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

2SC5661 / 2SC4725H / 2SC4725 / 2SC4082 / 2SC3837K

●Features

1) High transition frequency. (Typ. f_T = 1.5GHz)
2) Small rbb'·Cc and high gain. (Typ. 6ps)
3) Small NF.

● Absolute maximum ratings (Ta = 25°C)

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	2SC5661,2SC4725H, 2SC4725	P_C	0.15	W
	2SC4082,2SC3837K		0.2	
Junction temperature		Tj	150	°C
Storage temperature		Tstg	−55~+150	°C

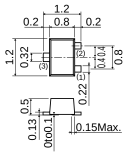
●Packaging specifications and h_{FE}

Type	2SC5661	2SC4725H	2SC4725	2SC4082	2SC3837K
Package	VMT3	EMT3H	EMT3	UMT3	SMT3
h_{FE}	NP	NP	NP	NP	NP
Marking	AC*	AC*	AC*	1C*	AC*
Code	T2L	T2L	TL	T106	T146
Basic ordering unit (pieces)	8000	8000	3000	3000	3000

* Denotes h_{FE}

●External dimensions (Units : mm)

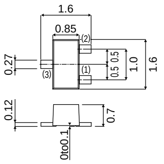
2SC5661



ROHM : VMT3

(1) Base
(2) Emitter
(3) Collector

2SC4725H

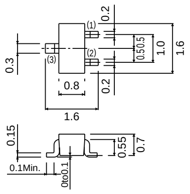


ROHM : EMT3
Flat lead
EIAJ : SC-89

(1) Base
(2) Emitter
(3) Collector

Each lead has same dimensions

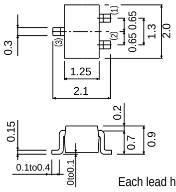
2SC4725



ROHM : EMT3
EIAJ : SC-75A

(1) Emitter
(2) Base
(3) Collector

2SC4082

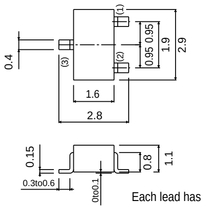


ROHM : UMT3
EIAJ : SC-70

(1) Emitter
(2) Base
(3) Collector

Each lead has same dimensions

2SC3837K



ROHM : SMT3
EIAJ : SC-59

(1) Emitter
(2) Base
(3) Collector

Each lead has same dimensions

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	–	–	V	$I_C = 10\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	18	–	–	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	3	–	–	V	$I_E = 10\mu A$
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	rbb'·Cc	–	6	13	ps	$V_{CB} = 10V$, $I_C = 10mA$, $f = 31.8MHz$
Noise factor	NF	–	4.5	–	dB	$V_{CE} = 12V$, $I_C = 2mA$, $f = 200MHz$, $Rg = 50\Omega$