

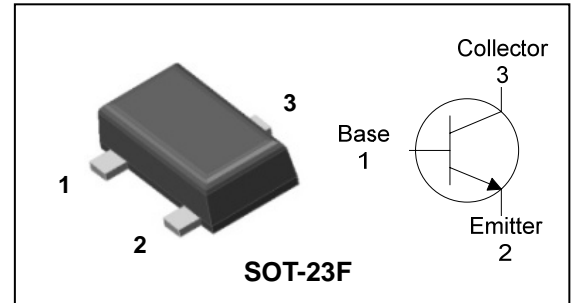
Descriptions

- General small signal application
- Switching application

Features

- Low collector saturation voltage
- Collector output capacitance
- Complementary pair with SBT3906F

PIN Connection



Ordering Information

Type NO.	Marking	Package Code
SBT3904F	1A □ ① ②	SOT-23F

① Device Code ② Year&Week Code

Absolute maximum ratings

Ta=25°C

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V _{CBO}	60	V
Collector-Emitter voltage	V _{CEO}	40	V
Emitter-base voltage	V _{EBO}	6	V
Collector current	I _C	200	mA
Collector dissipation	P _C *	350	mW
Junction temperature	T _J	150	°C
Storage temperature range	T _{stg}	-55 ~ 150	°C

* : Package mounted on 99.5% alumina 10×8×0.6mm

Electrical Characteristics

Ta=25°C

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV _{CBO}	I _C =10μA, I _E =0	60	-	-	V
Collector-Emitter breakdown voltage	BV _{CEO}	I _C =1mA, I _B =0	40	-	-	V
Emitter-Base breakdown voltage	BV _{EBO}	I _E =10μA, I _C =0	6	-	-	V
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{EB} =3V	-	-	50	nA
DC current gain	h _{FE}	V _{CE} =1V, I _C =10mA	100	-	300	-
Collector-Emitter saturation voltage	V _{CE(sat)}	I _C =50mA, I _B =5mA	-	-	0.3	V
Transition frequency	f _T	V _{CE} =20V, I _C =10mA, f=100MHz	300	-	-	MHz
Collector output capacitance	C _{ob}	V _{CB} =5V, I _E =0, f=1MHz	-	-	4	pF
Delay time	t _d	V _{CC} =3V _{dc} , V _{BE(off)} =0.5V _{dc} , I _C =10mA _{dc} , I _{B1} =1mA _{dc}	-	-	35	ns
Rise time	t _r		-	-	35	ns
Storage time	t _s	V _{CC} =3V _{dc} , I _C =10mA _{dc} , I _{B1} =I _{B2} =1mA _{dc}	-	-	200	ns
Fall Time	t _f		-	-	50	ns

Electrical Characteristic Curves

Fig. 1 P_C - T_a

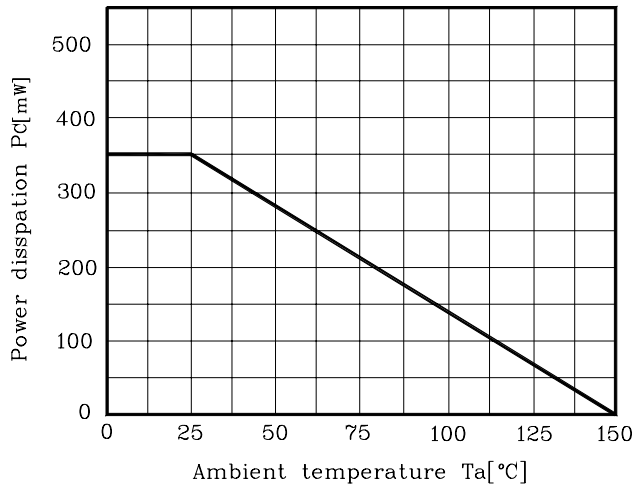


Fig. 2 h_{FE} - I_C

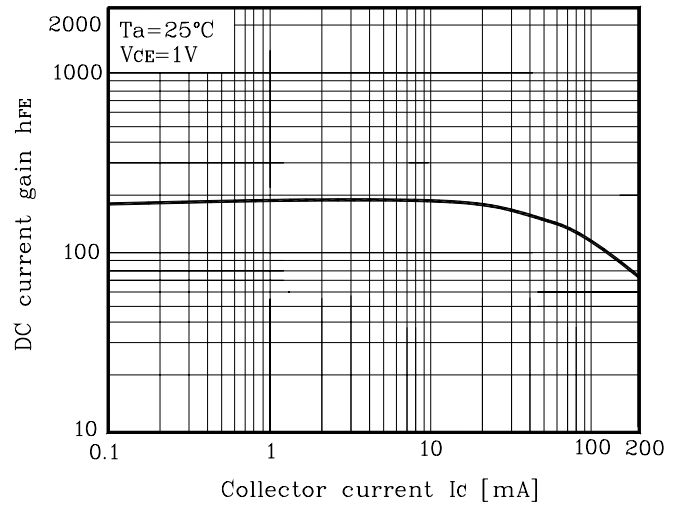
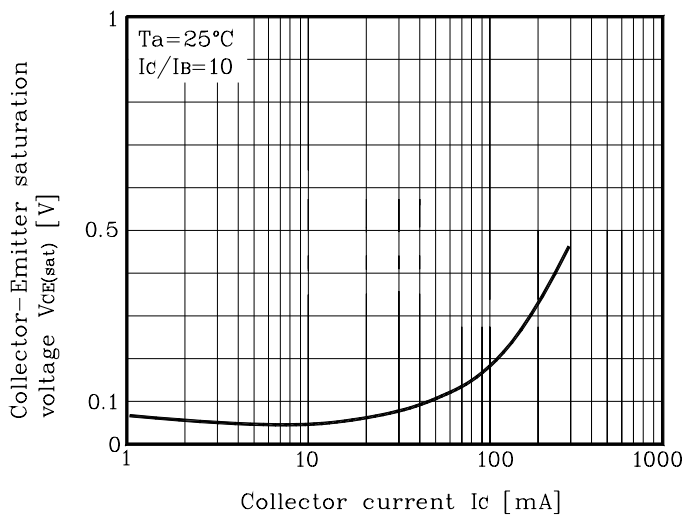
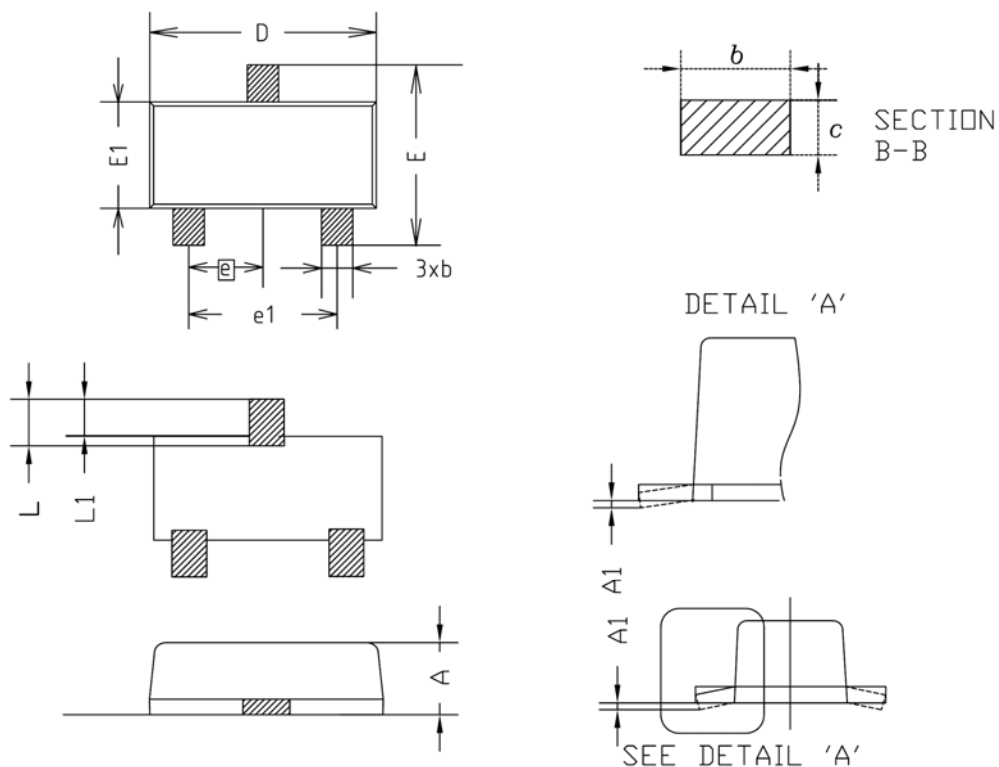


Fig. 3 $V_{CE(sat)}$ - I_C

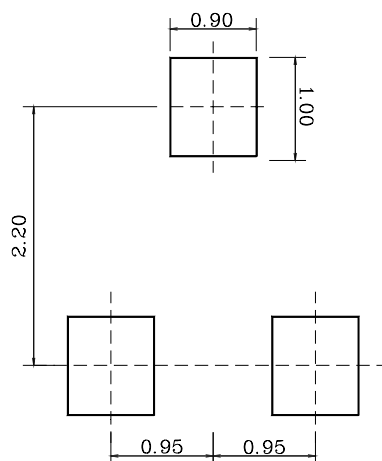


Outline Dimension



SYMBOL	MILLIMETER(mm)			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.80	0.90	1.00	
A1	0.00	-	0.10	
b	0.35	0.40	0.45	
c	0.10	0.15	0.20	
D	2.80	2.90	3.00	
E	2.30	2.40	2.50	
E1	1.50	1.60	1.70	
e	0.95BSC			
e1	1.80	1.90	2.00	
L	0.48	0.58	0.68	
L1	0.30	-	0.50	

※Recommend PCB solder land [Unit: mm]



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