



2SA1815

FM, RF, MIX, IF Amplifier, High-Frequency General-Purpose Amplifier Applications

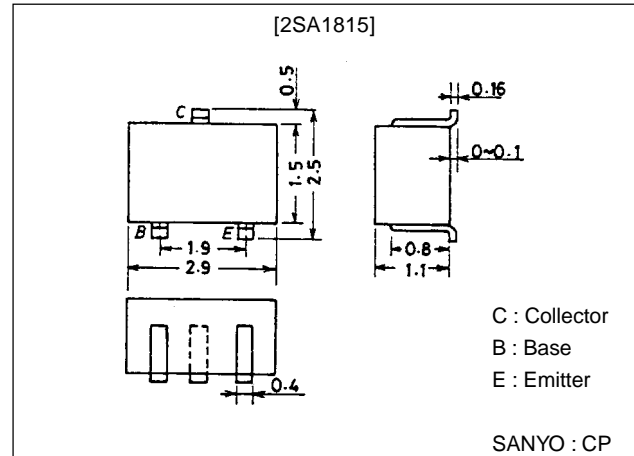
Features

- High power gain : PG=25dB (f=100MHz).
- High cutoff frequency ; $f_T=750\text{MHz}$ typ.
- Low collector-to-emitter saturation voltage.
- Complementary pair with the 2SC4432.

Package Dimensions

unit:mm

2018A



Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CB0} | | -15 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | -12 | V |
| Emitter-to-Base Voltage | V_{EBO} | | -3 | V |
| Collector Current | I_C | | -50 | mA |
| Collector Dissipation | P_C | | 250 | mW |
| Junction Temperature | T_J | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|---|---------|------|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=-12\text{V}, I_E=0$ | | | -0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=-2\text{V}, I_C=0$ | | | -0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=-10\text{V}, I_C=-5\text{mA}$ | 60* | | 270* | |
| Gain-Bandwidth Product | f_T | $V_{CE}=-10\text{V}, I_C=-5\text{mA}$ | | 750 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=-10\text{V}, f=1\text{MHz}$ | | 1.2 | 1.6 | pF |
| Reverse Transfer Capacitance | C_{re} | $V_{CB}=-10\text{V}, f=1\text{MHz}$ | | 0.9 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-10\text{mA}, I_B=-1\text{mA}$ | | -0.1 | -0.3 | V |
| Power Gain | PG | $V_{CE}=-10\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$ | | 25 | | dB |

* : The 2SA1815 is classified by 5mA h_{FE} as follows :

| | | | | | | | | |
|----|---|-----|----|---|-----|-----|---|-----|
| 60 | 3 | 120 | 90 | 4 | 180 | 135 | 5 | 270 |
|----|---|-----|----|---|-----|-----|---|-----|

Marking : JS

 h_{FE} rank : 3, 4, 5

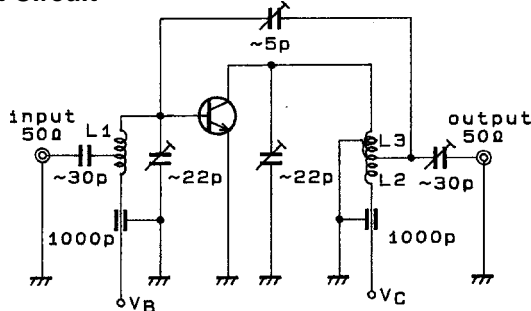
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SANYO Electric Co., Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

PG Test Circuit



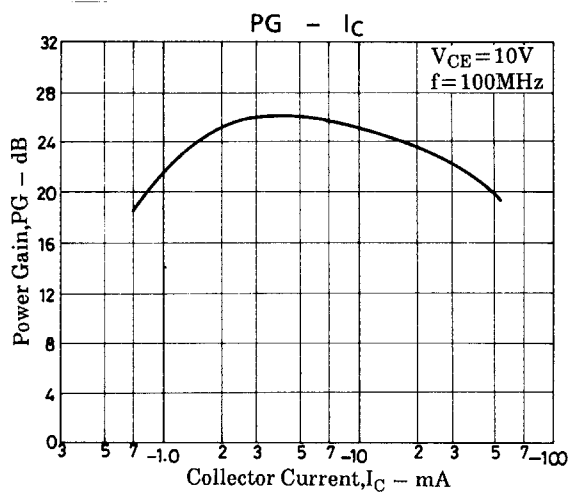
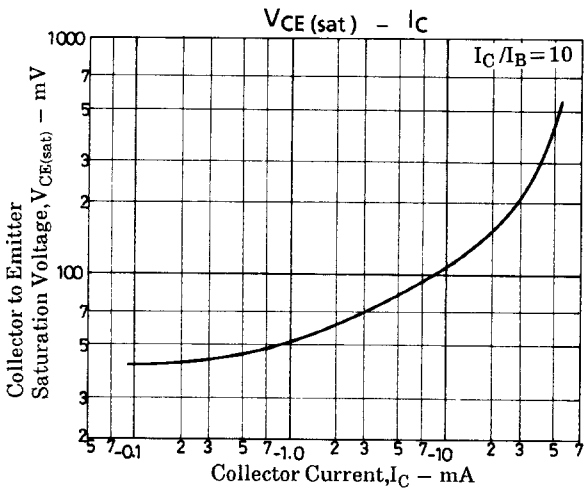
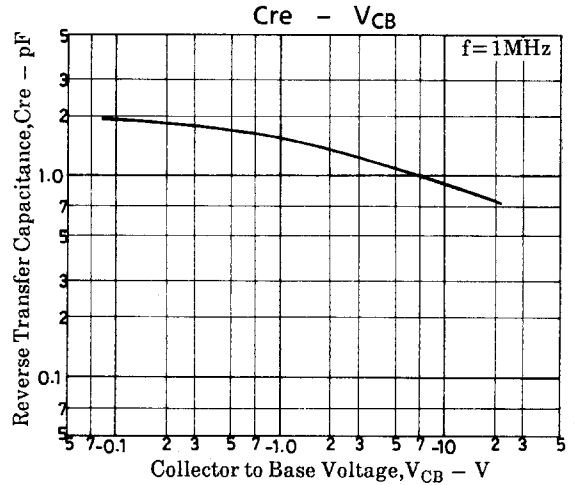
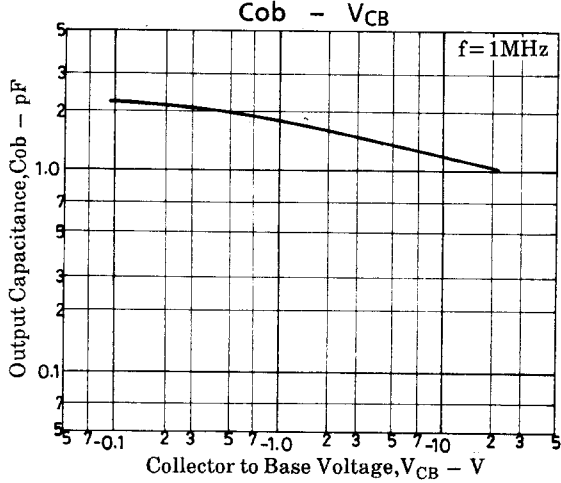
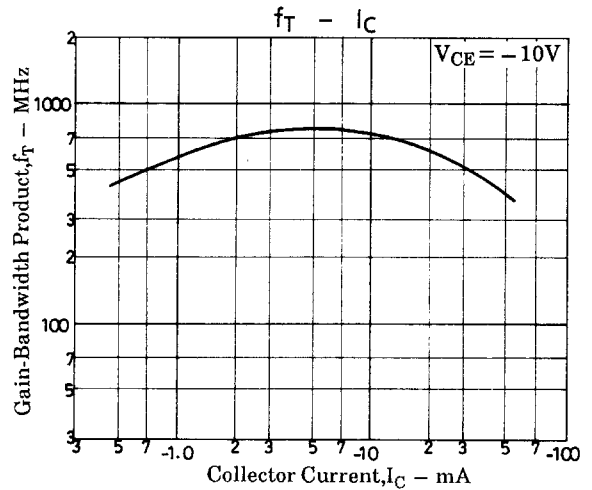
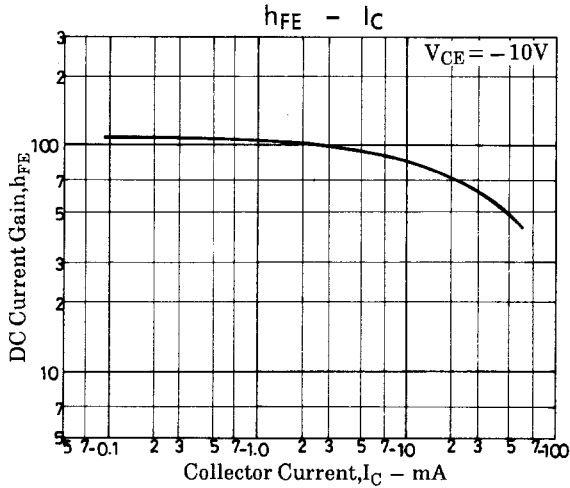
Unit (capacitance : F)

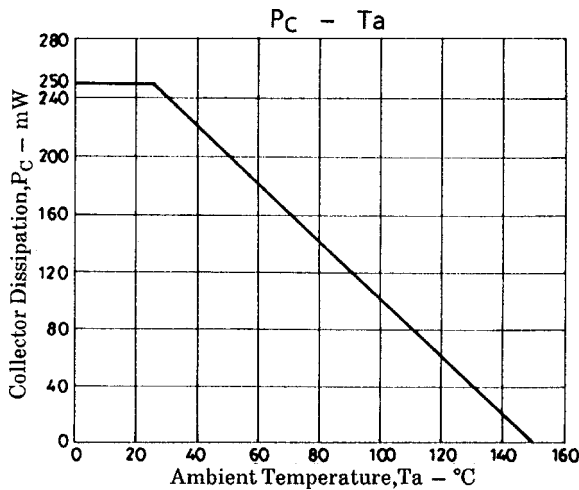
A01651

L1 : 1mmϕ plated wire 10mmϕ 5T, pitch 15mm, tap : 2T from base side

L2 : 1mmϕ plated wire 10mmϕ 7T, pitch 10mm, tap : 2T from V_C side.

L3 : 1mmϕ plated wire 10mmϕ 3T, pitch 10mm





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