

# 通用三極管

## General Purpose Transistors

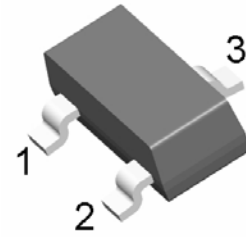
### General Purpose Transistors 通用三極管

### 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<br>管腳符號 | PIN NUMBER 引腳序號 | FUNCTION<br>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<br>FR-5 Board(1) ( $T_A=25^\circ\text{C}$ 環境溫度= $25^\circ\text{C}$ ) | $P_D$               | 225               | mW                        |
| Derate above $25^\circ\text{C}$ 超過 $25^\circ\text{C}$ 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) $T_A=25^\circ\text{C}$<br>總耗散功率 氧化鋁襯底               | $P_D$               | 300               | mW                        |
| Derate above $25^\circ\text{C}$ 超過 $25^\circ\text{C}$ 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  | $T_j,$<br>$T_{stg}$ | 150,<br>-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  $25^\circ\text{C}$ )

| 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     |

## General Purpose Transistors 通用三極管

## FHT807-16/25/40

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