

High-frequency Amplifier Transistor, RF switching (10V, 0.1A)

2SC4997 / 2SC4998

●Features

- 1) High transition frequency, typically $f_T=240\text{MHz}$
- 2) High h_{FE} .

●Packaging specifications and hFE

| Type | 2SC4997 | 2SC4998 |
|------------------------------|----------|----------|
| Package | EMT3 | UMT3 |
| hFE | 560~2700 | 560~2700 |
| Marking | CB | CB |
| Code | TL | T106 |
| Basic ordering unit (pieces) | 3000 | 3000 |

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|----------|------|
| Collector-base voltage | V_{CBO} | 15 | V |
| Collector-emitter voltage | V_{CEO} | 10 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 0.1 | A |
| Collector power dissipation | 2SC4997 | 0.15 | W |
| | 2SC4998 | 0.2 | |
| Junction temperature | T_J | 150 | °C |
| Storage temperature | T_{stg} | -55~+150 | °C |

●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|---------------|--|
| Collector-base breakdown voltage | BV_{CBO} | 10 | — | — | V | $I_C=1\text{mA}$ |
| Collector-emitter breakdown voltage | BV_{CEO} | 15 | — | — | V | $I_C=10\mu\text{A}$ |
| Emitter-base breakdown voltage | BV_{EBO} | 5 | — | — | V | $I_E=10\mu\text{A}$ |
| Collector cutoff current | I_{CBO} | — | — | 0.1 | μA | $V_{CB}=12\text{V}$ |
| Emitter cutoff current | I_{EBO} | — | — | 0.1 | μA | $V_{EB}=4\text{V}$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | — | 0.15 | V | $I_C/I_E=10\text{mA}/1\text{mA}$ |
| DC current transfer ratio | h_{FE} | 560 | 1600 | 2700 | — | $V_{CE}=2\text{V}, I_C=5\text{mA}$ |
| Transition frequency | f_T | — | 240 | — | MHz | $V_{CE}=5\text{V}, I_E=10\text{mA}, f=200\text{MHz}$ |
| Output capacitance | C_{ob} | — | 1.4 | 3 | pF | $V_{CB}=10\text{V}, I_C=0\text{A}, f=1\text{MHz}$ |

(SPEC-C131)

High-frequency Amplifier Transistor (25V, 50mA, 300MHz)

2SC4618 / 2SC4098 / 2SC2413K / 2SC2058S

●Features

- 1) Low collector capacitance, typically $C_{ob}=1.3\text{pF}$.
- 2) Low rbb, high gain, and excellent noise characteristics.

●Packaging specifications and hFE

| Type | 2SC4618 | 2SC4098 | 2SC2413K | 2SC2058S |
|------------------------------|---------|---------|----------|----------|
| Package | EMT3 | UMT3 | SMT3 | SPT |
| hFE | NPQ | NPQ | NPQ | P |
| Marking | A* | A* | A* | — |
| Code | EL | T106 | T146 | TP |
| Basic ordering unit (pieces) | 3000 | 3000 | 3000 | 5000 |

* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-------------------|----------|------|
| Collector-base voltage | V_{CBO} | 40 | V |
| Collector-emitter voltage | V_{CEO} | 25 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 50 | mA |
| Collector power dissipation | 2SC4618 | 0.15 | W |
| | 2SC4098, 2SC2413K | 0.2 | |
| | 2SC2058S | 0.3 | |
| Junction temperature | T_J | 150 | °C |
| Storage temperature | T_{stg} | -55~+150 | °C |

●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|----------------------------|------|------|------|---------------|---|
| Collector-base breakdown voltage | BV_{CBO} | 40 | — | — | V | $I_C=50\mu\text{A}$ |
| Collector-emitter breakdown voltage | BV_{CEO} | 25 | — | — | V | $I_C=1\text{mA}$ |
| Emitter-base breakdown voltage | BV_{EBO} | 5 | — | — | V | $I_E=50\mu\text{A}$ |
| Collector cutoff current | I_{CBO} | — | — | 0.5 | μA | $V_{CB}=24\text{V}$ |
| Emitter cutoff current | I_{EBO} | — | — | 0.5 | μA | $V_{EB}=3\text{V}$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | 0.1 | 0.3 | V | $I_C/I_E=10\text{mA}/1\text{mA}$ |
| DC current transfer ratio | 2SC4618, 2SC4098, 2SC2413K | 56 | — | 270 | — | $V_{CE}=6\text{V}, I_C=1\text{mA}$ |
| | 2SC2058S | 82 | — | 180 | — | |
| Transition frequency | f_T | 150 | 300 | — | MHz | $V_{CE}=6\text{V}, I_E=1\text{mA}, f=100\text{MHz}$ |
| Output capacitance | C_{ob} | — | 1.3 | 2.2 | pF | $V_{CB}=6\text{V}, I_E=0\text{A}, f=1\text{MHz}$ |

