

# 2SC3906K 2SC4102

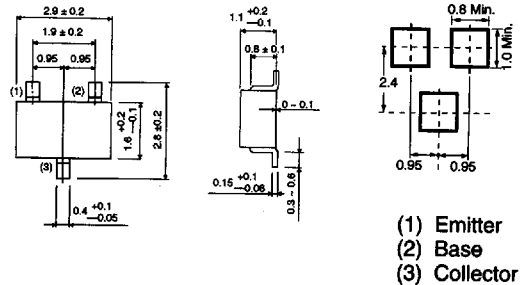
## Transistor, NPN

### Features

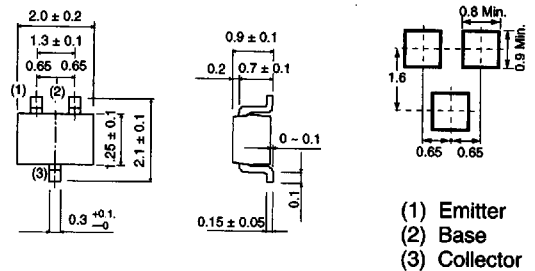
- available in SMT3 (SMT, SC-59) and UMT3 (UMT, SC-70) package
- package marking: 2SC3906K and 2SC4102; T★, where ★ is  $h_{FE}$  code
- high breakdown voltage,  $V_{CEO} = 120\text{ V}$
- complementary pair with 2SA1514K or 2SA1579

### Dimensions (Units : mm)

#### 2SC3906K (SMT3)



#### 2SC4102 (UMT3)



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	$\mu\text{A}$	$V_{CB} = 100 \text{ V}$
Emitter cutoff current	$I_{EBO}$			0.5	$\mu\text{A}$	$V_{EB} = 4 \text{ V}$
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

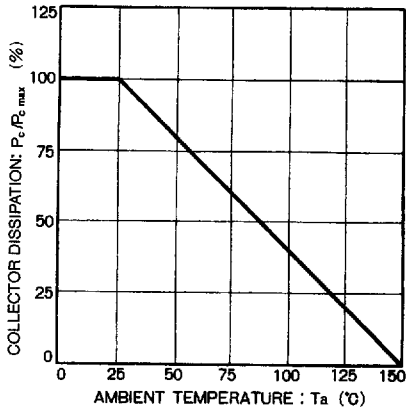


Figure 1

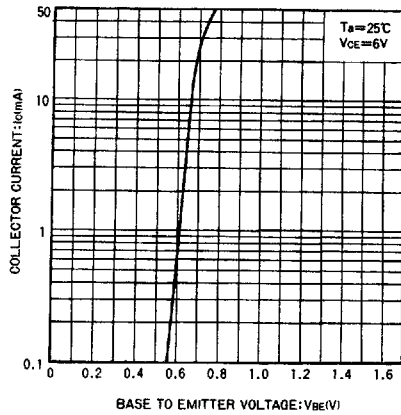


Figure 2

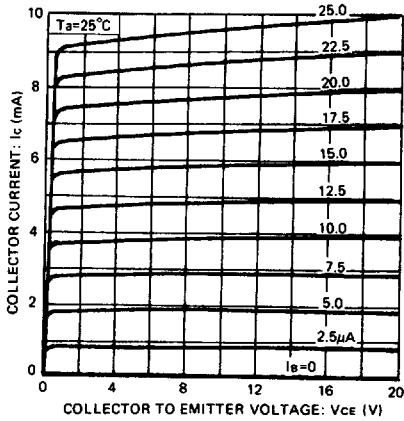


Figure 3

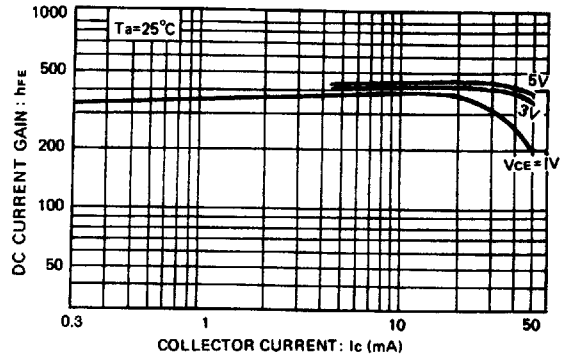


Figure 4

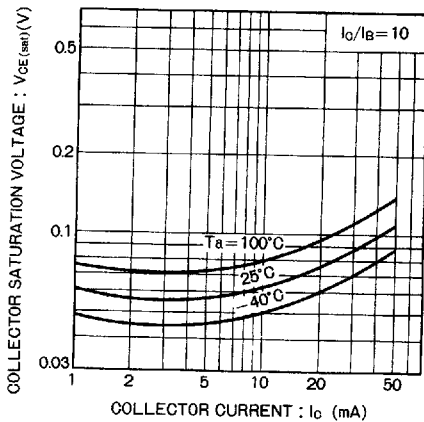


Figure 5

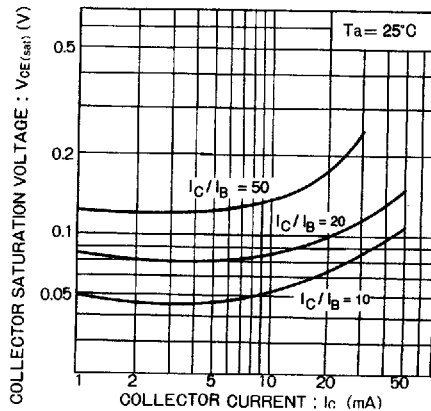


Figure 6

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

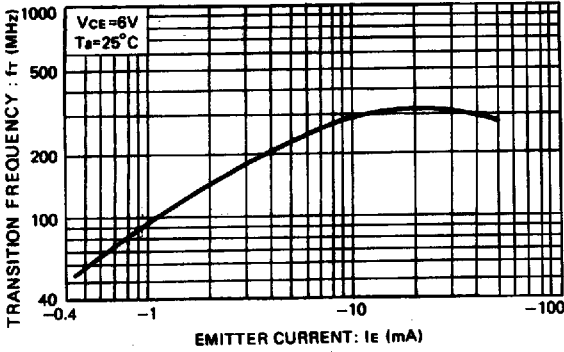


Figure 7

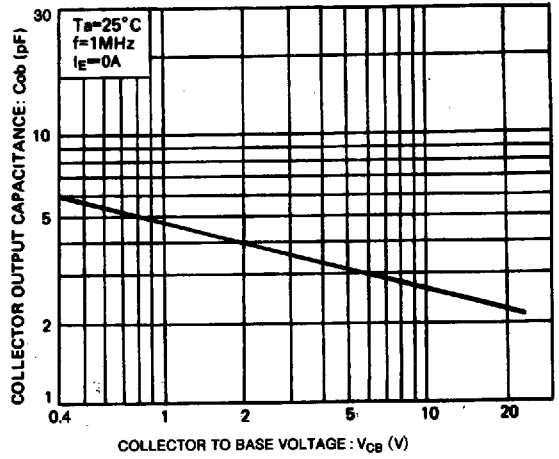


Figure 8

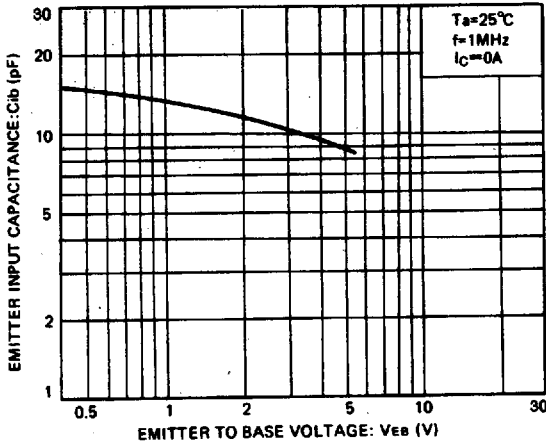


Figure 9

Ordering information

Package	Tape	
	T146	T106
Code	T146	T106
Basic order quantity	3000	3000
2SC3906K	★	
2SC4102		★

★ = Standard, ☆ = Semi-standard, \* = Special order