

# 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	2SC5662, 2SC4726	0.15	W
	2SC4083, 2SC3838K	0.2	
	2SC4043S	0.3	
Junction temperature	$T_J$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55--+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)

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

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Transistors

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage	BV <sub>CB0</sub>	20	–	–	V	I <sub>c</sub> = 10μA	
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	11	–	–	V	I <sub>c</sub> = 1mA	
Emitter-base breakdown voltage	BV <sub>EB0</sub>	3	–	–	V	I <sub>E</sub> = 10μA	
Collector cutoff current	I <sub>CB0</sub>	–	–	0.5	μA	V <sub>CB</sub> = 10V	
Emitter cutoff current	I <sub>EB0</sub>	–	–	0.5	μA	V <sub>EB</sub> = 2V	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	–	–	0.5	V	I <sub>c</sub> /I <sub>E</sub> = 10mA/5mA	
DC current transfer ratio	2SC5662, 2SC4726, 2SC4083, 2SC3838K	h <sub>FE</sub>	56	–	180	–	V <sub>CE</sub> /I <sub>c</sub> = 10V/5mA
	2SC4043S		82	–	180		
Transition frequency	f <sub>T</sub>	1.4	3.2	–	GHz	V <sub>CE</sub> = 10V, I <sub>E</sub> = 10mA, f = 500MHz	
Output capacitance	C <sub>ob</sub>	–	0.8	1.5	pF	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0A, f = 1MHz	
Collector-base time constant	τ <sub>cb</sub> -C <sub>c</sub>	–	4	12	ps	V <sub>CB</sub> = 10V, I <sub>c</sub> = 10mA, f = 31.8MHz	
Noise factor	NF	–	3.5	–	dB	V <sub>CE</sub> = 6V, I <sub>c</sub> = 2mA, f = 500MHz, R <sub>g</sub> = 50Ω	

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