AUK Semiconductor

STD123U

NPN Silicon Transistor

Features

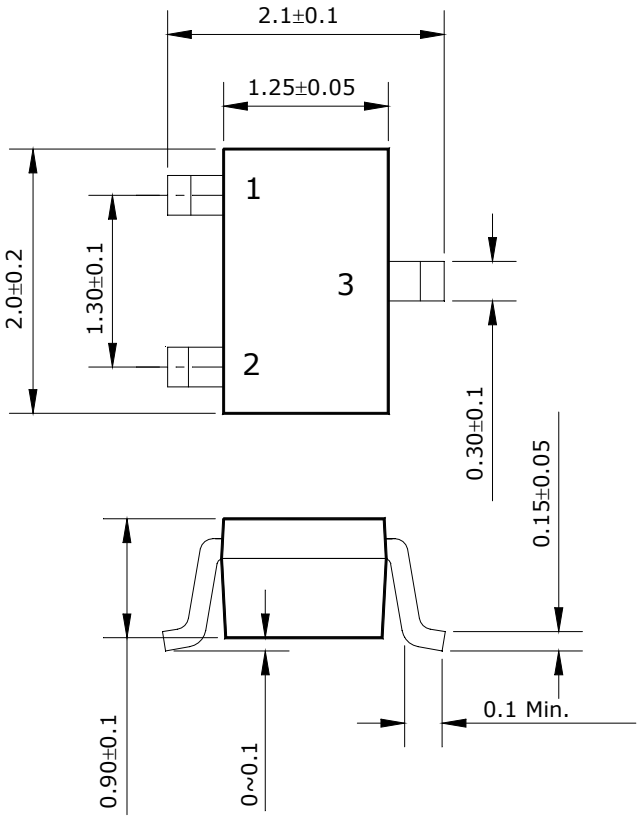
- Low saturation medium current application
- Extremely low collector saturation voltage
- Suitable for low voltage large current drivers
- High DC current gain and large current capability
- Low on resistance : R_{ON}=0.6Ω(Max.) (I_B=1mA)

Ordering Information

Type NO.	Marking	Package Code
STD123U	123	SOT-323

Outline Dimensions

unit : mm



PIN Connections
1. Base
2. Emitter
3. Collector

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=50μA, I_E=0	20	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	I_C=1mA, I_B=0	15	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	I_E=50μA, I_C=0	6.5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=20V, 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}=1V, I_C=100mA	150	-	-	-
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

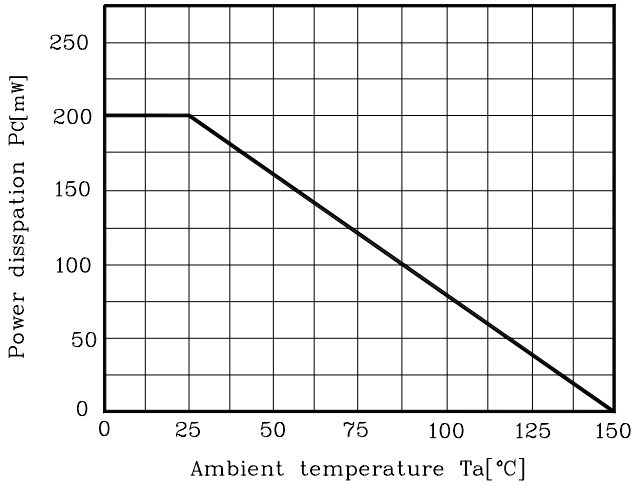


Fig. 2 $V_{CE(sat)}$-I_C

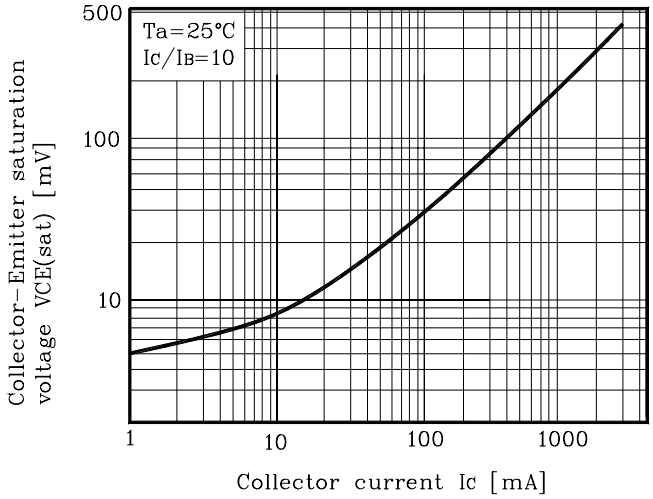


Fig. 2 C_{Ob}-V_{CB}

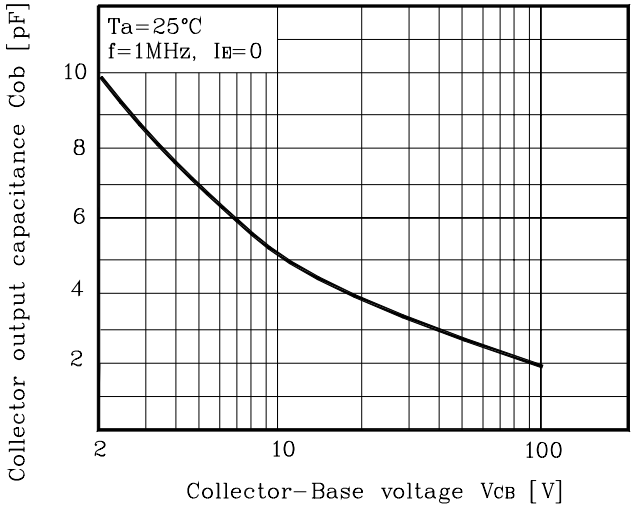


Fig. 4 h_{FE}-I_C

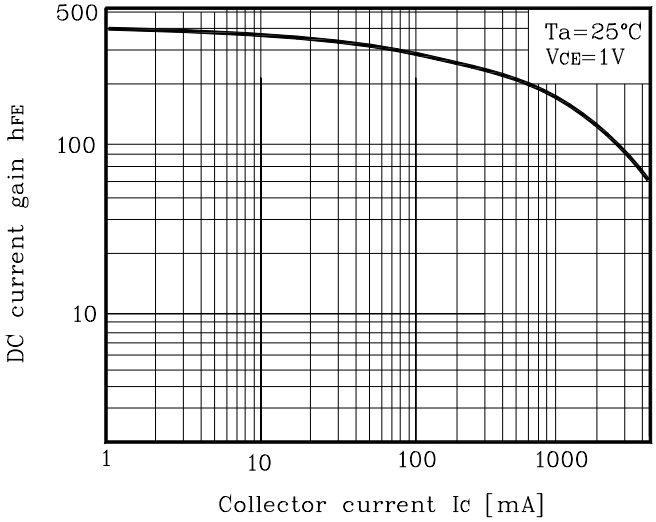
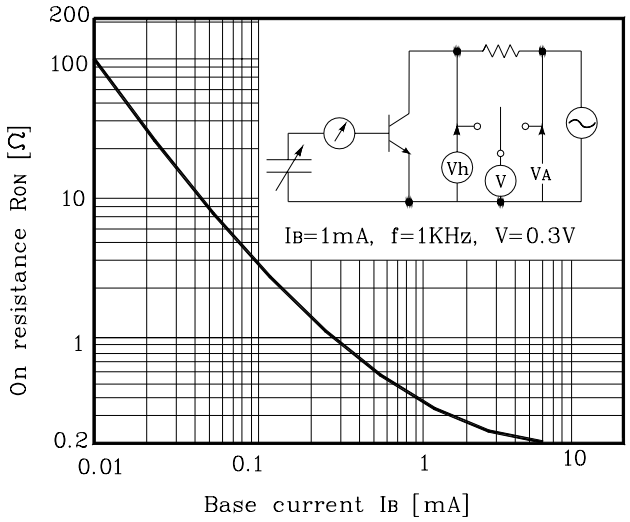



Fig. 5 R_{ON}-I_B