

通用三極管

General Purpose Transistors

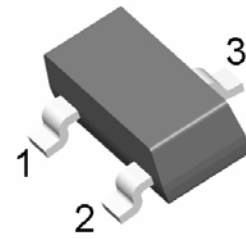
General Purpose Transistors 通用三極管

FHT807-16/25/40

DESCRIPTION & FEATURES 概述及特點

Excellent h_{FE} Linearity h_{FE} 線性特性極好

SOT-23



PIN ASSIGNMENT 引腳說明

| PIN NAME 管腳符號 | PIN NUMBER 引腳序號 | FUNCTION 功能 |
|------------------|-----------------|----------------|
| | SOT-23 | |
| B | 1 | BASE |
| E | 2 | EMITTER |
| C | 3 | COLLECTOR |

MAXIMUM RATINGS($T_a=25^\circ\text{C}$) 最大額定值

| CHARACTERISTIC 特性參數 | Symbol 符號 | Rating 額定值 | Unit 單位 |
|---------------------------------------|-----------|------------|---------|
| Collector-Emitter Voltage 集電極-發射極電壓 | V_{CEO} | -45 | Vdc |
| Collector-Base Voltage 集電極-基極電壓 | V_{CBO} | -50 | Vdc |
| Emitter-Base Voltage 發射極-基極電壓 | V_{EBO} | -5.0 | Vdc |
| Collector Current—Continuous 集電極電流-連續 | I_C | -500 | mAdc |

THERMAL CHARACTERISTICS 熱特性

| CHARACTERISTIC 特性參數 | Symbol 符號 | Max 最大值 | Unit 單位 |
|---|---------------------|-------------------|---------------------------|
| Total Device Dissipation 總耗散功率 FR-5 Board(1) ($T_A=25^\circ\text{C}$ 環境溫度= 25°C) | P_D | 225 | mW |
| Derate above 25°C 超過 25°C 遞減 | | 1.8 | mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient 熱阻 | R_{JA} | 556 | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation Alumina Substrate, (2) $T_A=25^\circ\text{C}$ 總耗散功率 氧化鋁襯底 | P_D | 300 | mW |
| Derate above 25°C 超過 25°C 遞減 | | 2.4 | mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient 熱阻 | R_{JA} | 417 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature 結溫和儲存溫度 | $T_j,$ T_{stg} | 150, -55 ~ 150 | $^\circ\text{C}$ |

DEVICE MARKING 打標

FHT807-16=5A (100~250), FHT807-25=5B (160~400), FHT807-40=5C (250~600)

ELECTRICAL CHARACTERISTICS 電特性

($T_A=25^\circ\text{C}$ unless otherwise noted 如無特殊說明, 溫度為 25°C)

| Characteristic 特性參數 | Symbol 符號 | Test Condition 測試條件 | Min 最小值 | Type 典型值 | Max 最大值 | Unit 單位 |
|---|---------------|---|---------|----------|---------|---------|
| Collector Cutoff Current 集電極截止電流 | I_{CBO} | $V_{CB} = -20\text{Vdc}$ | — | — | -100 | nAdc |
| Collector-Emitter Breakdown Voltage (3) 集電極-發射極擊穿電壓 | $V_{(BR)CEO}$ | $I_C = -10\text{ mAdc}, I_B = 0$ | -45 | — | — | Vdc |
| Collector-Base Breakdown Voltage 集電極-基極擊穿電壓 | $V_{(BR)CBO}$ | $I_C = -10\ \mu\text{Adc}, I_E = 0$ | -50 | — | — | Vdc |
| Emitter-Base Breakdown Voltage 發射極-基極擊穿電壓 | $V_{(BR)EBO}$ | $I_E = -1.0\ \mu\text{Adc}, I_C = 0$ | -5.0 | — | — | Vdc |
| DC Current Gain 直流電流增益 | $h_{FE}(1)$ | $I_C = -100\text{ mAdc}, V_{CE} = -1.0\text{Vdc}$ | 100 | — | 600 | — |
| | $h_{FE}(2)$ | $I_C = -500\text{ mAdc}, V_{CE} = -1.0\text{Vdc}$ | 40 | — | — | — |
| Collector-Emitter Saturation Voltage 集電極-發射極飽和壓降 | $V_{CE(sat)}$ | $I_C = -500\text{ mAdc}, I_B = -50\text{ mAdc}$ | — | — | -0.7 | Vdc |

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|---|--------------|---|-----|---|------|-----|
| Base-Emitter On Voltage 基極-發射極導通電壓 | $V_{BE(on)}$ | $I_C=-500mA_{dc}$, $V_{CE}=-1.0V_{dc}$ | — | — | -1.2 | Vdc |
| Current-Gain-Bandwidth Product 電流增益-帶寬乘積 | f_T | $I_C=-10mA_{dc}$, $V_{CE}=-5.0V_{dc}$, $f=100MHz$ | 100 | — | — | MHz |
| Output Capacitance 輸出電容 | C_{obo} | $V_{CB}=-10V_{dc}$, $I_E=0$, $f=1.0MHz$ | — | — | 10 | pF |

1. FR-5=1.0×0.75×0.062 in.
2. Alumina=0.4×0.3×0.024 in. 99.5% alumina.
3. Pulse Width ≤ 300 μs; Duty Cycle ≤ 2.0%.