

Features

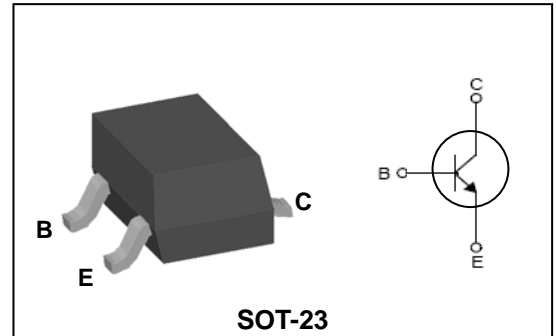
- Low saturation medium current application
- Extremely low collector saturation voltage
- Suitable for low voltage large current drivers
- High DC current gain and large current capability
- Low on resistance : $R_{ON}=0.6\Omega(\text{Max.})$ ($I_B=1\text{mA}$)

Ordering Information

Type No.	Marking	Package Code
STD123S	$\frac{123}{\text{① ②}}$	SOT-23

① Device Code ② Year&Week Code

PIN Connection



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^*	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}	$I_C=50\mu\text{A}, I_E=0$	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	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=6\text{V}, I_C=0$	-	-	0.1	μA
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	-	Ω

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

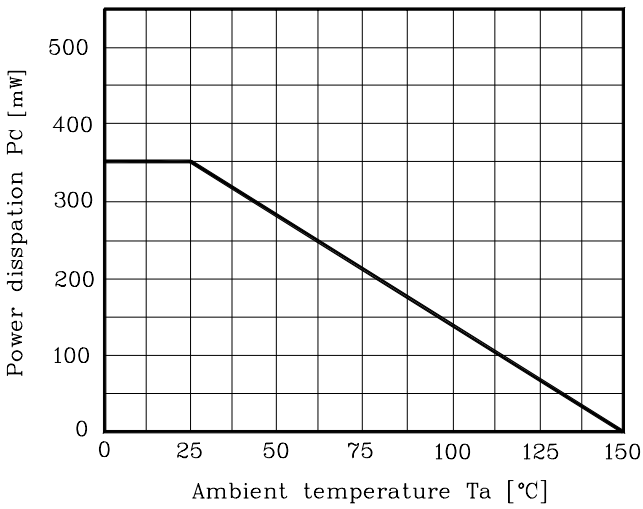


Fig. 2 $V_{CE(sat)} - I_C$

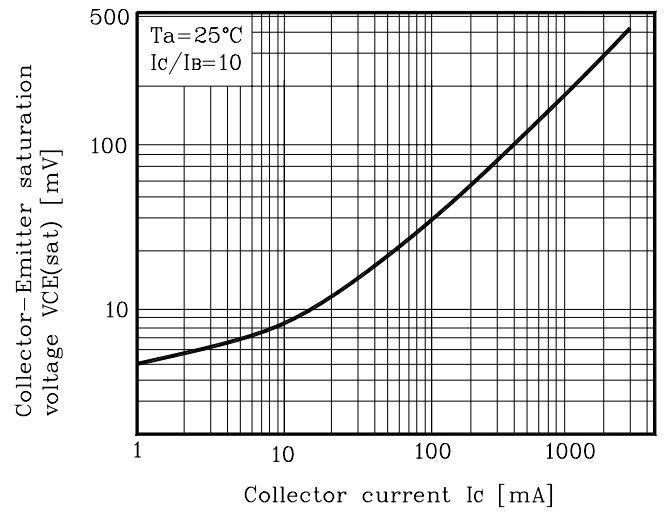


Fig. 2 $C_{ob} - V_{CB}$

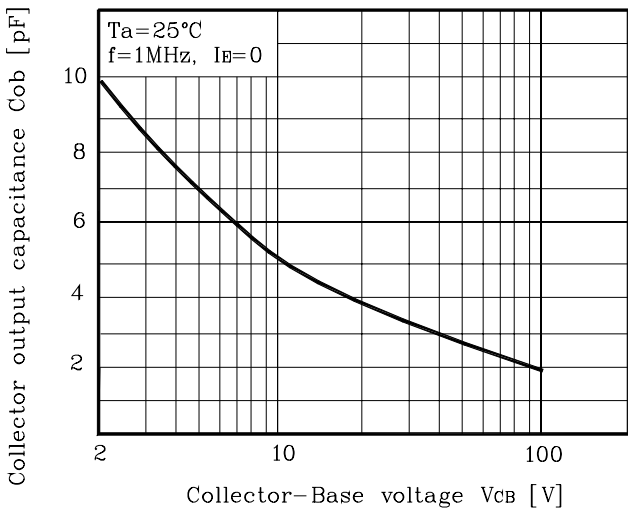


Fig. 4 $h_{FE} - I_C$

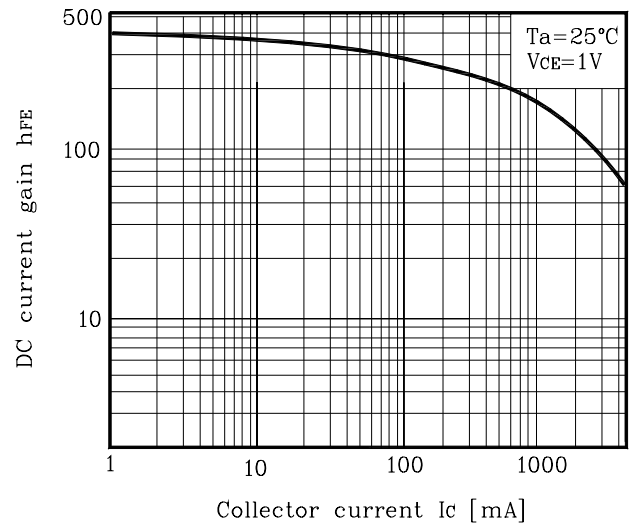
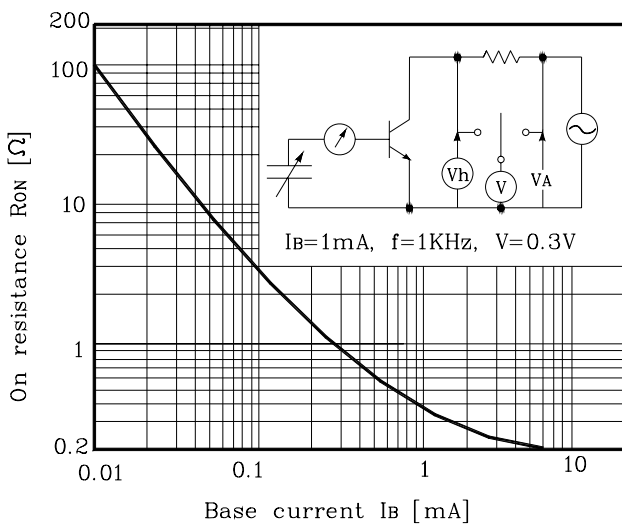
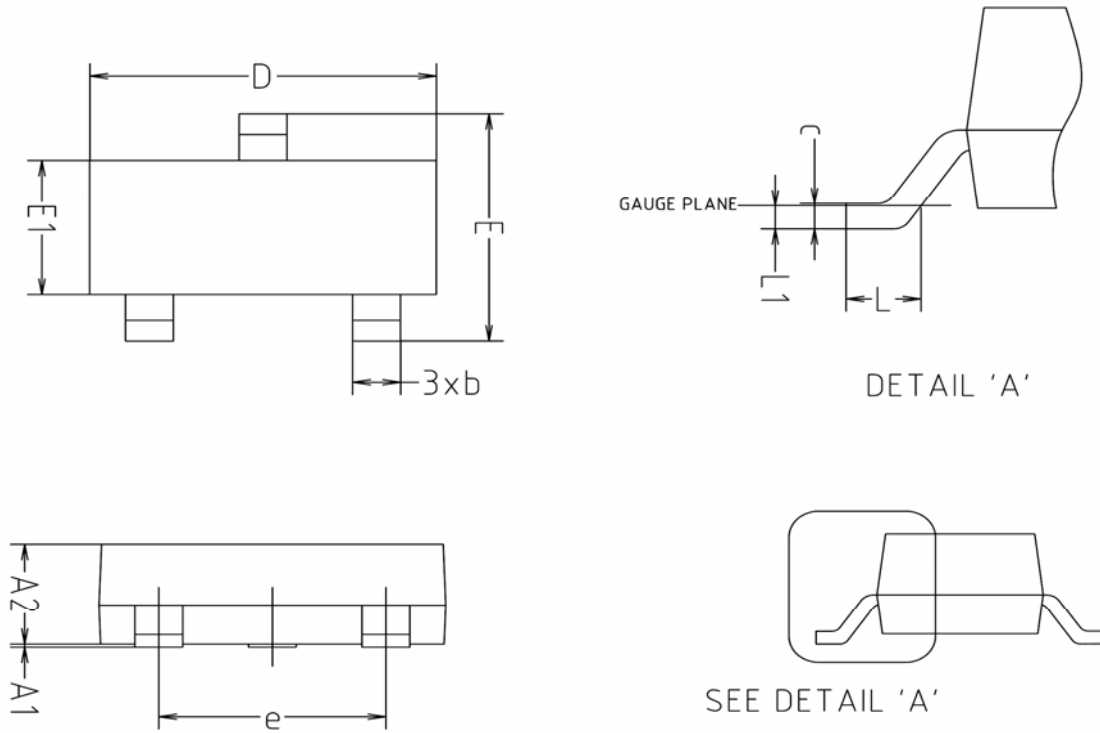


Fig. 5 $R_{ON} - I_B$

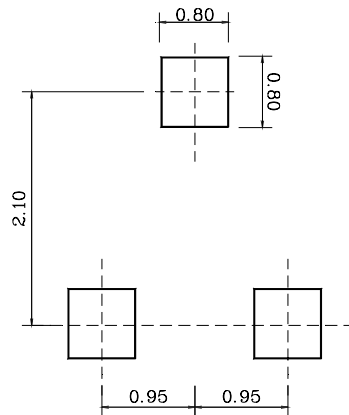


Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
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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