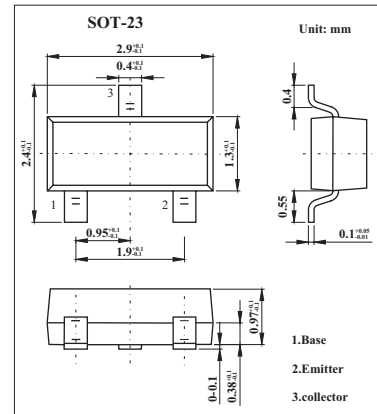


## NPN Silicon Transistor

## 2SC1623



## ■ Features

- High DC Current Gain:  
hFE = 200 TYP.  
VCE = 6.0 V, IC = 1.0 mA
- High Voltage:  
VCEO = 50 V

## ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector to base voltage	V <sub>CB0</sub>	60	V
Collector to emitter voltage	V <sub>CEO</sub>	50	V
Emitter to base voltage	V <sub>EBO</sub>	5	V
Collector current (DC)	I <sub>C</sub>	100	mA
Collector power dissipation	P <sub>C</sub>	200	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-55 to +150	°C

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 60V, I <sub>E</sub> = 0			0.1	μA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0			0.1	μA
DC current gain *	h <sub>FE</sub>	V <sub>CE</sub> = 6V, I <sub>C</sub> = 1mA	90	200	600	
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> = 10mA		0.15	0.3	V
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> = 10mA		0.86	1	V
Base-emitter voltage *	V <sub>BE</sub>	V <sub>CE</sub> = 6V, I <sub>C</sub> = 1mA	0.55	0.62	0.65	V
Output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 6V, I <sub>E</sub> = 0, f = 1.0MHz		3.0		pF
Transiton Frequency	f <sub>T</sub>	V <sub>CE</sub> = 6V, I <sub>E</sub> = -10mA		250		MHz

\*. PW ≤ 350μs, duty cycle ≤ 2%

■ h<sub>FE</sub> Classification

Marking	L4	L5	L6	L7
h <sub>FE</sub>	90 to 180	135 to 270	200 to 400	300 to 600

# 2SC1623

■ Typical Characteristics

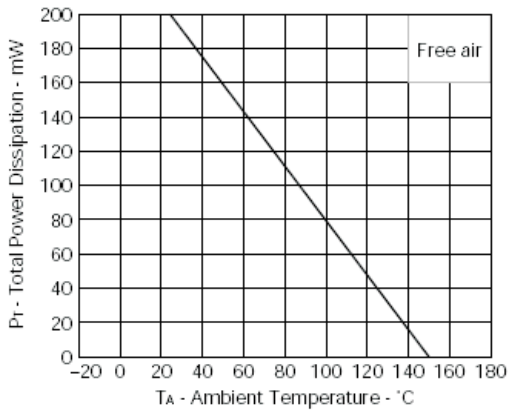


Fig.1 Total power dissipation vs. ambient temperature

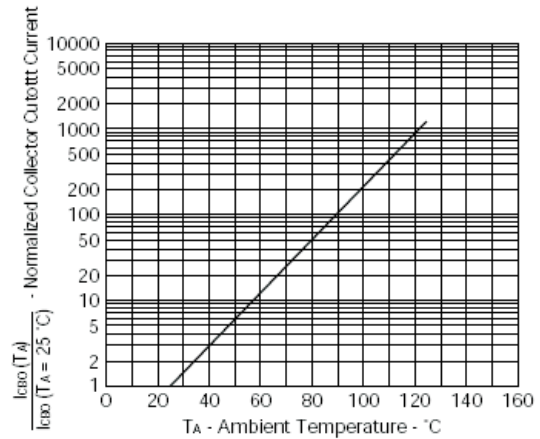


Fig.2 Normalized collector cutoff current vs. ambient temperature

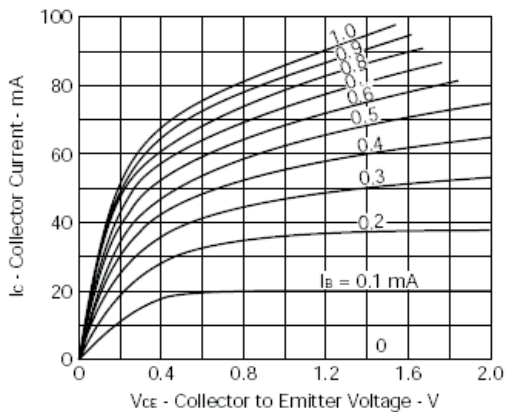


Fig.3 Collector current vs. collector to emitter voltage

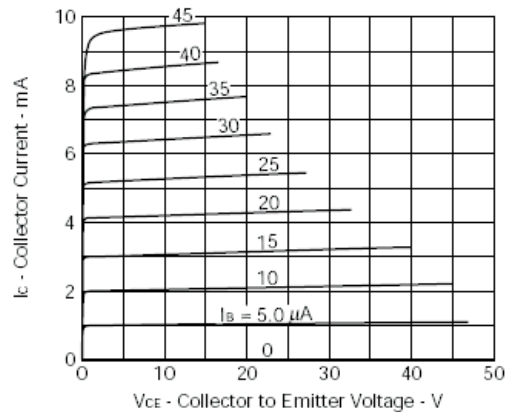


Fig.4 Collector current vs. collector to emitter voltage

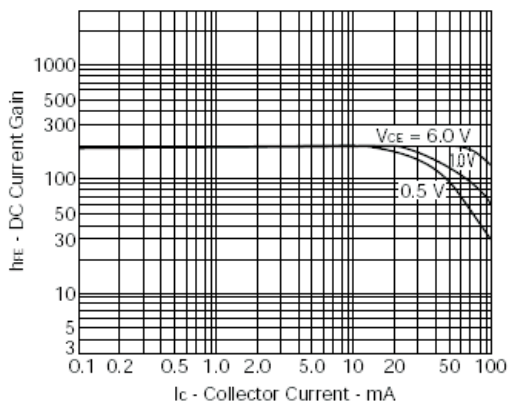


Fig.5 DC current gain vs. collector current

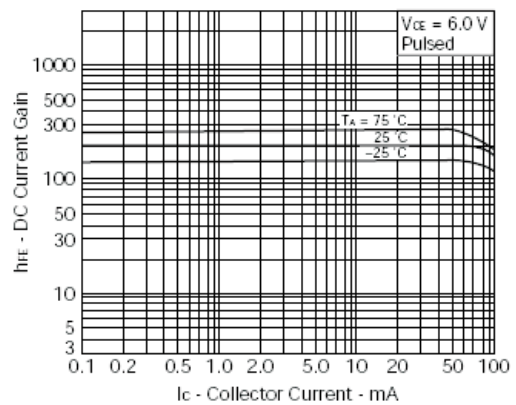


Fig.6 DC current gain vs. Collector current

2SC1623

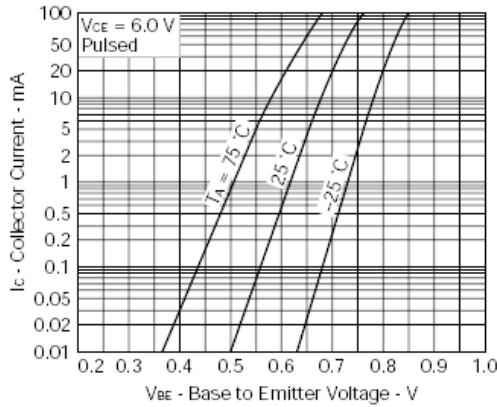


Fig. 7 Collector current vs. base to emitter voltage

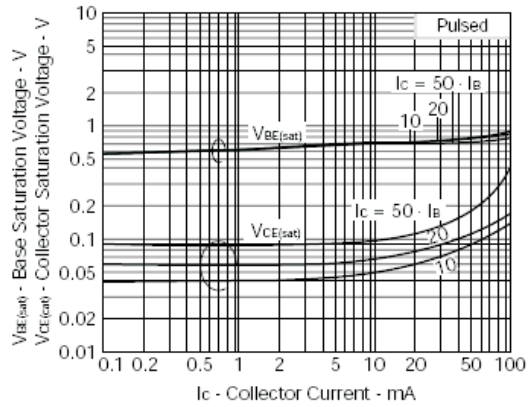


Fig. 8 Collector and base saturation voltage vs. collector current

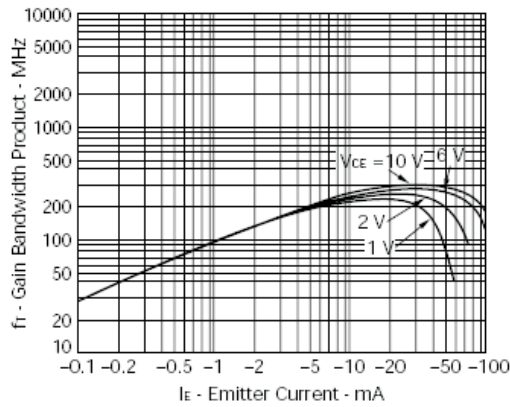


Fig. 9 Gain bandwidth product vs. emitter current

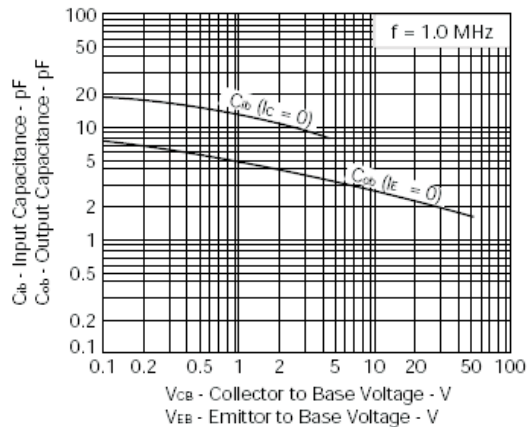


Fig. 10 Input and output capacitance vs. reverse voltage

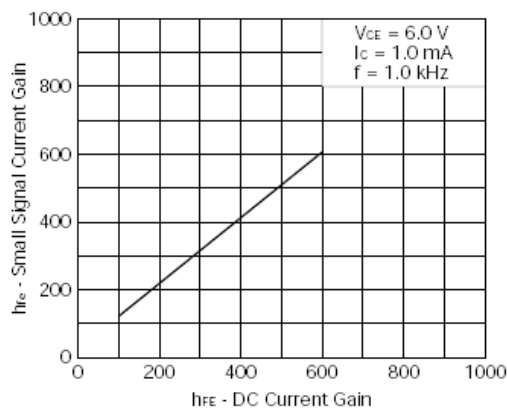


Fig. 11 Small signal current gain vs. DC current gain

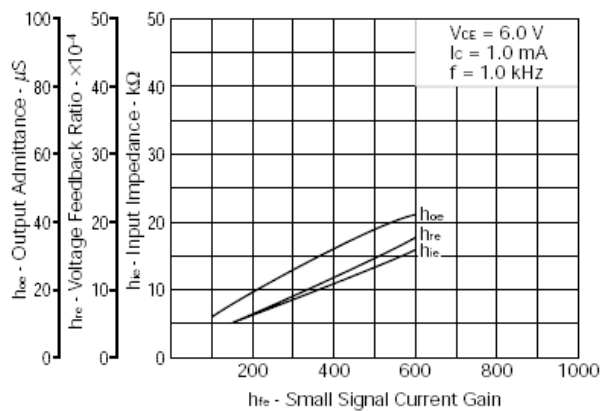


Fig. 12 Input impedance voltage feedback ratio and output admittance vs. small signal current gain

2SC1623

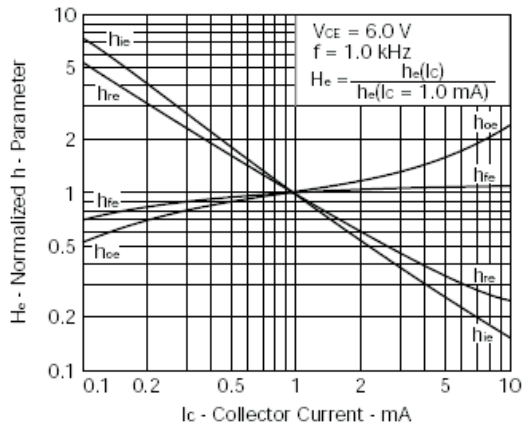


Fig.13 Normalized h-parameter vs.collector current

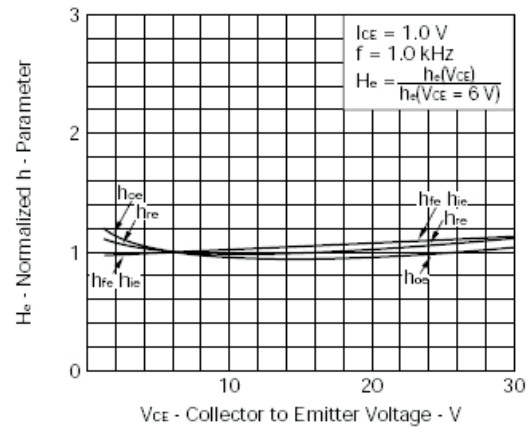


Fig.14 Normalized h-parameter vs.collector to emitter voltage