

2SA1123

Silicon PNP epitaxial planer type

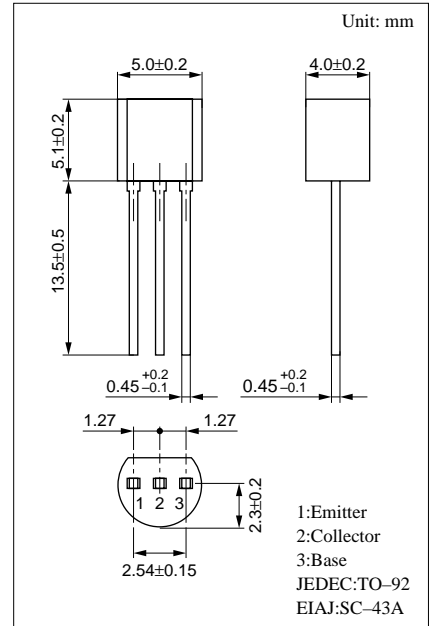
For low-frequency high breakdown voltage amplification
Complementary to 2SC2631

Features

- Satisfactory forward current transfer ratio h_{FE} collector current I_C characteristics.
- High collector to emitter voltage V_{CEO} .
- Small collector output capacitance C_{ob} .
- Makes up a complementary pair with 2SC2631, which is optimum for the pre-driver stage of a 20 to 40W output amplifier.

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Ratings | Unit |
|------------------------------|-----------|------------|------|
| Collector to base voltage | V_{CBO} | -150 | V |
| Collector to emitter voltage | V_{CEO} | -150 | V |
| Emitter to base voltage | V_{EBO} | -5 | V |
| Peak collector current | I_{CP} | -100 | mA |
| Collector current | I_C | -50 | mA |
| Collector power dissipation | P_C | 750 | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 ~ +150 | °C |



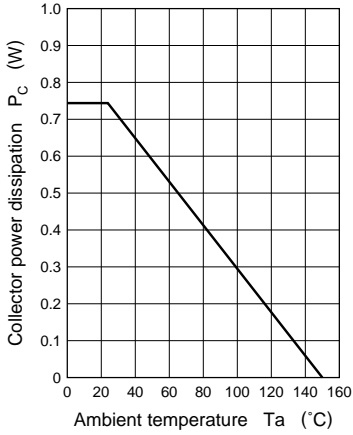
Electrical Characteristics (Ta=25°C)

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---------------|--|------|-----|-----|---------|
| Collector cutoff current | I_{CBO} | $V_{CB} = -100V, I_E = 0$ | | | -1 | μA |
| Collector to emitter voltage | V_{CEO} | $I_C = -0.1mA, I_B = 0$ | -150 | | | V |
| Emitter to base voltage | V_{EBO} | $I_E = -10\mu A, I_C = 0$ | -5 | | | V |
| Forward current transfer ratio | h_{FE}^* | $V_{CE} = -5V, I_C = -10mA$ | 130 | | 450 | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -30mA, I_B = -3mA$ | | | -1 | V |
| Transition frequency | f_T | $V_{CB} = -10V, I_E = 10mA, f = 200MHz$ | | 200 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = -10V, I_E = 0, f = 1MHz$ | | | 5 | pF |
| Noise voltage | NV | $V_{CE} = -10V, I_C = -1mA, G_v = 80dB$ $R_g = 100k\Omega, \text{Function} = \text{FLAT}$ | | 150 | 300 | mV |

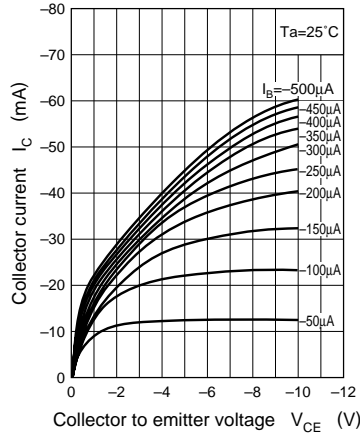
* h_{FE} Rank classification

| Rank | R | S | T |
|----------|-----------|-----------|-----------|
| h_{FE} | 130 ~ 220 | 185 ~ 330 | 260 ~ 450 |

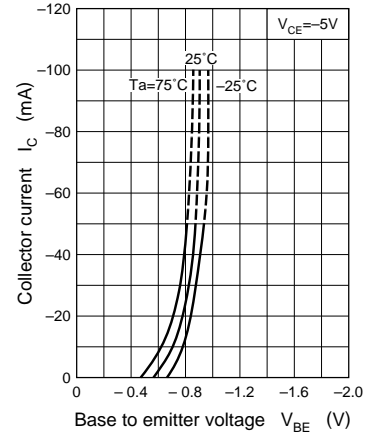
$P_C - T_a$



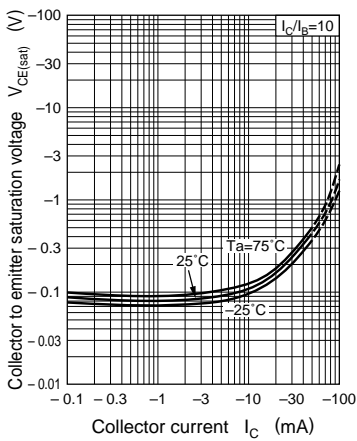
$I_C - V_{CE}$



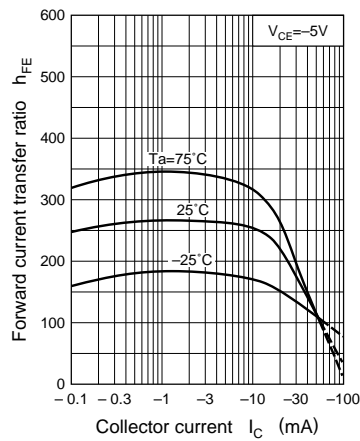
$I_C - V_{BE}$



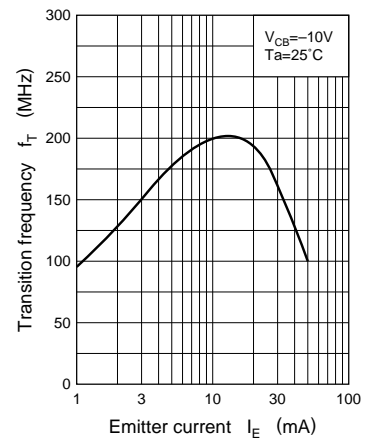
$V_{CE(sat)} - I_C$



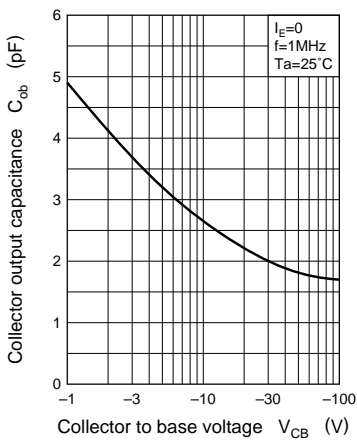
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



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