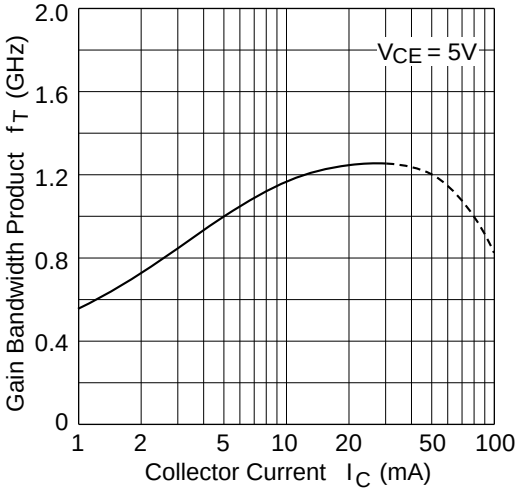

DC Current Transfer Ratio vs. Collector Current



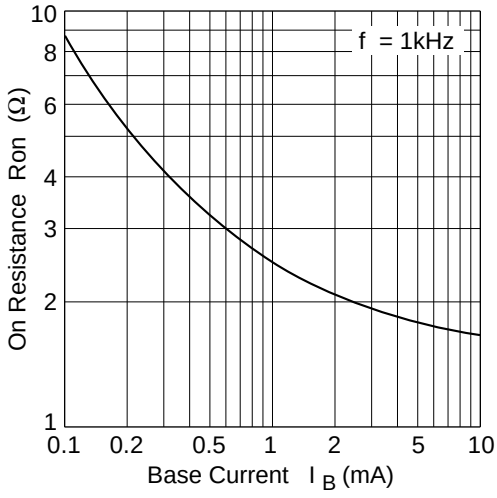

Collector Output Capacitance vs. Collector to Base Voltage



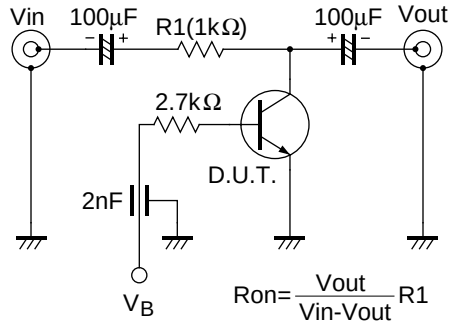

Gain Bandwidth Product vs. Collector Current



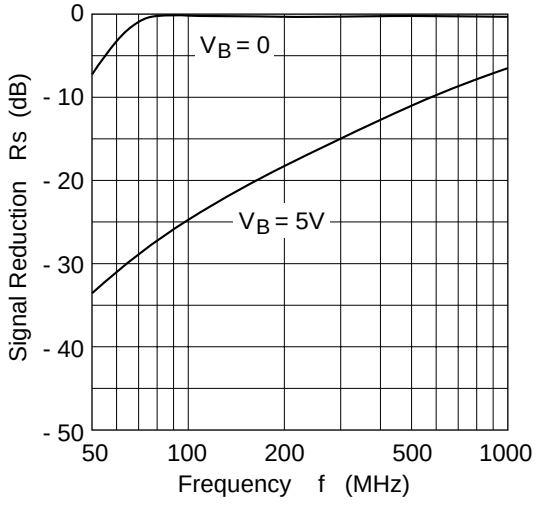
On Resistance vs. Base Current



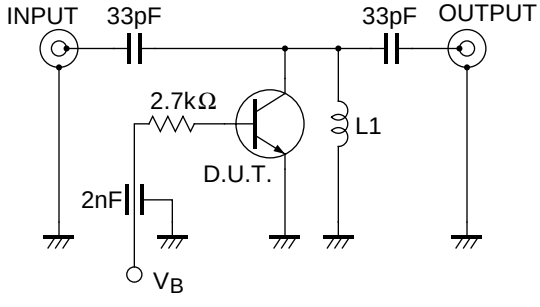

Ron test circuit




Signal Reduction vs. Frequency

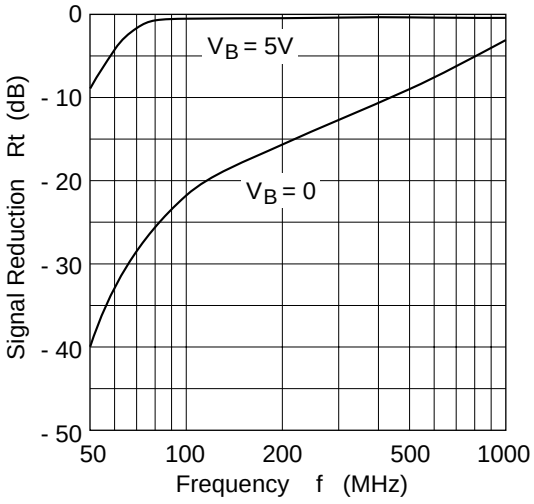



Signal Reduction test circuit

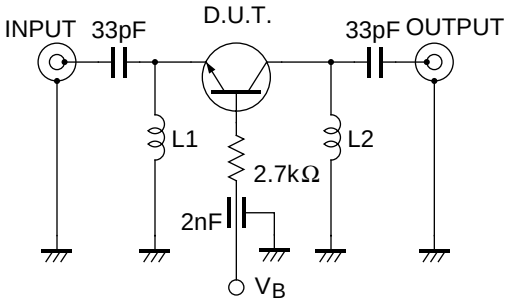



L1 : Inside dia ø 3 mm ,
ø 0.5 mm Enameled Copper Wire 7 Turns.

Signal Reduction vs. Frequency

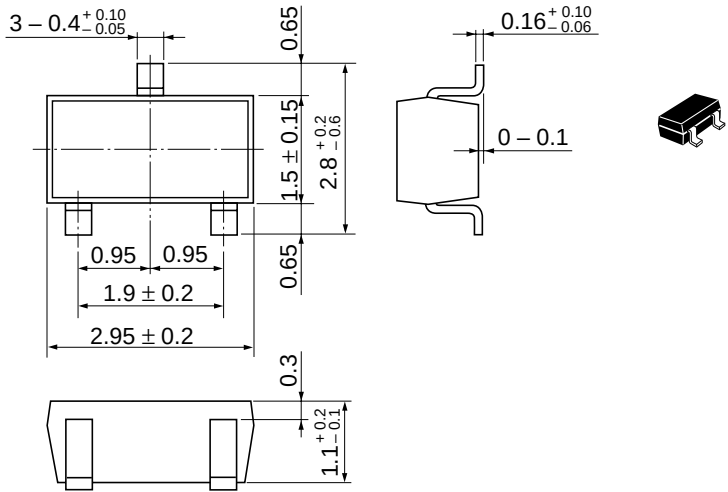



Signal Reduction test circuit




L1 , L2 : Inside dia ø 3 mm ,
ø 0.5 mm Enameled Copper Wire 7 Turns.

Unit: mm




| | |
|---|---|
| Hitachi Code | MPAK |
| JEDEC | — |
| EIAJ | Conforms |
| Weight (reference value) | 0.011 g |

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