

Descriptions

- General purpose application
- Switching application

Features

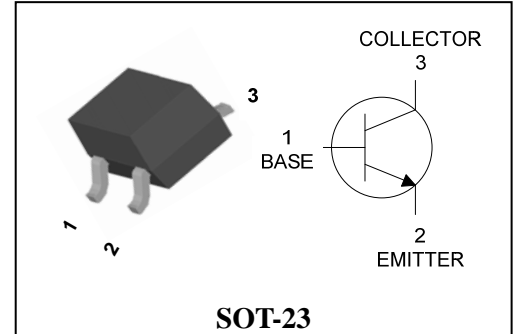
- Low Leakage current
- Low collector saturation voltage enabling low voltage operation
- Complementary pair with SBT2907A

Ordering Information

Type NO.	Marking	Package Code
SBT2222A	$\frac{1P}{\text{① ②}}$	SOT-23

①Device Code ②Year & Week Code

PIN Connection



Absolute maximum ratings

$T_a=25^\circ\text{C}$

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CBO}	75	V
Collector-Emitter voltage	V_{CEO}	40	V
Emitter-Base voltage	V_{EBO}	5	V
Collector current	I_{C}	0.6	A(DC)
	I_{CP}^*	1.2	A(Pulse)
Collector dissipation	P_{C}^{**}	350	mW
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 ~ 150	$^\circ\text{C}$

* : Single pulse, $t_p=300\ \mu\text{s}$

** : Package mounted on 99.5% alumina $10\times 8\times 0.6\text{mm}$

Thermal Characteristics

Characteristic	Symbol	Ratings	Unit
Thermal resistance Junction-Ambient	$R_{\text{th(J-A)}}^{**}$	357	$^\circ\text{C/W}$
Thermal resistance Junction-Case	$R_{\text{th(J-C)}}^{**}$	200	$^\circ\text{C/W}$

** : Package mounted on 99.5% alumina $10\times 8\times 0.6\text{mm}$

Electrical Characteristics

Ta=25°C

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C=10\mu A, I_E=0$	75	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C=1mA, I_B=0$	40	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E=10\mu A, I_C=0$	5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=75V, I_E=0$	-	-	20	nA
Collector cut-off current	I_{CEX}	$V_{CE}=30V, V_{EB}=0.5V$	-	-	50	nA
DC current gain	h_{FE}	$V_{CE}=10V, I_C=10mA$	100	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C=150mA, I_B=15mA$	-	-	0.4	V
Transition frequency	f_T	$V_{CE}=20V, I_C=20mA, f=100MHz$	250	-	-	MHz
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$	-	-	8	pF
Delay time	t_d	$V_{CC}=30V_{dc}, V_{BE(off)}=0.5V_{dc}, I_C=150mA_{dc}, I_{B1}=15mA_{dc}$	-	-	10	ns
Rise time	t_r		-	-	25	ns
Storage time	t_s	$V_{CC}=30V_{dc}, I_C=150mA_{dc}, I_{B1}=I_{B2}=15mA_{dc}$	-	-	225	ns
Fall Time	t_f		-	-	60	ns

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

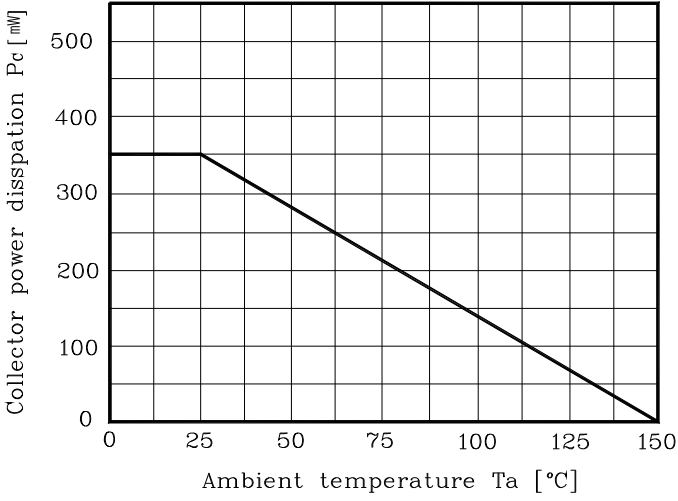


Fig. 2 $h_{FE} - I_C$

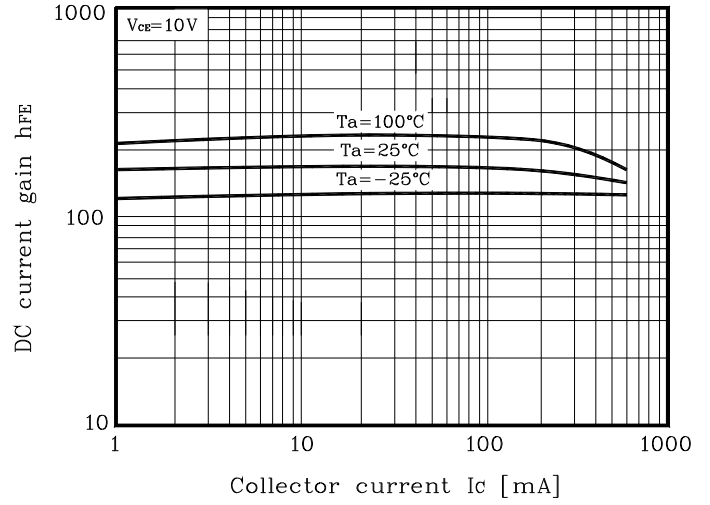


Fig. 3 $I_C - V_{CE(SAT)}$

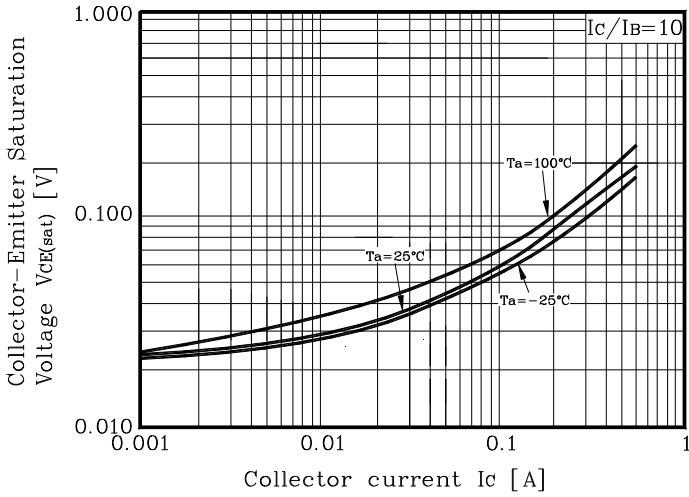


Fig. 4 $I_C - V_{BE(SAT)}$

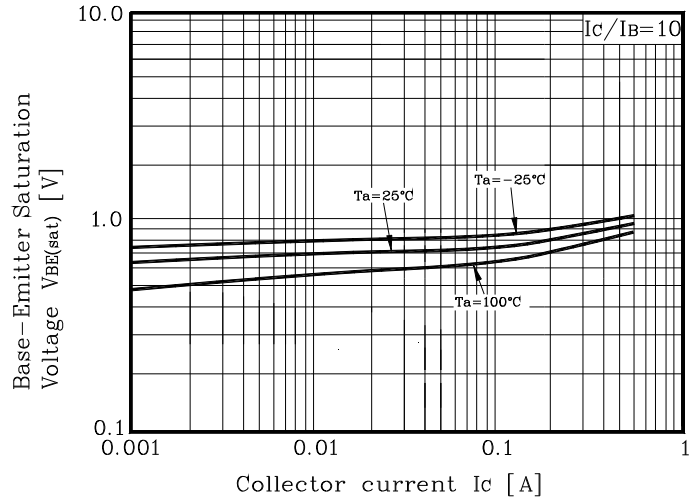
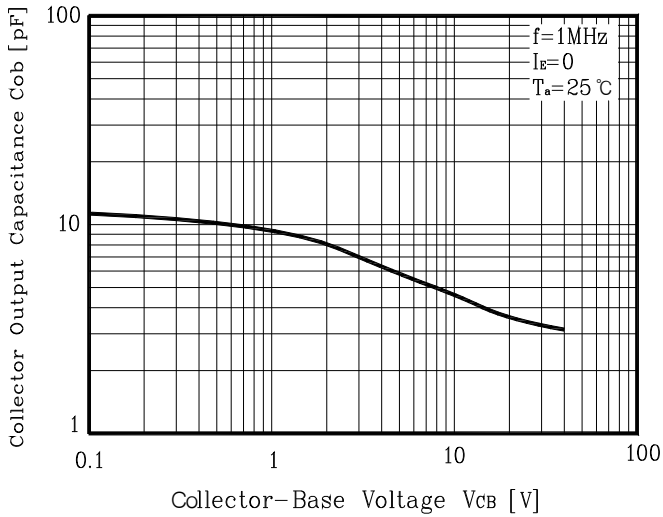
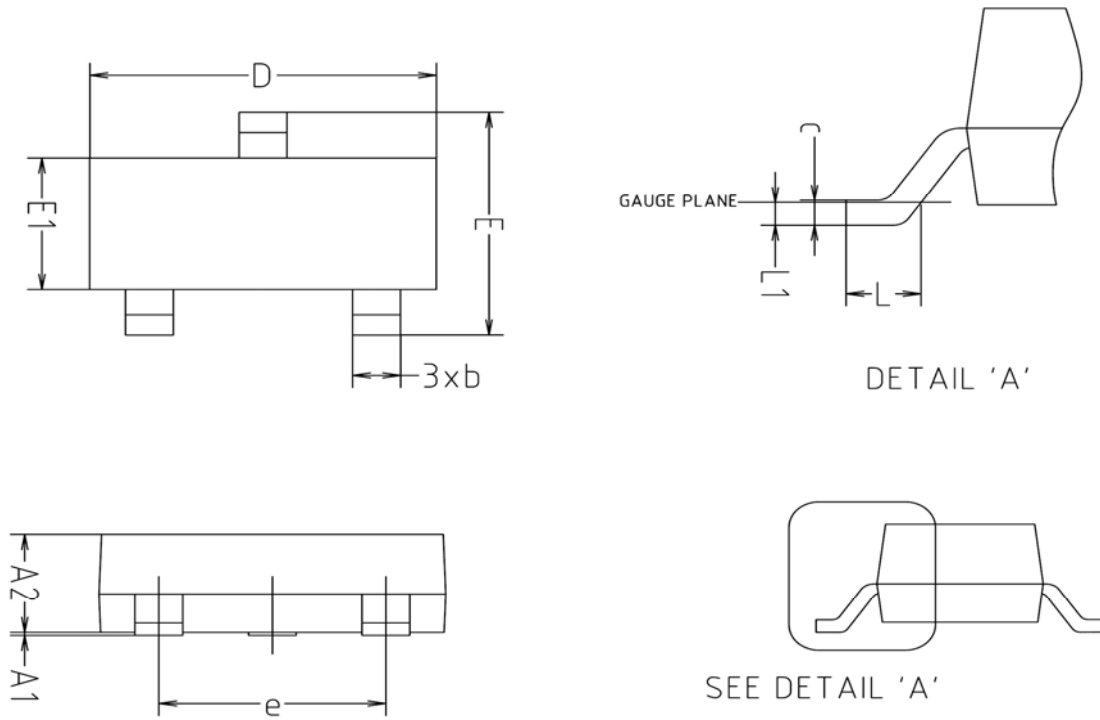


Fig. 5 $C_{ob} - V_{CB}$

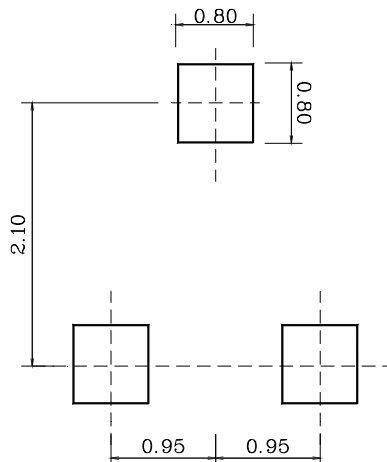


Outline Dimension (Unit: mm)



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.00	-	0.10	
A2	0.82	-	1.02	
b	0.39	0.42	0.45	
c	0.09	0.12	0.15	
D	2.80	2.90	3.00	
E	2.20	2.40	2.60	
E1	1.20	1.30	1.40	
e	1.90BSC			
L	0.20	-	-	
L1	0.12BSC			

※ Recommend PCB solder land (Unit: mm)



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