

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 h_{FE}**

Type	2SC4997	2SC4998
Package	EMT3	UMT3
h_{FE}	560~2700	560~2700
Marking	CB	CB
Code	TL	T106
Basic ordering unit (pieces)	3000	3000

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

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	$^\circ\text{C}$
Storage temperature	T_{stg}	-55~+150	$^\circ\text{C}$

● **Electrical characteristics ($T_a=25^\circ\text{C}$)**

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	$V_{CB}=10\text{V}$, $I_E=0\text{A}$, $f=1\text{MHz}$

(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 r_{bb} , high gain, and excellent noise characteristics.

● **Packaging specifications and h_{FE}**

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

* Denotes h_{FE}

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

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	$^\circ\text{C}$
Storage temperature	T_{stg}	-55~+150	$^\circ\text{C}$

● **Electrical characteristics ($T_a=25^\circ\text{C}$)**

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	h_{FE}	56	—	270	—
	2SC2058S	h_{FE}	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	$V_{CB}=6\text{V}$, $I_E=0\text{A}$, $f=1\text{MHz}$

(96-161-C26)