

2SC3906K 2SC4102

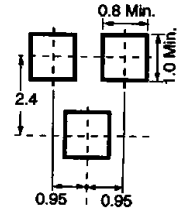
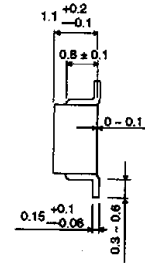
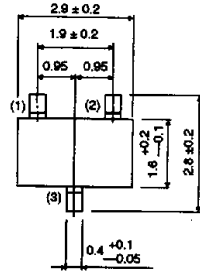
Transistor, NPN

Features

- available in SMT3 (SMT, SC-59) and UMT3 (UMT, SC-70) package
- package marking: 2SC3906K and 2SC4102; T★, where ★ is h_{FE} code
- high breakdown voltage, $V_{CEO} = 120\text{ V}$
- complementary pair with 2SA1514K or 2SA1579

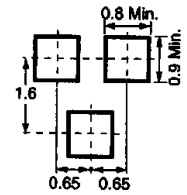
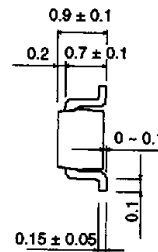
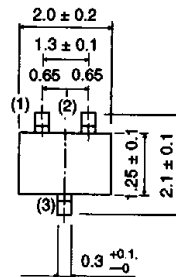
Dimensions (Units : mm)

2SC3906K (SMT3)



- (1) Emitter
- (2) Base
- (3) Collector

2SC4102 (UMT3)



- (1) Emitter
- (2) Base
- (3) Collector

2SC3906K, 2SC4102 Transistor, NPN, 2SC series

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

| Parameter | Symbol | Limits | Unit |
|------------------------------|-----------|------------|------------------|
| Collector-to-base voltage | V_{CBO} | 120 | V |
| Collector-to-emitter voltage | V_{CEO} | 120 | V |
| Emitter-to-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 50 | mA |
| Collector dissipation | P_C | 200 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 ~ +150 | $^\circ\text{C}$ |

Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$)

| Parameter | Symbol | Min | Typical | Max | Unit | Conditions |
|---|---------------|-----|---------|-----|---------------|---|
| Collector-to-base breakdown voltage | BV_{CBO} | 120 | | | V | $I_C = 50 \mu\text{A}$ |
| Collector-to-emitter breakdown voltage | BV_{CEO} | 120 | | | V | $I_C = 1 \text{ mA}$ |
| Emitter-to-base breakdown voltage | BV_{EBO} | 5 | | | V | $I_E = 50 \mu\text{A}$ |
| Collector cutoff current | I_{CBO} | | | 0.5 | μA | $V_{CB} = 100 \text{ V}$ |
| Emitter cutoff current | I_{EBO} | | | 0.5 | μA | $V_{EB} = 4 \text{ V}$ |
| DC current gain | h_{FE} | 180 | | 820 | | $V_{CE} = 6 \text{ V}, I_C = 2 \text{ mA}$ |
| Collector-to-emitter saturation voltage | $V_{CE(sat)}$ | | | 0.5 | V | $I_C/I_B = 10 \text{ mA}/1 \text{ mA}$ |
| Transition frequency | f_T | | 140 | | MHz | $V_{CE} = 12 \text{ V}, I_E = -2 \text{ mA}, f = 100 \text{ MHz}$ |
| Output capacitance | C_{ob} | | 2.5 | | pF | $V_{CB} = 12 \text{ V}, I_E = 0 \text{ A}, f = 1 \text{ MHz}$ |

h_{FE} rankings

| Item | R | S | E |
|----------|-----------|-----------|-----------|
| h_{FE} | 180 ~ 390 | 270 ~ 560 | 390 ~ 820 |

Electrical characteristic curves

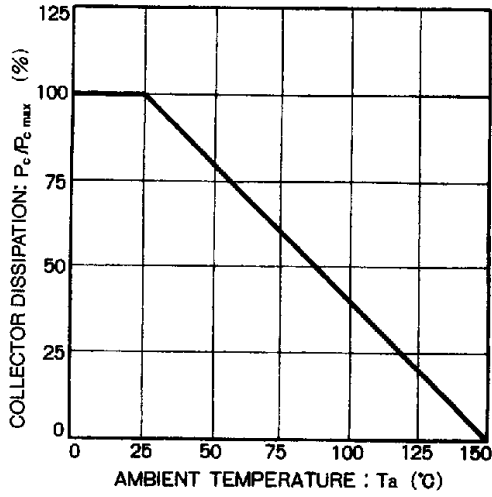


Figure 1

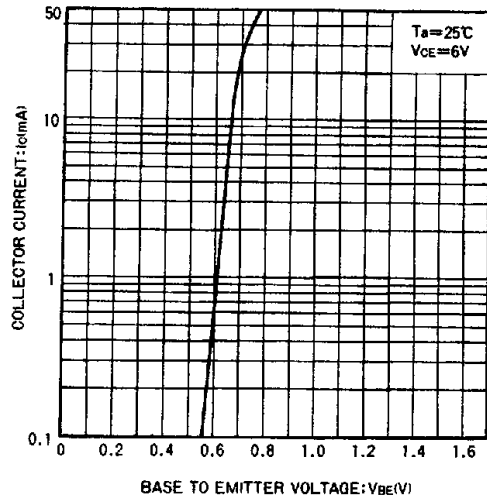


Figure 2

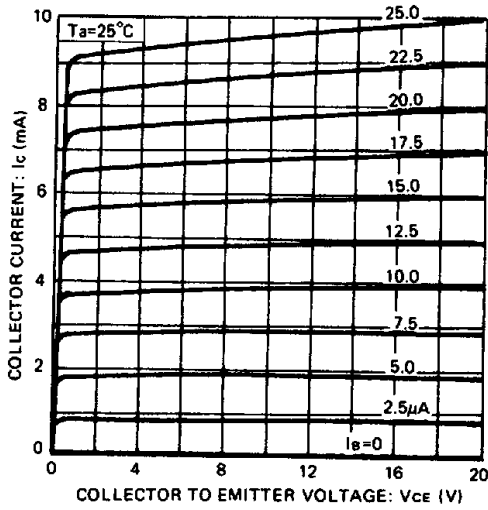


Figure 3

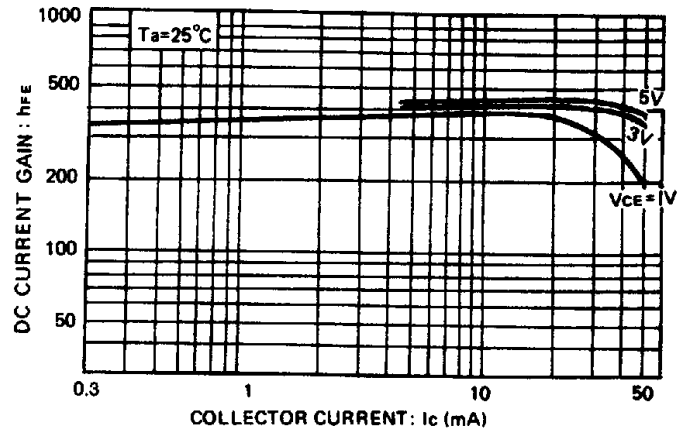


Figure 4

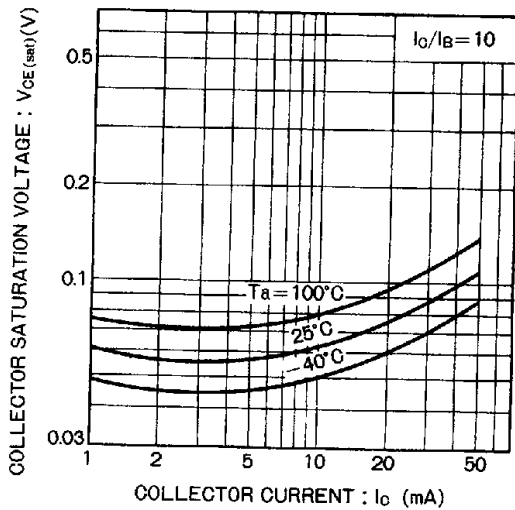


Figure 5

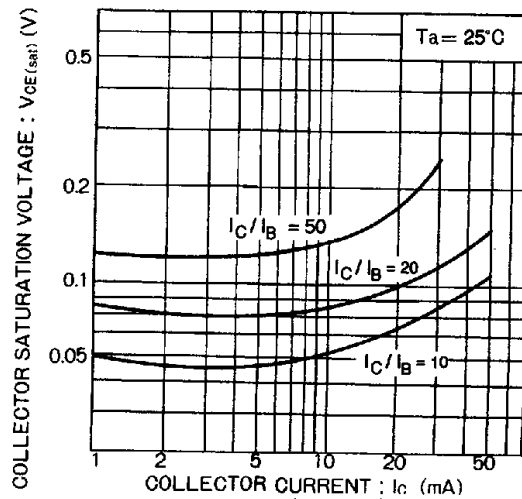


Figure 6

2SC3906K, 2SC4102 Transistor, NPN, 2SC series

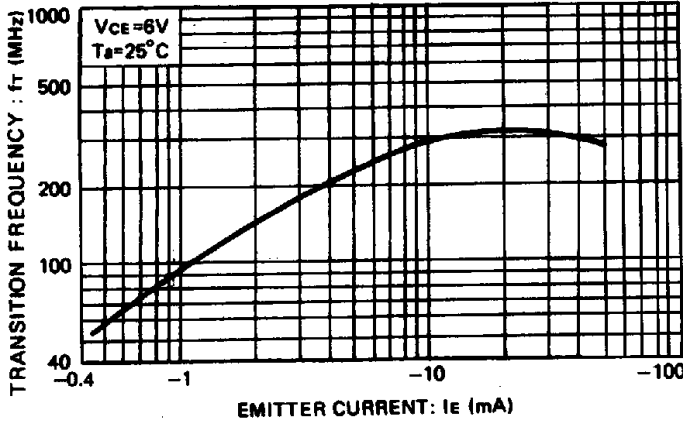


Figure 7

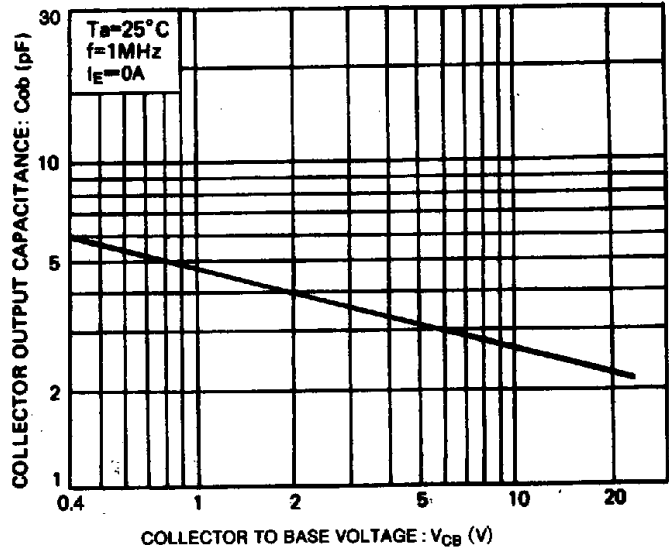


Figure 8

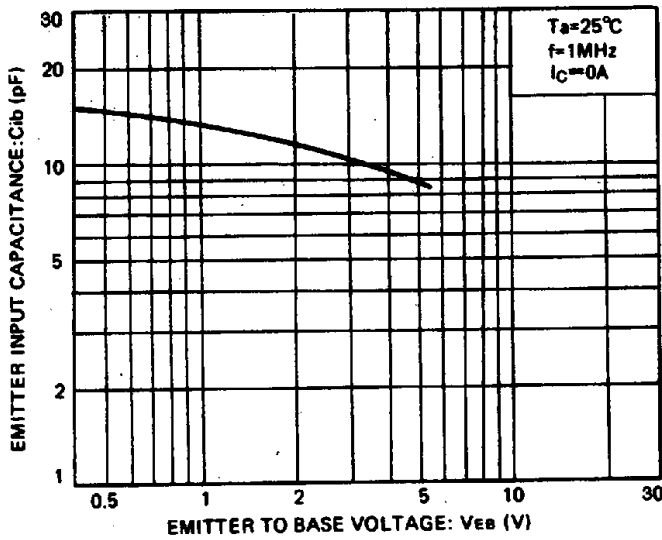


Figure 9

Ordering information

| Package | Tape | |
|--|------|------|
| | T146 | T106 |
| Code | T146 | T106 |
| Basic order quantity | 3000 | 3000 |
| 2SC3906K | ★ | |
| 2SC4102 | | ★ |
| ★ = Standard, ☆ = Semi-standard, * = Special order | | |