KODENSHI AUK

SBT3904U

NPN Silicon Transistor

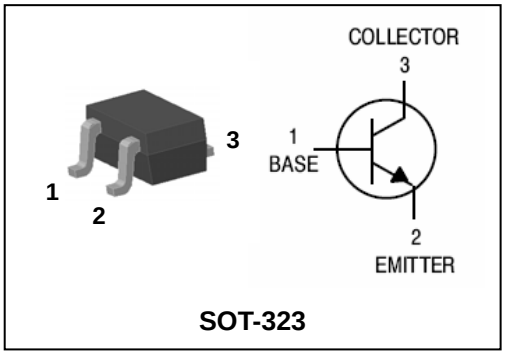
Descriptions

- Small signal application
- Switching application

Features

- Low $V_{CE(SAT)}$: 0.3V max @ I_C= 50 mA
- High speed switching : t_f= 50 ns max @ I_C= 10 mA
- Complementary pair with SBT3906U

PIN Connection



SOT-323

Ordering Information

Type NO.	Marking	Package Code
SBT3904U	1A □ ① ②	SOT-323

①Device Code ② Year&Week Code

Absolute maximum ratings

Ta=25°C

Characteristic	Symbol	Rating	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 Power dissipation	P_C^*	350	mW
Junction temperature	T_J	150	℃
Storage temperature range	T_{stg}	-55~150	℃

* : Device 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_{BE}= -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
Turn on delay time	t_d	V_{CC}= 3V, $V_{BE(off)}$= 0.5V I_C= 10mA, I_{B1}= 1mA	-	-	35	ns
Rise time	t_r		-	-	35	ns
Storage time	t_s	V_{CC}= 3V, I_C= 10mA, I_{B1}= -I_{B2}= 1mA	-	-	200	ns
Fall Time	t_f		-	-	50	ns

Electrical Characteristic Curves

Fig. 1 P_C-T_a

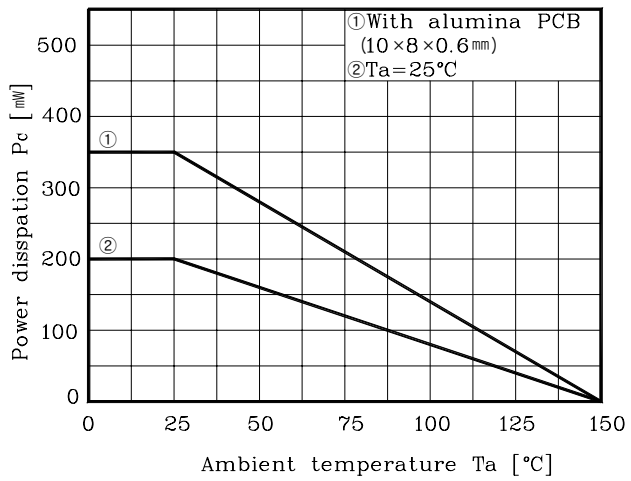


Fig. 2 h_{FE}-I_C

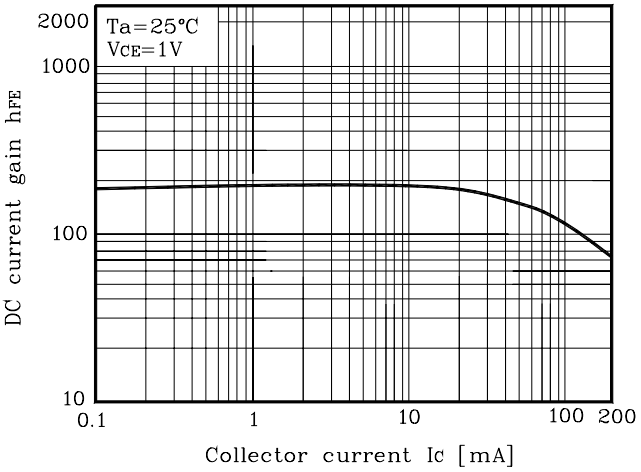
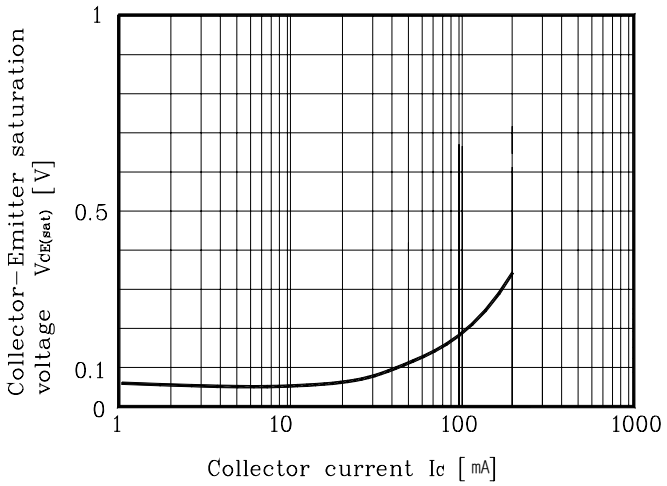
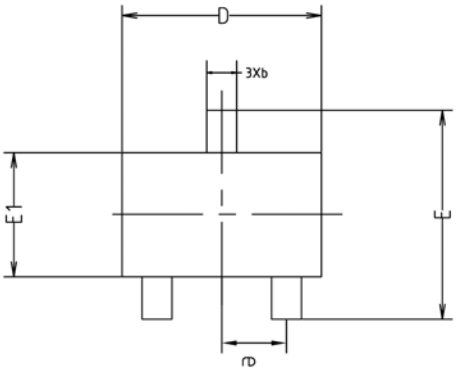
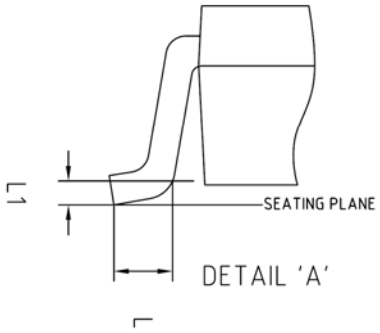


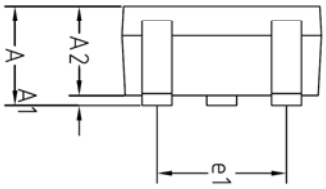
Fig. 3 $V_{CE(sat)}$-I_C

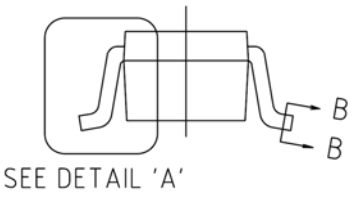


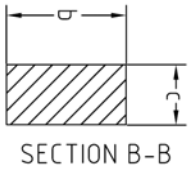
Outline Dimension





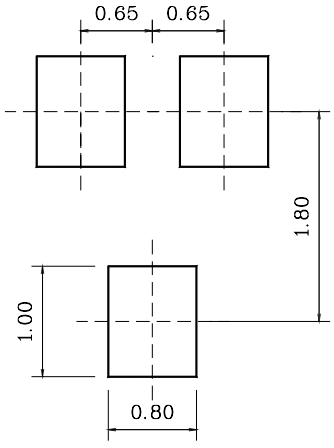






SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.90	-	1.25	
A1	0.00	-	0.10	
A2	0.85	0.90	0.95	
b	0.30	-	0.40	
c	0.10	-	0.25	
D	1.90	2.00	2.10	
E	1.95	2.10	2.25	
E1	1.15	1.25	1.35	
e	0.65BSC			
e1	1.20	-	1.40	
L	0.10	-	-	
L1	0.12BSC			

※Recommend PCB solder land [Unit: mm]



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