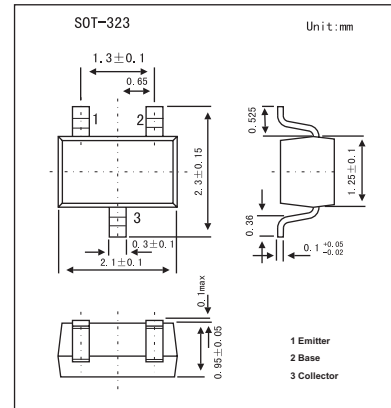


## PNP Epitaxial Planar Silicon Transistors

## 2SA1688

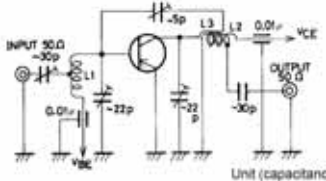
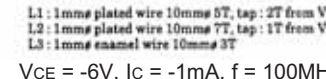
## ■ Features

- Very small-sized package.
- High power gain.

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-30	V
Collector-emitter voltage	$V_{CEO}$	-20	V
Emitter-base voltage	$V_{EB0}$	-5	V
Collector current	$I_C$	-30	mA
Collector dissipation	$P_C$	150	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -10\text{V}$ , $I_E = 0$			-0.1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -4\text{V}$ , $I_C = 0$			-0.1	$\mu\text{A}$
DC current Gain	$h_{FE}$	$V_{CE} = -6\text{V}$ , $I_C = -1\text{mA}$	60		270	
Gain bandwidth product	$f_T$	$V_{CE} = -6\text{V}$ , $I_C = -1\text{mA}$	150	230		MHz
Reverse transfer capacitance	$C_{re}$	$V_{CB} = -6\text{V}$ , $f = 1\text{MHz}$		1.1	1.7	pF
Base-collector time constant	$bb'C_c$	$V_{CE} = -6\text{V}$ , $I_C = -1\text{mA}$ , $f = 31.9\text{MHz}$		11	20	ps
Voltage gain	PG			22		dB
Noise figure	NF	 Unit (capacitance : F) L1 : 1mm plated wire 10mm 5T, tap : 2T from $V_{BB}$ side L2 : 1mm plated wire 10mm 7T, tap : 1T from $V_{CC}$ side L3 : 1mm enamel wire 10mm 3T $V_{CE} = -6\text{V}$ , $I_C = -1\text{mA}$ , $f = 100\text{MHz}$		2.5		dB

■  $h_{FE}$  Classification

Marking	E		
Rank	3	4	5
$h_{FE}$	60~120	90~180	135~270