

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

2SC5662 / 2SC4726 / 2SC4083 / 2SC3838K / 2SC4043S

●Features

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

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	20	V
Collector-emitter voltage	V_{CE0}	11	V
Emitter-base voltage	V_{EB0}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	0.15	W
		0.2	
		0.3	
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \rightarrow +150$	$^\circ\text{C}$

●Packaging specifications and h_{FE}

Type	2SC5662	2SC4726	2SC4083	2SC3838K	2SC4043S
Package	VMT3	EMT3	UMT3	SMT3	SPT
h_{FE}	NP	NP	NP	NP	P
Marking	AD	AD	1D	AD	-
Code	T2L	TL	T106	T146	TP
Basic ordering unit (pieces)	8000	3000	3000	3000	5000

●External dimensions (Units : mm)

2SC5662 ROHM : VMT3 (1) Base (2) Emitter (3) Collector	
2SC4726 ROHM : EMT3 EIAJ : SC-75A (1) Emitter (2) Base (3) Collector	
2SC4083 ROHM : UMT3 EIAJ : SC-70 (1) Emitter (2) Base (3) Collector Each lead has same dimensions	
2SC3838K ROHM : SMT3 EIAJ : SC-59 (1) Emitter (2) Base (3) Collector Each lead has same dimensions	
2SC4043S ROHM : SPT EIAJ : SC-72 (1) Emitter (2) Collector (3) Base Taping specifications	

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Transistors

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CE0}	20	—	—	V	I _C = 10μA
Collector-emitter breakdown voltage	BV _{CE0}	11	—	—	V	I _C = 1mA
Emitter-base breakdown voltage	BV _{EB0}	3	—	—	V	I _E = 10μA
Collector cutoff current	I _{CE0}	—	—	0.5	μA	V _{CE} = 10V
Emitter cutoff current	I _{EB0}	—	—	0.5	μA	V _{EB} = 2V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	0.5	V	I _C /I _E = 10mA/5mA
DC current transfer ratio	2SC5662, 2SC4726, 2SC4083, 2SC3838K	h _{FE}	56	—	180	V _{CE} /I _C = 10V/5mA
	2SC4043S		82	—	180	
Transition frequency	f _T	1.4	3.2	—	GHz	V _{CE} = 10V, I _E = 10mA, f = 500MHz
Output capacitance	C _{ob}	—	0.8	1.5	pF	V _{CE} = 10V, I _E = 0A, f = 1MHz
Collector-base time constant	τ _{cb} ·C _C	—	4	12	ps	V _{CE} = 10V, I _C = 10mA, f = 31.8MHz
Noise factor	NF	—	3.5	—	dB	V _{CE} = 6V, I _C = 2mA, f = 500MHz, R _g = 50Ω