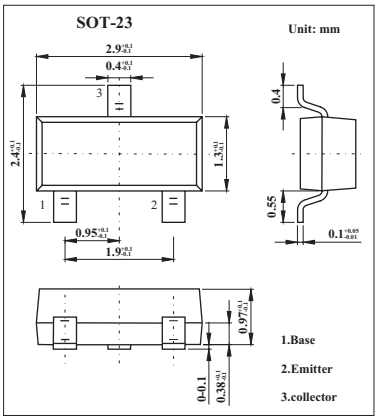
# NPN Silicon Epitaxia

# 2SD780




## ■ Features

- Micro package.
- High DC current gain. $h_{FE}$: 200TYP.($V_{CE}$=1.0V,$I_C$=50mA).

## ■ Absolute Maximum Ratings Ta = 25℃

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | 60 | V |
| Collector-emitter voltage | $V_{CEO}$ | 60 | V |
| Emitter-base voltage | $V_{EBO}$ | 5.0 | V |
| Collector current | $I_C$ | 300 | mA |
| Total power dissipation at 25℃ ambient temperature | $P_T$ | 200 | mW |
| Junction temperature | $T_j$ | 150 | ℃ |
| Storage temperature | $T_{stg}$ | -55 to +150 | ℃ |

## ■ Electrical Characteristics Ta = 25℃

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector cutoff current | $I_{CBO}$ | $V_{CB}$ = 50 V, $I_E$ = 0 | | | 100 | nA |
| Emitter cutoff current | $I_{EBO}$ | $V_{EB}$ = 5.0 V, $I_C$ = 0 | | | 100 | nA |
| DC current gain * | $h_{FE}$ | $V_{CE}$ = 1.0 V, $I_C$ = 50 mA | 110 | 200 | 400 | |
| Base to emitter voltage * | $V_{BE}$ | $V_{CE}$ = 6.0 V, $I_C$ = 10 mA | 600 | 645 | 700 | mV |
| Collector saturation voltage * | $V_{CE(sat)}$ | $I_C$ = 300 mA, $I_B$ = 30 mA | | 0.15 | 0.6 | V |
| Output capacitance | $C_{ob}$ | $V_{CB}$ = 6.0 V, $I_E$ = 0 , f = 1.0 MHz | | 7.0 | | pF |
| Gain bandwidth product | $f_T$ | $V_{CE}$ = 6.0 V, $I_E$ = -10 mA | | 140 | | MHz |

* Pulsed: PW ⩽ 350 μs, duty cycle ⩽ 2%

## ■ $h_{FE}$ Classification

| Marking | DW1 | DW2 | DW3 | DW4 | DW5 |
|---|---|---|---|---|---|
| hFE | 110～180 | 135～220 | 170～270 | 200～320 | 250～400 |