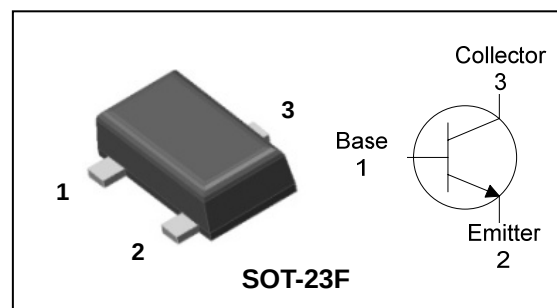


Features

- High β & low saturation transistor.
 $h_{FE} = 400$ Min. @ $V_{CE} = 1V$, $I_C = 100mA$
- Suitable for large current drive directly.
- Application for IRED Drive transistor in remote transmitter.

PIN Connection



Ordering Information

Type NO.	Marking	Package Code
STD123ASF	<u>12A</u>  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}	10	V
Collector-Emitter voltage	V_{CEO}	6	V
Emitter-Base voltage	V_{EBO}	3	V
Collector current	I_C	1	A
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 10×8×0.1mm

Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C = 50\mu A$, $I_E = 0$	10	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C = 1mA$, $I_B = 0$	6	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E = 50\mu A$, $I_C = 0$	3	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = 10V$, $I_E = 0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 3V$, $I_C = 0$	-	-	0.1	μA
DC current gain	h_{FE}	$V_{CE} = 1V$, $I_C = 100mA$	400	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA$, $I_B = 50mA$	-	0.1	0.3	V
Transistor frequency	f_T	$V_{CE} = 5V$, $I_C = 50mA$	-	260	-	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V$, $I_E = 0$, $f = 1MHz$	-	5	-	pF
On resistance	R_{ON}	$f = 1KHz$, $I_B = 1mA$, $V_{IN} = 0.3V$	-	0.6	-	Ω

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

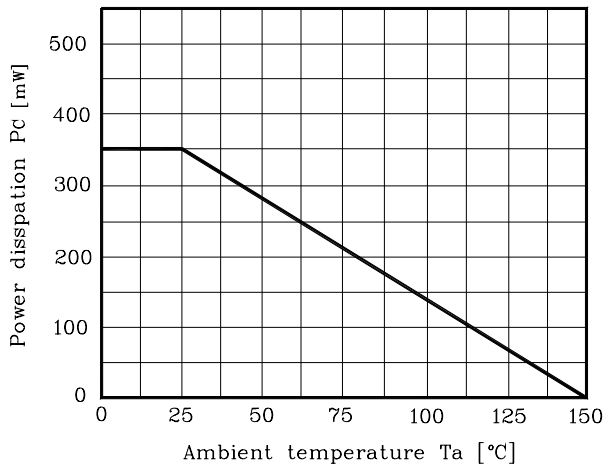


Fig. 2 $V_{CE(sat)} - I_C$

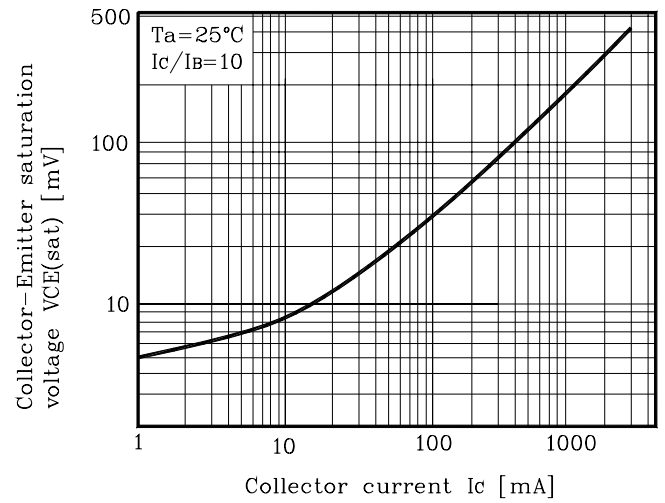


Fig. 3 $C_{ob} - V_{CB}$

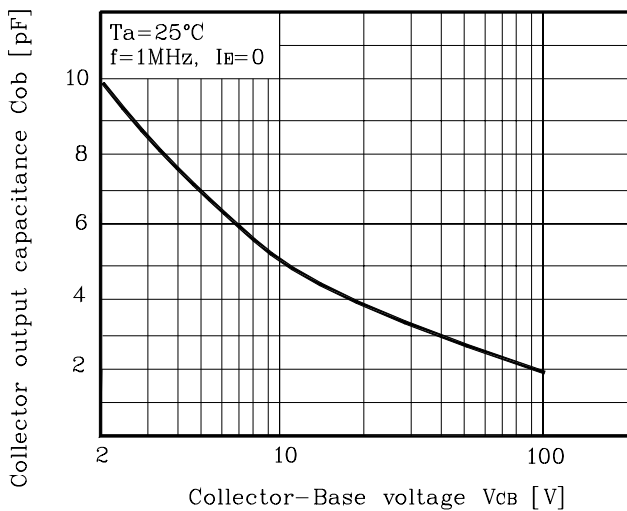


Fig. 4 $h_{FE} - I_C$

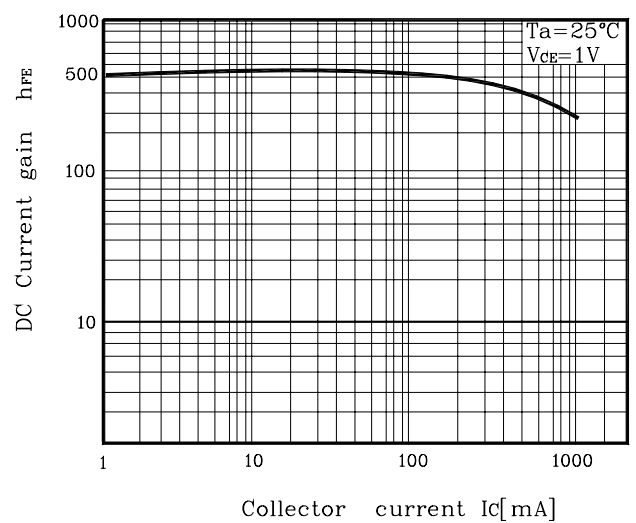
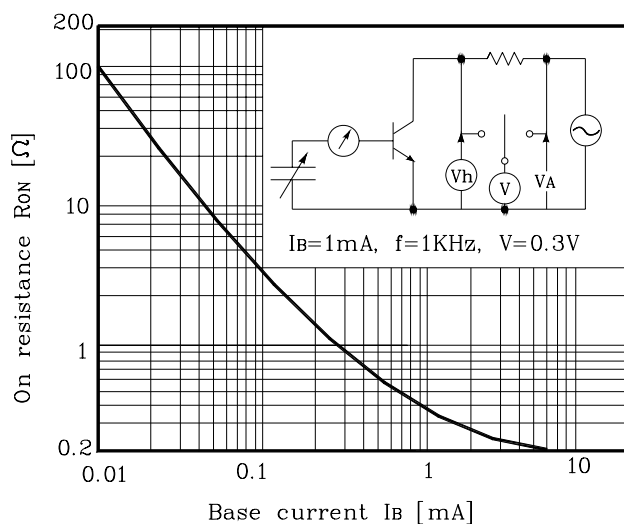
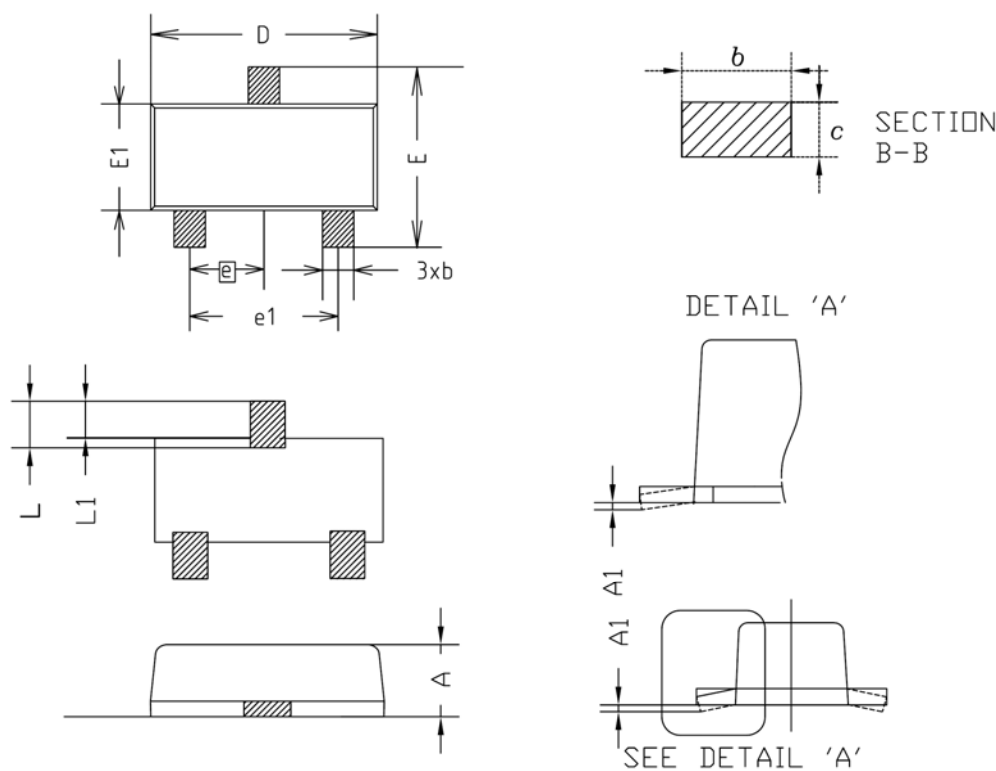


Fig. 5 $R_{ON} - I_B$

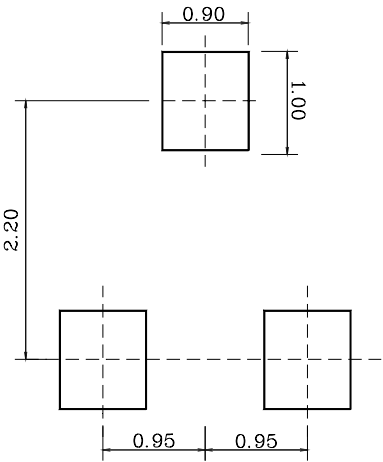


Outline Dimension



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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