



2SA1518/2SC3912

Switching Applications (With Bias Resistance)

Application

- Switching circuits, inverters circuits, interface circuits, driver circuits.

Features

- On-chip bias resistance : $R1=10k\Omega$, $R2=10k\Omega$.
- Small-sized package : CP.
- Large current capacity : $I_C=500mA$.

() : 2SA1518

Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------|
| Collector-to-Base Voltage | V_{CB0} | | (-50) | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-50) | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-10) | V |
| Collector Current | I_C | | (-500) | mA |
| Peak Collector Current | I_{CP} | | (-800) | mA |
| Collector Dissipation | P_C | | 200 | mW |
| Junction Temperature | T_J | | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ C$ |

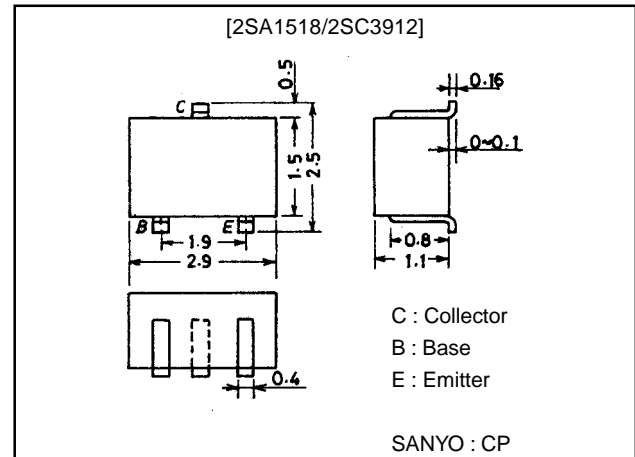
Electrical Characteristics at $T_a = 25^\circ C$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|--------------------------------|---------|--------|--------|------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=-40V, I_E=0$ | | | (-0.1) | μA |
| | I_{CEO} | $V_{CE}=-40V, I_B=0$ | | | (-0.5) | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=-5V, I_C=0$ | (-195) | (-250) | (-360) | μA |
| DC Current Gain | h_{FE} | $V_{CE}=-5V, I_C=-10mA$ | 50* | | | |
| Gain-Bandwidth Product | f_T | $V_{CE}=-10V, I_C=-5mA$ | | 250 | | MHz |
| | | | | (200) | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=-10V, f=1MHz$ | | 3.7 | | pF |
| | | | | (5.5) | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-20mA, I_B=-1mA$ | | (-0.1) | (-0.3) | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=-10\mu A, I_E=0$ | (-50) | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=-100\mu A, R_{BE}=\infty$ | (-50) | | | V |
| Input OFF-State Voltage | $V_{I(off)}$ | $V_{CE}=-5V, I_C=-100\mu A$ | (-0.8) | (-1.1) | (-1.5) | V |
| Input ON-State Voltage | $V_{I(on)}$ | $V_{CE}=-0.2V, I_C=-10mA$ | (-1.0) | (-2.0) | (-4.0) | V |
| Input Resistance | R1 | | 7 | 10 | 13 | k Ω |
| Resistance Ratio | R1/R2 | | 0.9 | 1.0 | 1.1 | |

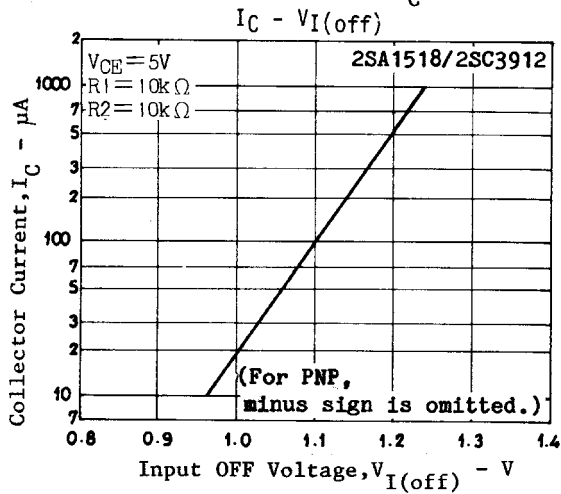
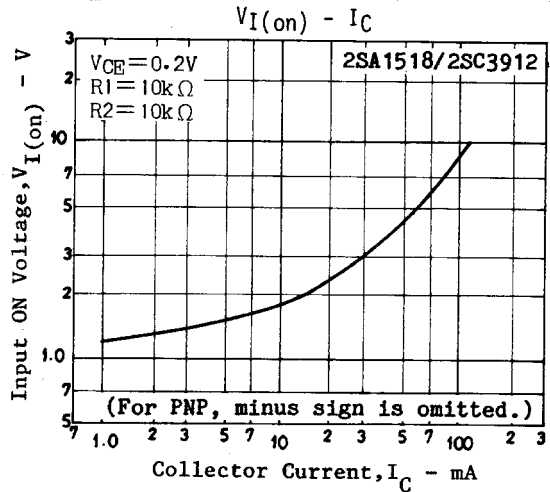
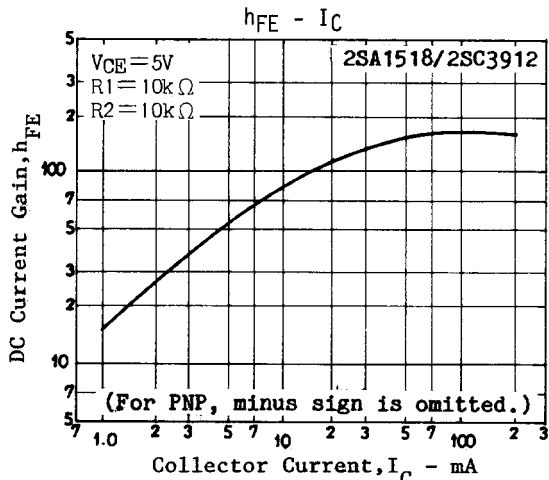
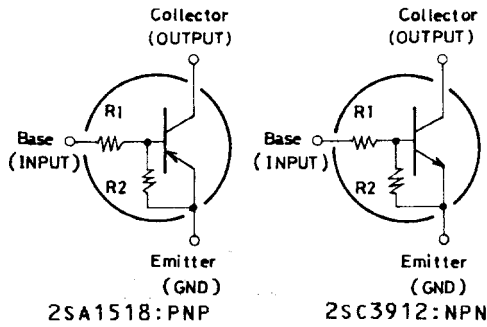
Package Dimensions

unit:mm

2018A



Electrical Connection



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