

Transistors

High-Frequency Amplifier Transistor (18V, 50mA, 1.5GHz)

2SC5661 / 2SC4725 / 2SC4082 / 2SC3837K

●Features

- 1) High transition frequency. (Typ. $f_r = 1.5\text{GHz}$)
- 2) Small $r_{bb'}$ ·Cc and high gain. (Typ. 6ps)
- 3) Small NF.

● Absolute maximum ratings (Ta=25°C)

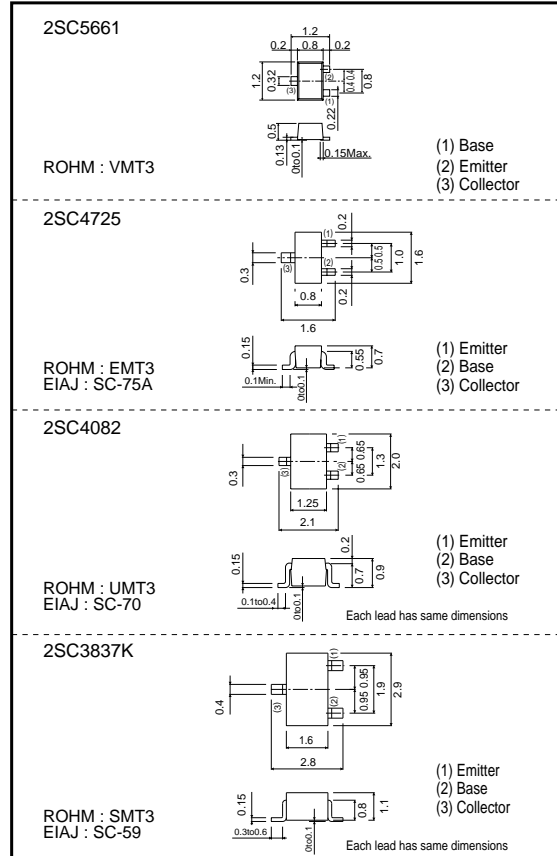
Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	30	V
Collector-emitter voltage	V_{CE0}	18	V
Emitter-base voltage	V_{EB0}	3	V
Collector current	I_c	50	mA
Collector power dissipation	Pc	0.15	W
		0.2	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55~+150	°C

●Packaging specifications and hFE

Type	2SC5661	2SC4725	2SC4082	2SC3837K
Package	VMT3	EMT3	UMT3	SMT3
hFE	NP	NP	NP	NP
Marking	AC*	AC*	1C*	AC*
Code	T2L	TL	T106	T146
Basic ordering unit (pieces)	8000	3000	3000	3000

* Denotes hFE

●External dimensions (Units : mm)



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	30	-	-	V	$I_c = 10\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CE0}	18	-	-	V	$I_c = 1\text{mA}$
Emitter-base breakdown voltage	BV_{EB0}	3	-	-	V	$I_E = 10\mu\text{A}$
Collector cutoff current	I_{c0}	-	-	0.5	μA	$V_{CB} = 10\text{V}$
Emitter cutoff current	I_{E0}	-	-	0.5	μA	$V_{EB} = 2\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.5	V	$I_c/I_B = 20\text{mA}/4\text{mA}$
DC current transfer ratio	hFE	56	-	180	-	$V_{CE}/I_c = 10\text{V}/10\text{mA}$
Transition frequency	f_r	600	1500	-	MHz	$V_{CB} = 10\text{V}$, $I_c = 10\text{mA}$, $f = 200\text{MHz}$
Output capacitance	Cob	-	0.9	1.5	pF	$V_{CB} = 10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$
Collector-base time constant	$r_{bb'}$ ·Cc	-	6	13	ps	$V_{CB} = 10\text{V}$, $I_c = 10\text{mA}$, $f = 31.8\text{MHz}$
Noise factor	NF	-	4.5	-	dB	$V_{CE} = 12\text{V}$, $I_c = 2\text{mA}$, $f = 200\text{MHz}$, $R_g = 50\Omega$

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