

Descriptions

- High voltage application
- Telephone application

Features

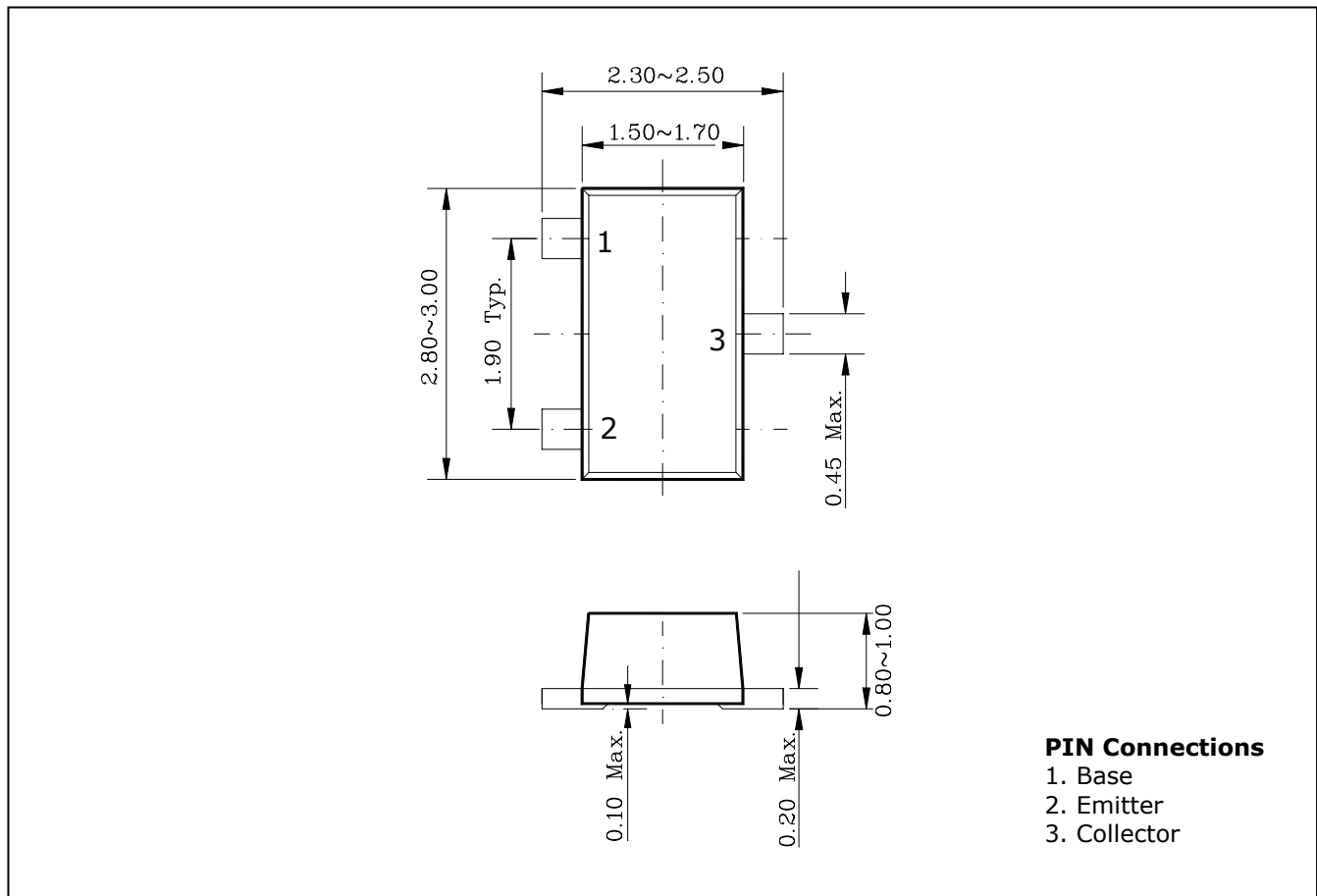
- Collector-Emitter voltage
 $V_{CEO} = \text{SBT42F} : 300\text{V}$
- Complementary pair with SBT92F

Ordering Information

Type NO.	Marking	Package Code
SBT42F	M1A	SOT-23F

Outline Dimensions

unit : mm



Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CBO}	300	V
Collector-Emitter voltage	V_{CEO}	300	V
Emitter-Base voltage	V_{EBO}	6	V
Collector current	I_C	500	mA
Emitter Current	I_E	-500	mA
Collector dissipation	P_C^*	350	mW
Junction temperature	T_j	150	°C
Storage temperature	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}	$I_C=100\mu A, I_E=0$	300	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C=1mA, I_B=0$	300	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E=100\mu A, I_C=0$	6	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=300V, I_E=0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=6V, I_C=0$	-	-	0.1	μA
DC current gain	h_{FE}^*	$V_{CE}=10V, I_C=30mA$	40	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=20mA, I_B=2mA$	-	-	0.5	V
Base-Emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=20mA, I_B=2mA$	-	-	0.9	V
Transition frequency	f_T	$V_{CE}=20V, I_C=10mA$	50	-	-	MHz
Collector output capacitance	C_{ob}	$V_{CB}=20V, I_E=0, f=1MHz$	-	-	3	pF

* : Pulse Tester : Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2.0\%$

Electrical Characteristic Curves

Fig. 1 $h_{FE} - I_C$

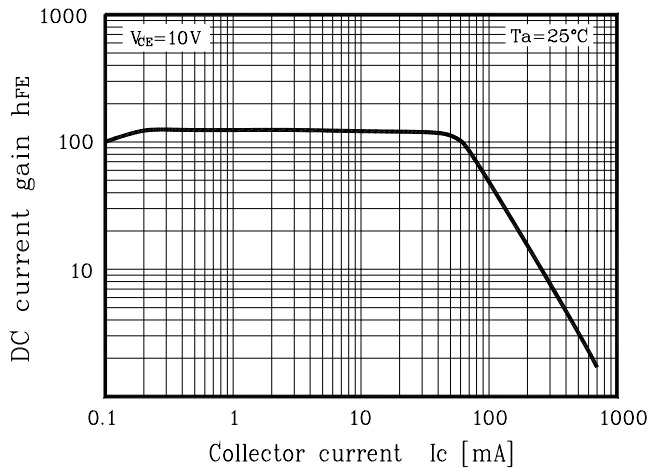


Fig. 2 $V_{CE(sat)}, V_{BE(sat)} - I_C$

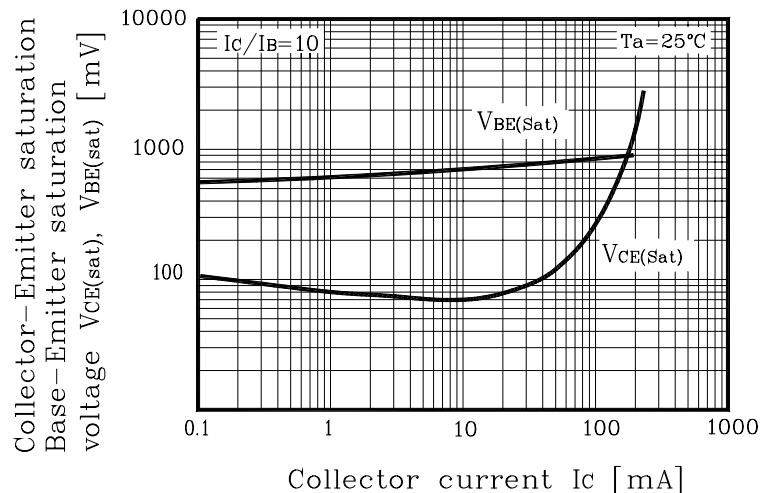


Fig. 3 $f_T - I_C$

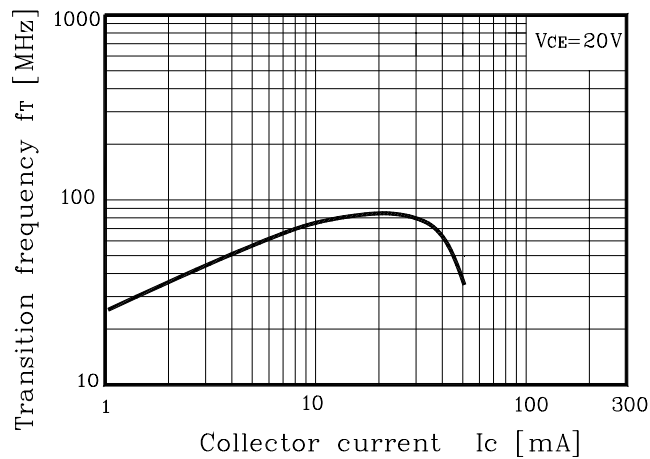
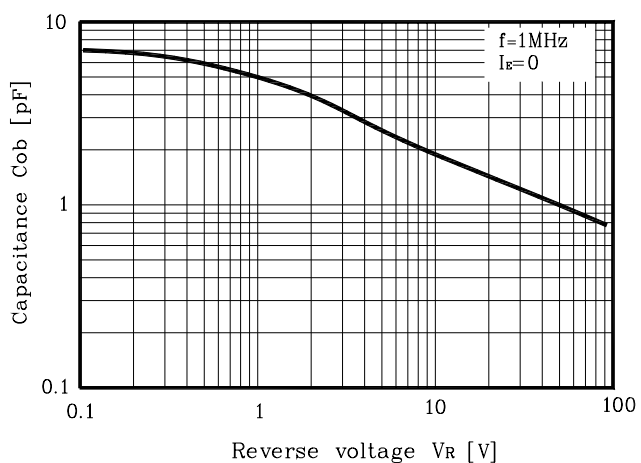


Fig. 4 $C_{ob} - V_R$



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