# 2SC2405, 2SC2406

## Silicon NPN epitaxial planer type

For low-frequency and low-noise amplification

Complementary to 2SA1034 and 2SA1035

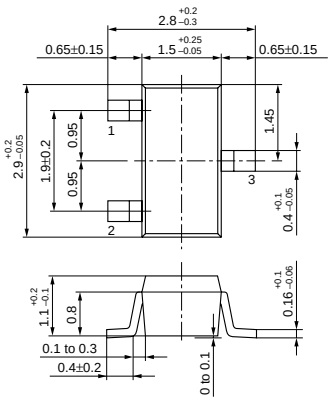
### Features

- Low noise voltage NV.
- High foward current transfer ratio $h_{FE}$.
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

### Absolute Maximum Ratings (Ta=25˚C)

| Parameter | | Symbol | Ratings | Unit |
|---|---|---|---|---|
| Collector to base voltage | 2SC2405 | $V_{CBO}$ | 35 | V |
| | 2SC2406 | | 55 | |
| Collector to emitter voltage | 2SC2405 | $V_{CEO}$ | 35 | V |
| | 2SC2406 | | 55 | |
| Emitter to base voltage | | $V_{EBO}$ | 5 | V |
| Peak collector current | | $I_{CP}$ | 100 | mA |
| Collector current | | $I_C$ | 50 | mA |
| Collector power dissipation | | $P_C$ | 200 | mW |
| Junction temperature | | $T_j$ | 150 | ˚C |
| Storage temperature | | $T_{stg}$ | –55 ~ +150 | ˚C |

Unit: mm




1:Base JEDEC:TO–236
2:Emitter EIAJ:SC–59
3:Collector Mini Type Package

Marking symbol : S(2SC2405)
T(2SC2406)

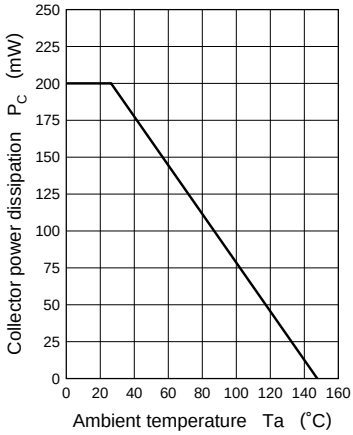
### Electrical Characteristics (Ta=25˚C)

| Parameter | | Symbol | Conditions | min | typ | max | Unit |
|---|---|---|---|---|---|---|---|
| Collector cutoff current | | $I_{CBO}$ | $V_{CB}$ = 10V, $I_E$ = 0 | | | 100 | nA |
| | | $I_{CEO}$ | $V_{CE}$ = 10V, $I_B$ = 0 | | | 1 | µA |
| Collector to base voltage | 2SC2405 | $V_{CBO}$ | $I_C$ = 10µA, $I_E$ = 0 | 35 | | | V |
| | 2SC2406 | | | 55 | | | |
| Collector to emitter voltage | 2SC2405 | $V_{CEO}$ | $I_C$ = 2mA, $I_B$ = 0 | 35 | | | V |
| | 2SC2406 | | | 55 | | | |
| Emitter to base voltage | | $V_{EBO}$ | $I_E$ = 10µA, $I_C$ = 0 | 5 | | | V |
| Forward current transfer ratio | | $h_{FE}$* | $V_{CB}$ = 5V, $I_E$ = –2mA | 180 | | 700 | |
| Collector to emitter saturation voltage | | $V_{CE(sat)}$ | $I_C$ = 100mA, $I_B$ = 10mA | | | 0.6 | V |
| Base to emitter voltage | | $V_{BE}$ | $V_{CE}$ = 1V, $I_C$ = 100mA | | 0.7 | 1 | V |
| Transition frequency | | $f_T$ | $V_{CB}$ = 5V, $I_E$ = –2mA, f = 200MHz | | 200 | | MHz |
| Noise voltage | | NV | $V_{CE}$ = 10V, $I_C$ = 1mA, $G_V$ = 80dB<br>$R_g$ = 100kΩ, Function = FLAT | | 110 | | mV |

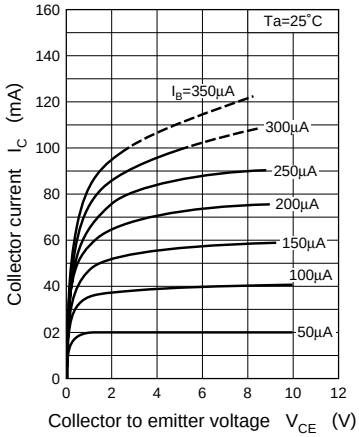
*$h_{FE}$ Rank classification

| Rank | | R | S | T |
|---|---|---|---|---|
| $h_{FE}$ | | 180 ~ 360 | 260 ~ 520 | 360 ~ 700 |
| Marking Symbol | 2SC2405 | SR | SS | ST |
| | 2SC2406 | TR | TS | TT |

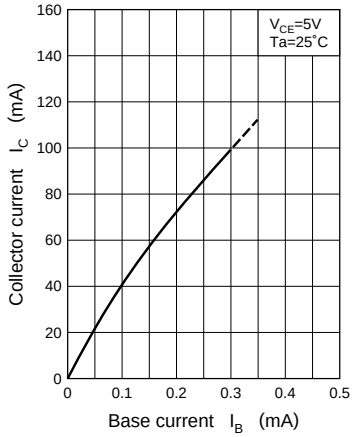
$P_C$ — Ta



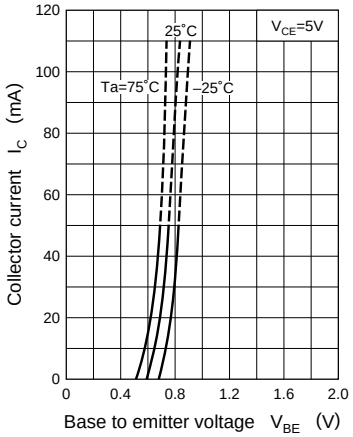

$I_C$ — $V_{CE}$



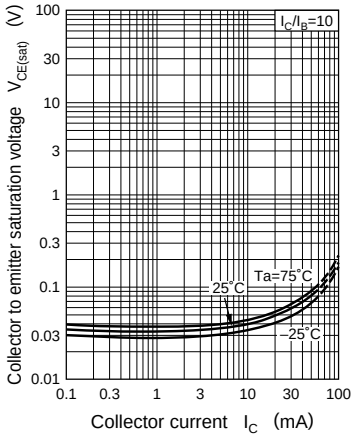

$I_C$ — $I_B$



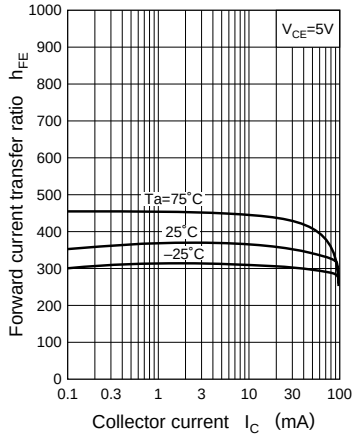

$I_C$ — $V_{BE}$



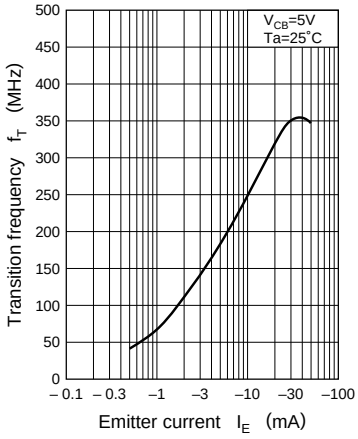

$V_{CE(sat)}$ — $I_C$



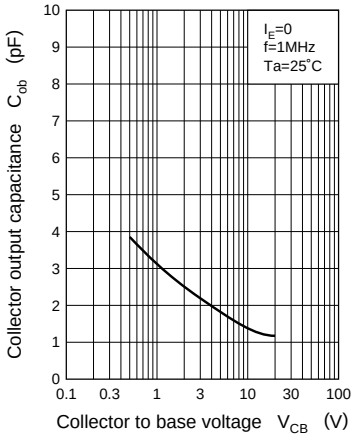

$h_{FE}$ — $I_C$



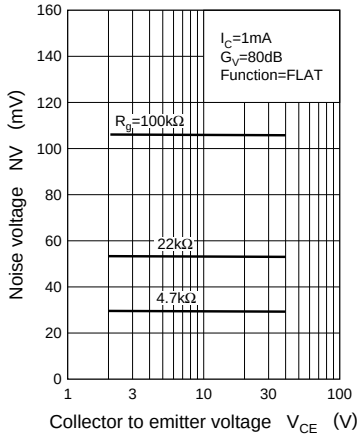

$f_T$ — $I_E$



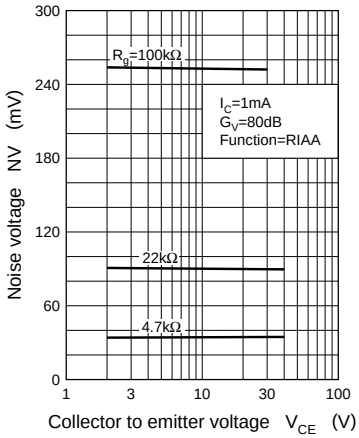

$C_{ob}$ — $V_{CB}$



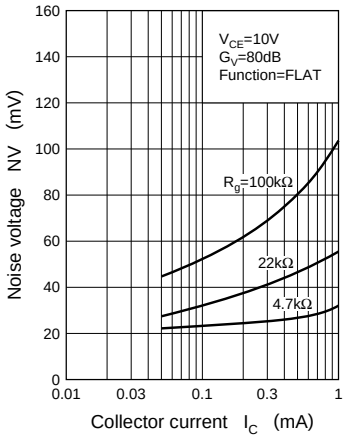

NV — $V_{CE}$



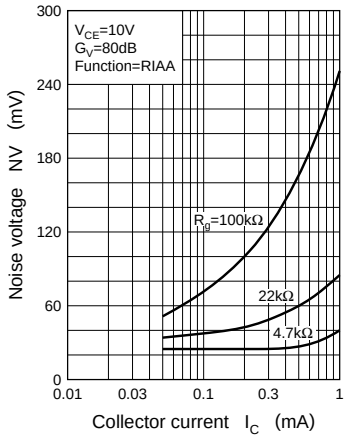
NV — $V_{CE}$



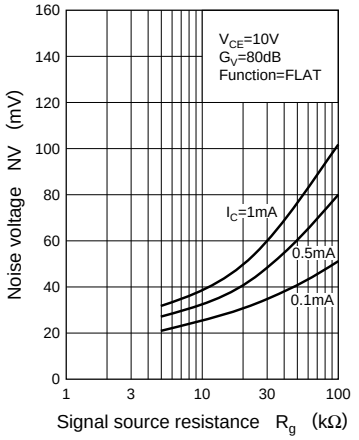

NV — $I_C$



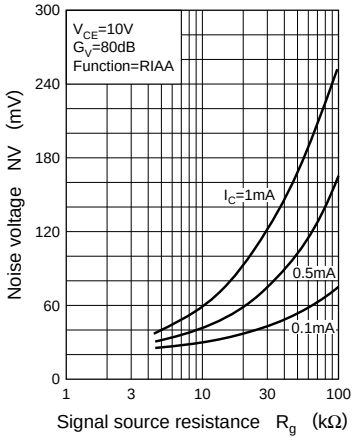

NV — $I_C$




NV — $R_g$




NV — $R_g$



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