

Features

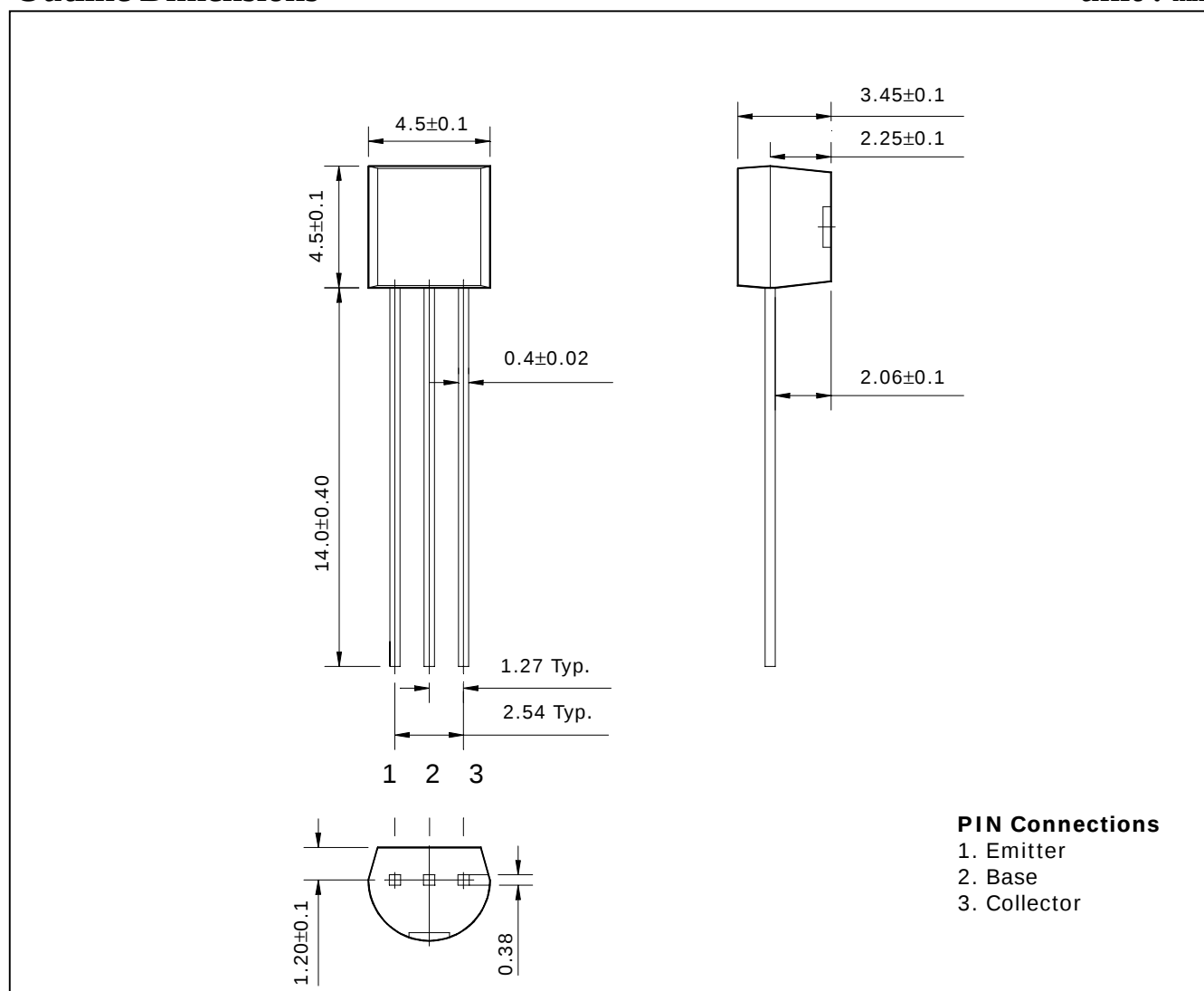
- Low saturation medium current application
- Extremely low collector saturation voltage
- Suitable for low voltage large current drivers
- High DC current gain and large current capability
- Low on resistance : $R_{ON}=0.6\Omega(\text{Max.})$ ($I_B=1\text{mA}$)

Ordering Information

Type NO.	Marking	Package Code
STS123	STS123	TO-92

Outline Dimensions

unit : mm



Absolute maximum ratings

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	625	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ 150	°C

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 50\mu A, I_E = 0$	20	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	15	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 50\mu A, I_C = 0$	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 $V_{CE(sat)}-I_C$

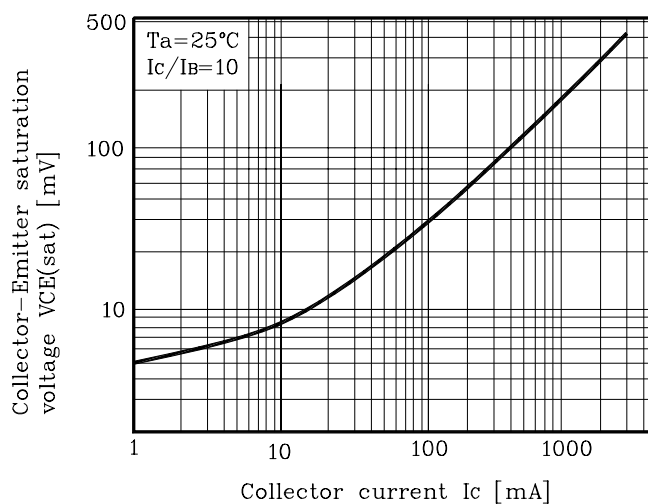


Fig. 1 $C_{ob}-V_{CB}$

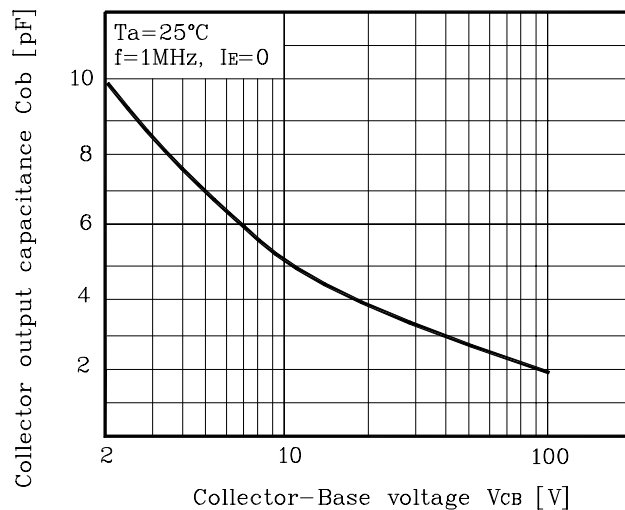


Fig. 3 $h_{FE}-I_C$

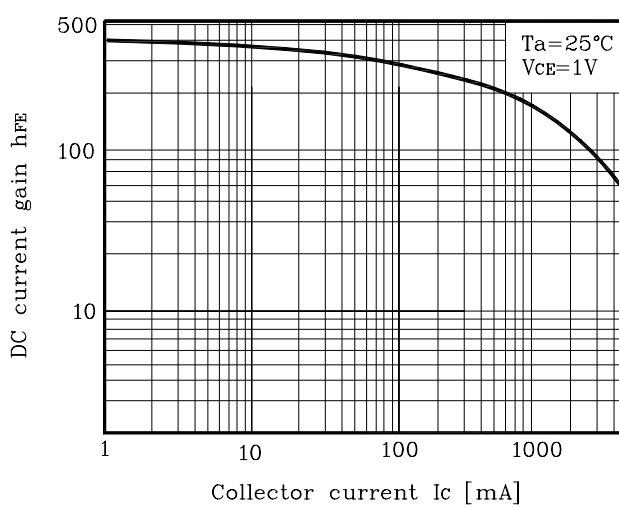


Fig. 4 $R_{ON}-I_B$

