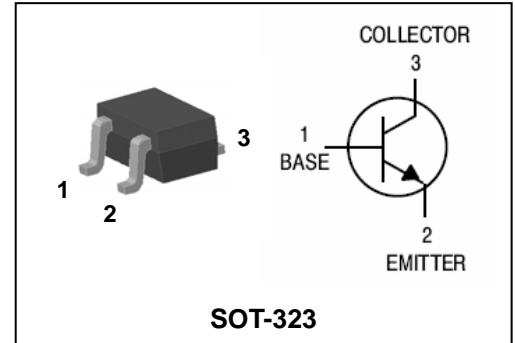


## Features

- Low saturation medium current application
- Extremely low collector saturation voltage
- Suitable for low voltage large current drivers
- High DC current gain and large current capability
- Low on resistance :  $R_{ON}=0.6\Omega(\text{Max.})$  ( $I_B=1\text{mA}$ )

## PIN Connection



## Ordering Information

Type NO.	Marking	Package Code
STD123U	$\frac{123}{\text{① ②}}$	SOT-323

① Device Code ② Year&Week Code

## Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CBO}$	20	V
Collector-Emitter voltage	$V_{CEO}$	15	V
Emitter-Base voltage	$V_{EBO}$	6.5	V
Collector current	$I_C$	1	A
Collector dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ 150	°C

## Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	$BV_{CBO}$	$I_C=50\mu\text{A}, I_E=0$	20	-	-	V
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C=1\text{mA}, I_B=0$	15	-	-	V
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_E=50\mu\text{A}, I_C=0$	6.5	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0$	-	-	0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$	-	-	0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	150	-	-	-
Collector-Emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	0.1	0.3	V
Transistor frequency	$f_T$	$V_{CE}=5\text{V}, I_C=50\text{mA}$	-	260	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	5	-	pF
On resistance	$R_{ON}$	$f=1\text{KHz}, I_B=1\text{mA}, V_{IN}=0.3\text{V}$	-	0.6	-	$\Omega$

Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

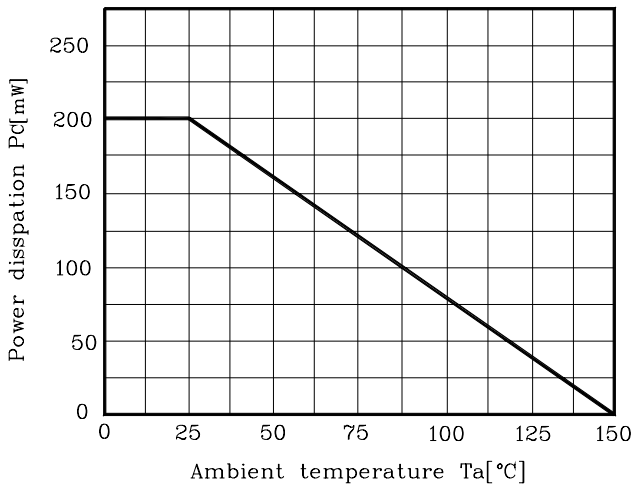


Fig. 2  $V_{CE(sat)} - I_C$

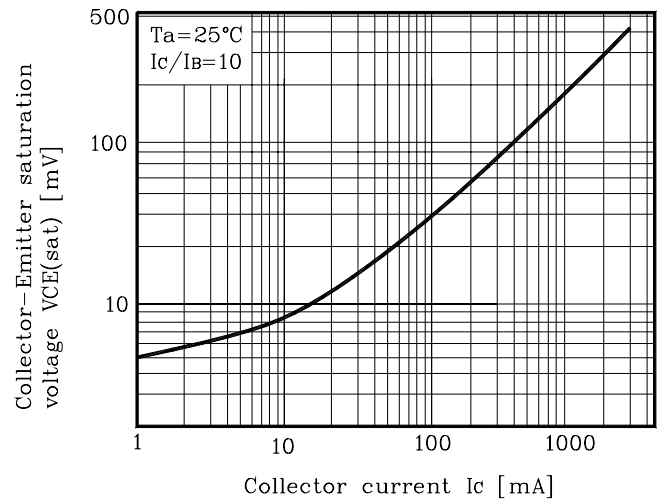


Fig. 2  $C_{ob} - V_{CB}$

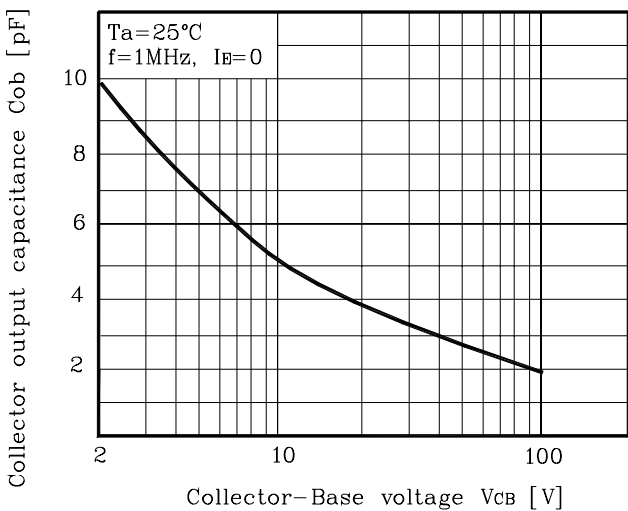


Fig. 4  $h_{FE} - I_C$

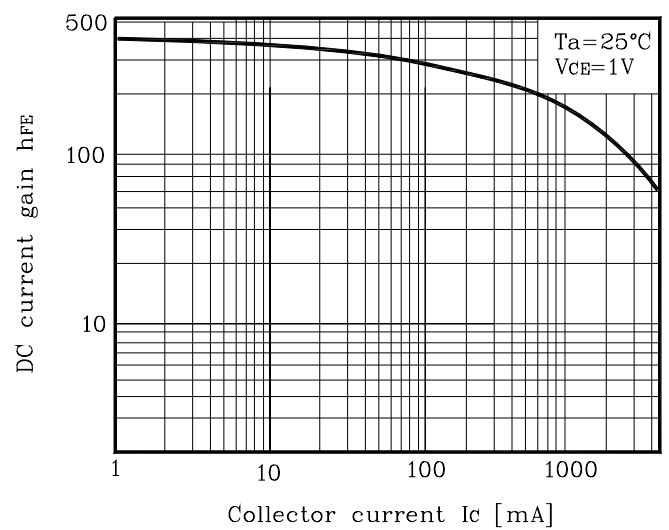
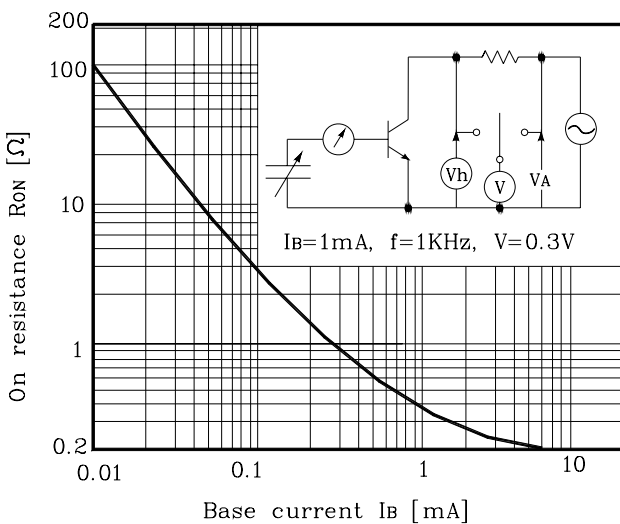
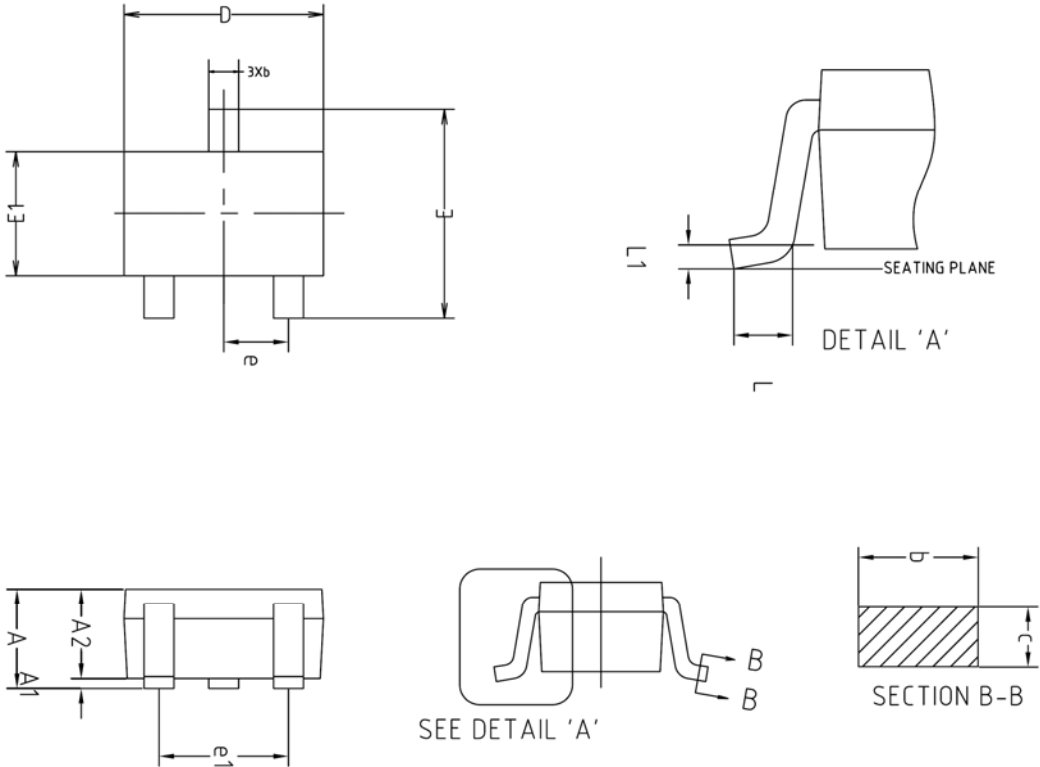


Fig. 5  $R_{ON} - I_B$

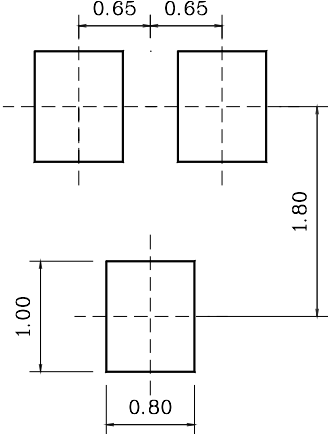


Outline Dimension



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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