Ordering number: EN3870

SANYO

No.3870

# 2SA1823

PNP Epitaxial Planar Silicon Transistor

## 20V/8A Switching Applications

### Features

- Adoption of MBIT process.
- Low saturation voltage.
- Fast switching speed.
- Large current capacity.
- It is possible to make appliances more compact because it's height on board is 9.5mm.
- Meets radial taping.

**Absolute Maximum Ratings** at Ta = 25°C

| | | | unit |
|---|---|---|---|
| Collector-to-Base Voltage | $V_{CBO}$ | −25 | V |
| Collector-to-Emitter Voltage | $V_{CEO}$ | −20 | V |
| Emitter-to-Base Voltage | $V_{EBO}$ | −5 | V |
| Collector Current | $I_C$ | −8 | A |
| Collector Current (Pulse) | $I_{CP}$ | −12 | A |
| Base Current | $I_B$ | −1.5 | A |
| Collector Dissipation | $P_C$ | 1.5 | W |
| Junction Temperature | Tj | 150 | °C |
| Storage Temperature | Tstg | −55 to +150 | °C |

**Electrical Characteristics** at Ta = 25°C

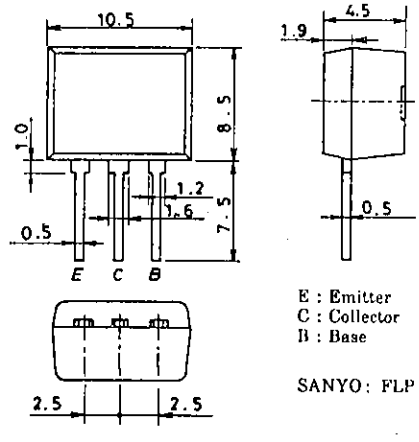
| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}=-20V, I_E=0$ | | | −1 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}=-4V, I_C=0$ | | | −1 | μA |
| DC Current Gain | $h_{FE}(1)$ | $V_{CE}=-2V, I_C=-500mA$ | 100* | | 400* | |
| | $h_{FE}(2)$ | $V_{CE}=-2V, I_C=-6A$ | 60 | | | |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}=-2V, I_C=-500mA$ | | 200 | | MHz |

Continued on next page.

* : The 2SA1823 is classified by 500mA $h_{FE}$ as follows :

| | | |
|---|---|---|
| 100 R 200 | 140 S 280 | 200 T 400 |

**Package Dimensions** 2084
(unit : mm)



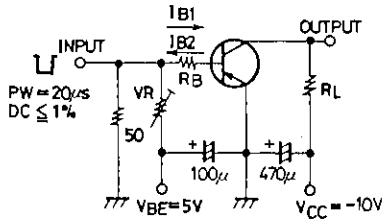

E : Emitter
C : Collector
B : Base

SANYO : FLP

Continued from preceding page.

| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| C-E Saturation Voltage | $V_{CE(sat)}$ | $I_C=-5A, I_B=-250mA$ | | $-220$ | $-400$ | mV |
| B-E Saturation Voltage | $V_{BE(sat)}$ | $I_C=-5A, I_B=-250mA$ | | $-1$ | $-1.3$ | V |
| Output Capacitance | $C_{ob}$ | $V_{CB}=-10V, f=1MHz$ | | 85 | | pF |
| C-B Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=-10\mu A, I_E=0$ | $-25$ | | | V |
| C-E Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=-1mA, R_{BE}=\infty$ | $-20$ | | | V |
| E-B Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=-10\mu A, I_C=0$ | $-5$ | | | V |
| Turn-on Time | $t_{on}$ | See specified Test Circuit. | | 30 | | ns |
| Storage Time | $t_{stg}$ | 〃 | | 200 | | ns |
| Fall Time | $t_f$ | 〃 | | 15 | | ns |

**Switching Time Test Circuit**




$20I_B1=-20I_B2=I_C=-5A$

Unit (resistance: Ω, capacitance: F)