

Descriptions

- Small signal application
- Switching application

Features

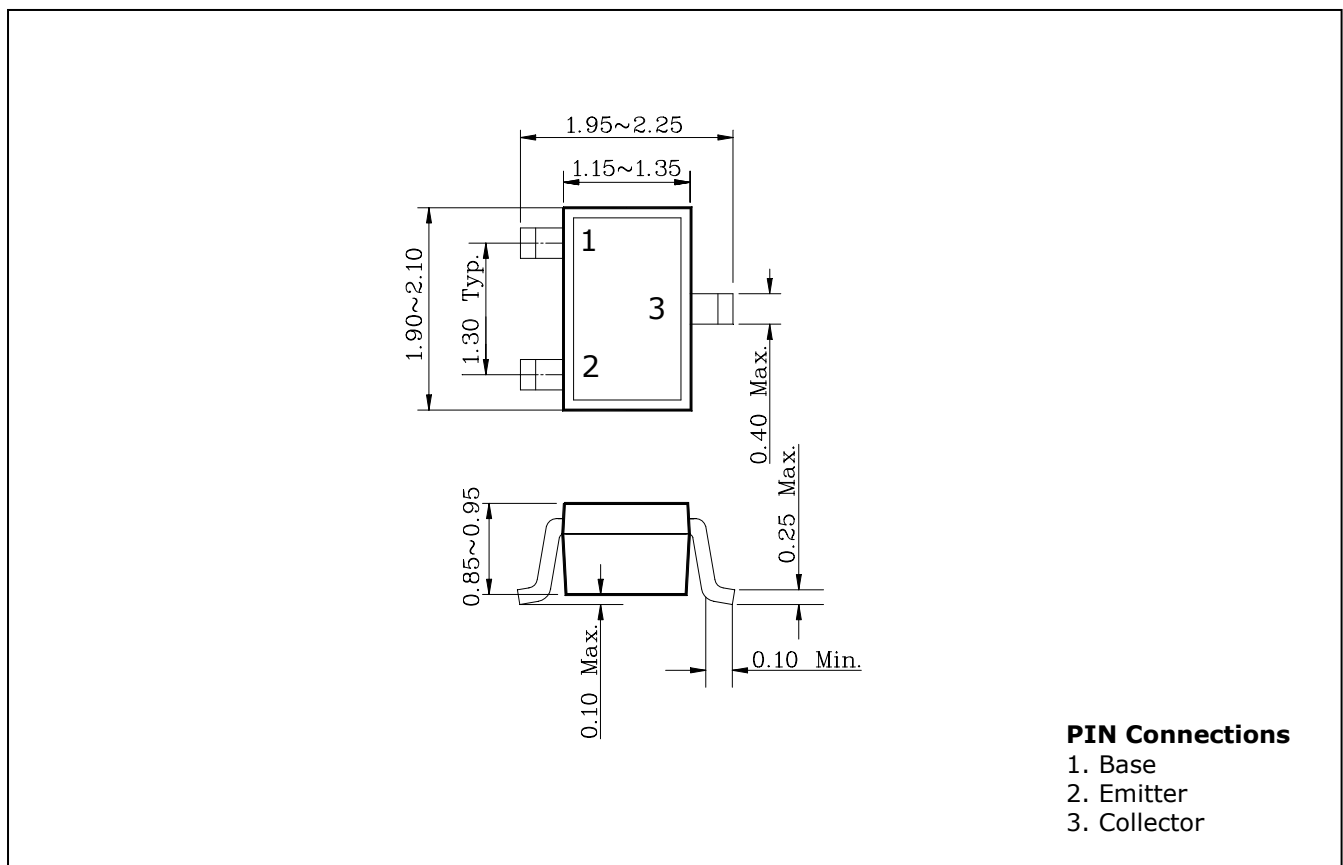
- Low $V_{CE(SAT)}$: 0.3V max @ $I_C=50$ mA
- High speed switching : $t_f=50$ ns max @ $I_C=10$ mA
- Complementary pair with SBT3906U

Ordering Information

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

Outline Dimensions

unit : mm



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	°C
Storage temperature range	T_{stg}	-55~150	°C

* : 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}	$I_C=10\mu A, I_E=0$	60	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C=1mA, I_B=0$	40	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E=10\mu A, I_C=0$	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

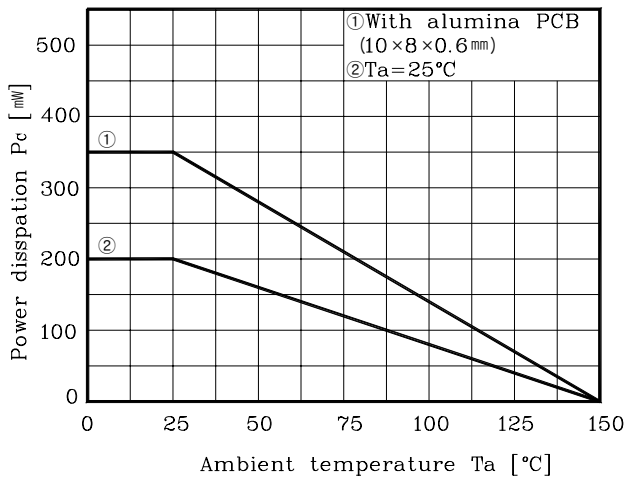


Fig. 2 h_{FE} - I_C

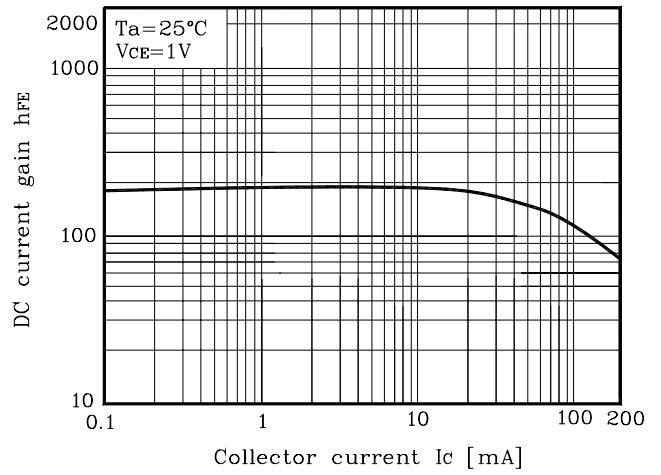
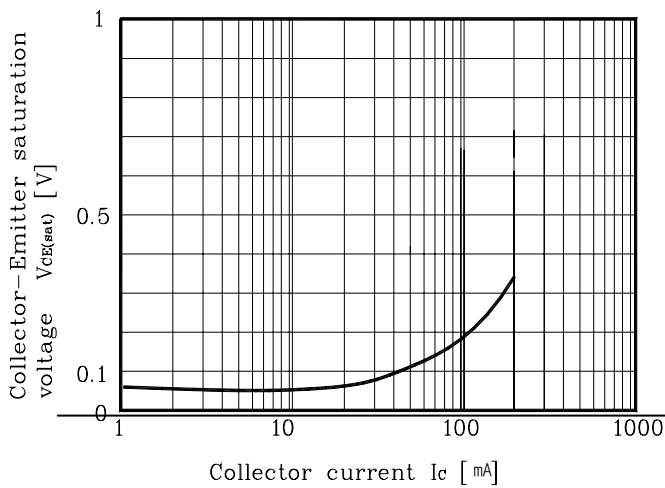


Fig. 3 $V_{CE(sat)}$ - I_C



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