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

2SC4725 / 2SC4082 / 2SC3837K

●Features

1）High transition frequency, typically f_T=1.5GHz.
2）Small Cc-$r_{bb'}$ and high gain.（Typically 4ps）
3）Small NF.

●Absolute maximum ratings（Ta=25℃）

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	30	V
Collector-emitter voltage		V_{CEO}	18	V
Emitter-base voltage		V_{EBO}	3	V
Collector current		I_C	50	mA
Collector power dissipation	2SC4725	P_C	0.15	W
	2SC4082,2SC3837K		0.2	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

●Packaging specifications and h_{FE}

Type	2SC4725	2SC4082	2SC3837K
Package	EMT3	UMT3	SMT3
h_{FE}	NP	NP	NP
Marking	AC*	1C*	AC*
Code	TL	T106	T146
Basic ordering unit (pieces)	3000	3000	3000

* Denotes h_{FE}

●Electrical characteristics（Ta=25℃）

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	I_C=10μA
Collector-emitter breakdown voltage	BV_{CEO}	18	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	3	—	—	V	I_E=10μA
Collector cutoff current	I_{CBO}	—	—	0.5	μA	V_{CB}=10V
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	V_{EB}=2V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	I_C/I_B=20mA/4mA
DC current transfer ratio	h_{FE}	56	—	180	—	V_{CE}/I_C=10V/10mA
Transition frequency	f_T	600	1500	—	MHz	V_{CB}=10V , I_C=10mA , f=200MHz
Output capacitance	Cob	—	0.9	1.5	pF	V_{CB}=10V , I_E=0A , f=1MHz
Collector-base time constant	Cc・$r_{bb'}$	—	6	13	ps	V_{CB}=10V , I_C=10mA , f=31.8MHz
Noise factor	NF	—	4.5	—	dB	V_{CE}=12V , I_C=2mA , f=200MHz , Rg=50Ω

(94S-227-C101)

High-Frequency Amplifier Transistor (11V, 50mA, 3.2GHz)

2SC4726 / 2SC4083 / 2SC3838K / 2SC4043S

●Features

1）High transition frequency, typically f_T=1.5GHz
2）Small Cc-$r_{bb'}$ and high gain.（Typically 4ps）
3）Small NF.

●Absolute maximum ratings（Ta=25℃）

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	20	V
Collector-emitter voltage		V_{CEO}	11	V
Emitter-base voltage		V_{EBO}	3	V
Collector current		I_C	50	mA
Collector power dissipation	2SC4726	P_C	0.15	W
	2SC4083,2SC3838K		0.2	
	2SC4043S		0.3	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

●Packaging specifications and h_{FE}

Type	2SC4726	2SC4083	2SC3838K	2SC4043S
Package	EMT3	UMT3	SMT3	SPT
h_{FE}	NP	NP	NP	P
Marking	AD	1D	AD	—
Code	TL	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	3000	5000

●Electrical characteristics（Ta=25℃）

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	20	—	—	V	I_C=10μA
Collector-emitter breakdown voltage		BV_{CEO}	11	—	—	V	I_C=1mA
Emitter-base breakdown voltage		BV_{EBO}	3	—	—	V	I_E=10μA
Collector cutoff current		I_{CBO}	—	—	0.5	μA	V_{CB}=10V
Emitter cutoff current		I_{EBO}	—	—	0.5	μA	V_{EB}=2V
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	0.5	V	I_C/I_B=10mA/5mA
DC current transfer ratio	2SC4726,2SC4083	h_{FE}	56	—	180	—	V_{CE}/I_C=10V/5mA
	2SC3838K						
	2SC4043S		82	—	180		
Transition frequency		f_T	1.4	3.2	—	GHz	V_{CE}=10V , I_E=10mA , f=500MHz
Output capacitance		Cob	—	0.8	1.5	pF	V_{CB}=10V , I_E=0A , f=1MHz
Collector-base time constant		Cc・$r_{bb'}$	—	4	12	ps	V_{CB}=10V , I_C=10mA , f=31.8MHz
Noise factor		NF	—	3.5	—	dB	V_{CE}=6V , I_C=2mA , f=500MHz , Rg=50Ω

(96-165-C102)