

# 2SC2412K 2SC4081 2SC4617

## Transistor, NPN

### Features

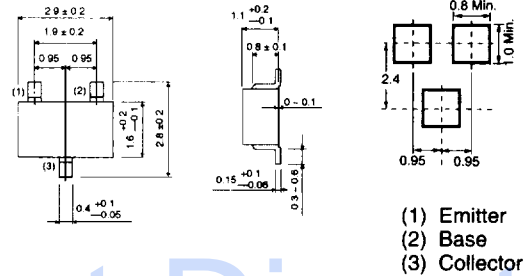
- available in SMT3 (SMT, SC-59), UMT3 (UMT, SC-70), and EMT3 (EMT, SC-75) packages
- package marking: 2SC2412K, 2SC4081, 2SC4617; B★, where ★ is  $h_{FE}$  code
- low output capacitance, typically  $C_{ob} = 2.0 \text{ pF}$
- complementary pair with 2SA1037AK, 2SA1576A, and 2SA1774

### Applications

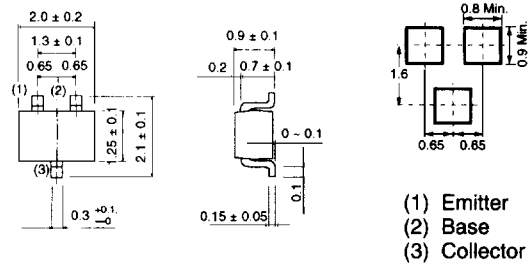
- small signal amplifier

### Dimensions (Units : mm)

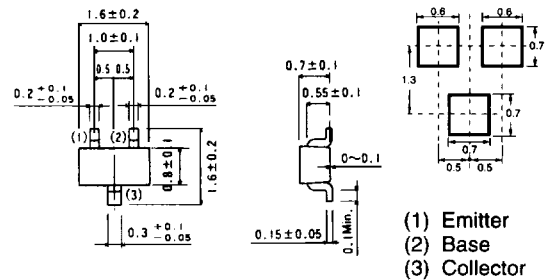
#### 2SC2412K (SMT3)



#### 2SC4081 (UMT3)



#### 2SC4617 (EMT3)



**2SC2412K, 2SC4081, 2SC4617 Transistor, NPN, 2SC series**
**Absolute maximum ratings ( $T_a = 25^\circ\text{C}$ )**

Parameter	Symbol	Limits	Unit
Collector-to-base voltage	$V_{CBO}$	50	V
Collector-to-emitter voltage	$V_{CEO}$	50	V
Emitter-to-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	150	mA
Collector dissipation	2SC2412K	200	mW
	2SC4081		
	2SC4617	150	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

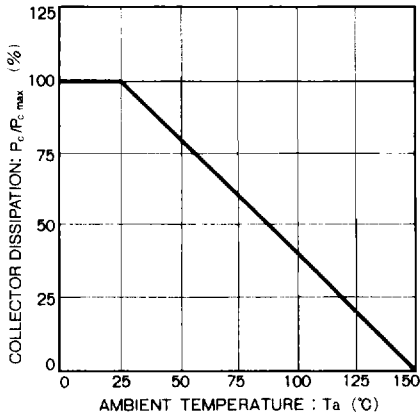
**Electrical characteristics (unless otherwise noted,  $T_a = 25^\circ\text{C}$ )**

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	$BV_{CBO}$	50			V	$I_C = 50 \mu\text{A}$
Collector-to-emitter breakdown voltage	$BV_{CEO}$	50			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	$\mu\text{A}$	$V_{CB} = 30 \text{ V}$
Emitter cutoff current	$I_{EBO}$			0.5	$\mu\text{A}$	$V_{EB} = 4 \text{ V}$
DC current gain	$h_{FE}$	120		560		$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}$
Collector-to-emitter saturation voltage	$V_{CE(sat)}$			0.4	V	$I_C/I_B = 50 \text{ mA}/5 \text{ mA}$
Transition frequency	$f_T$		180		MHz	$V_{CE} = 12 \text{ V}, I_E = -2 \text{ mA}, f = 100 \text{ MHz}$
Output capacitance	$C_{ob}$		2.0	3.5	pF	$V_{CB} = 12 \text{ V}, I_E = 0 \text{ A}, f = 1 \text{ MHz}$

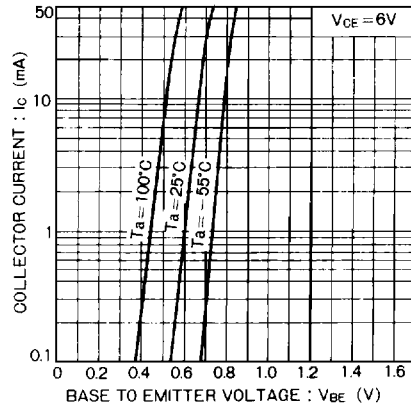
 **$h_{FE}$  rankings**

Item	Q	R	S
$h_{FE}$	120 ~ 270	180 ~ 390	270 ~ 560

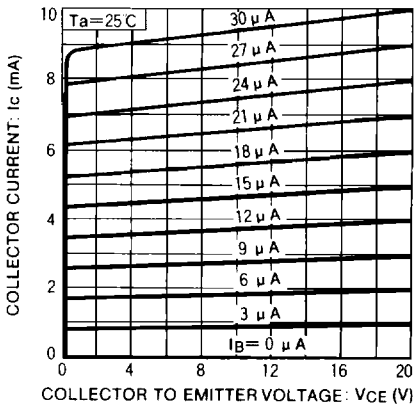
**Electrical characteristic curves**



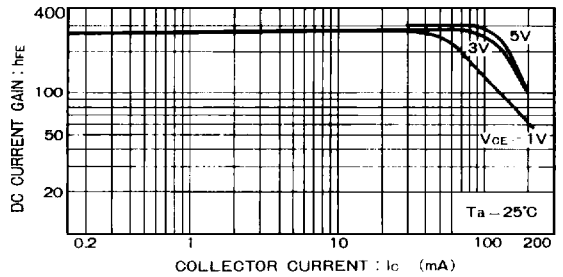
**Figure 1**



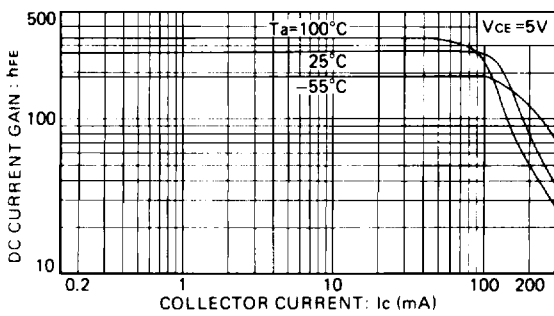
**Figure 2**



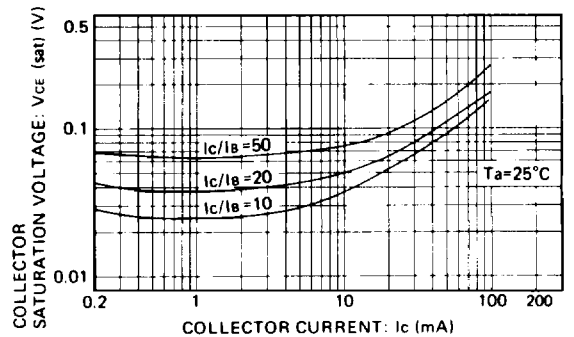
**Figure 3**



**Figure 4**



**Figure 5**



**Figure 6**

2SC2412K, 2SC4081, 2SC4617 Transistor, NPN, 2SC series

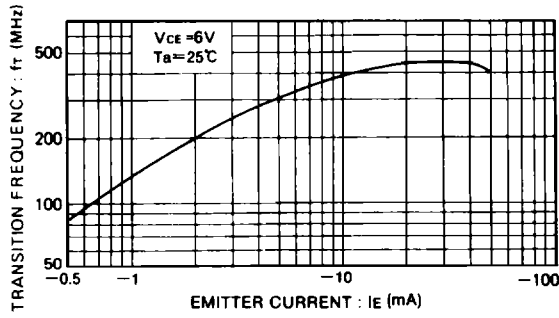


Figure 7

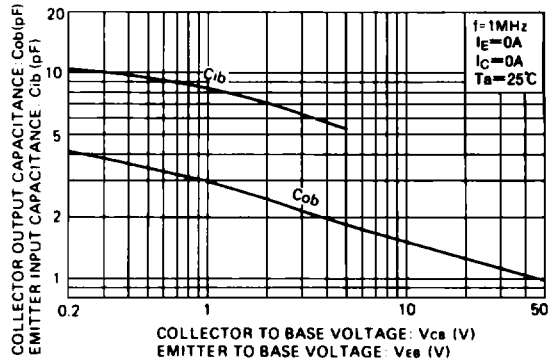


Figure 8

Ordering information

Package	Tape		
	T146	T106	TL
Code			
Basic order quantity	3000	3000	3000
2SC2412K	★		
2SC4081		★	
2SC4617			★
★ = Standard, ☆ = Semi-standard, * = Special order			