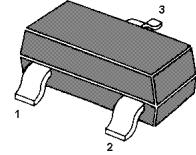


NPN Silicon Epitaxial Planar Transistor

for RF amplifier.

The transistor is subdivided into three groups, R, O and Y, according to its DC current gain.



1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_s	-55 +150	$^\circ\text{C}$

Characteristics at $T_{amb}=25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=6\text{V}$, $I_C=1\text{mA}$ Current Gain Group	R h_{FE}	40	-	80	-
	O h_{FE}	70	-	140	-
	Y h_{FE}	120	-	240	-
Collector Emitter Saturation Voltage at $I_C=10\text{mA}$, $I_B=1\text{mA}$	$V_{CE(sat)}$	-	-	0.3	V
Collector Cutoff Current at $V_{CB}=30\text{V}$	I_{CBO}	-	-	0.5	μA
Emitter Cutoff Current at $V_{EB}=4\text{V}$	I_{EBO}	-	-	0.5	μA
Collector Base Breakdown Voltage at $I_C=10\mu\text{A}$	$V_{(BR)CBO}$	30	-	-	V
Collector Emitter Breakdown Voltage at $I_C=5\text{mA}$	$V_{(BR)CEO}$	20	-	-	V
Emitter Base Breakdown Voltage at $I_E=10\mu\text{A}$	$V_{(BR)EBO}$	4	-	-	V
Transition Frequency at $V_{CE}=6\text{V}$, $I_E=-1\text{mA}$	f_T	-	550	-	MHz
Output Capacitance at $V_{CB}=6\text{V}$, $f=1\text{MHz}$	C_{OB}	-	1.4	-	pF

Electrical Characteristic Curves

Fig. 1 P_C - T_a

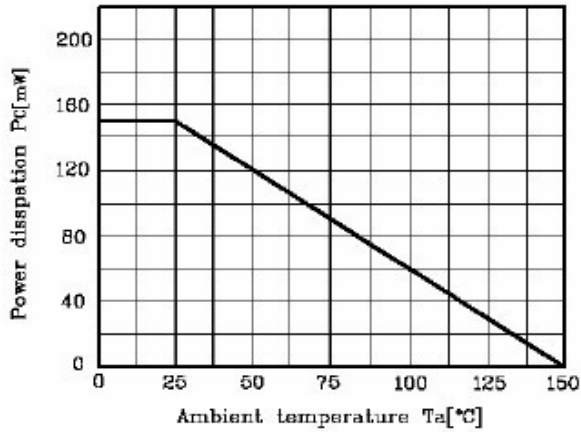


Fig. 2 I_C - V_{CE}

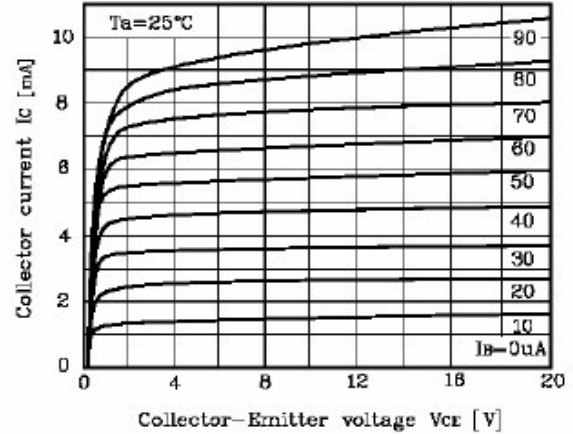


Fig. 3 h_{FE} - I_C

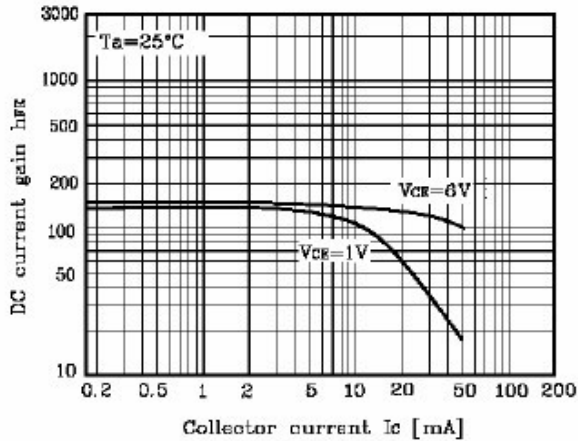


Fig. 4 f_T - I_E

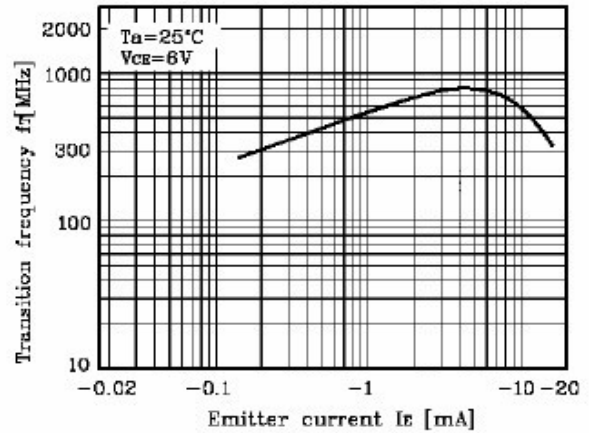


Fig. 5 C_{ob} - V_{CB} , C_{ib} - V_{EB}

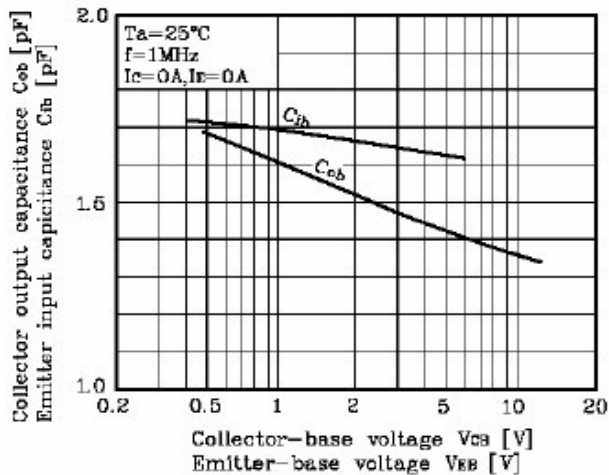
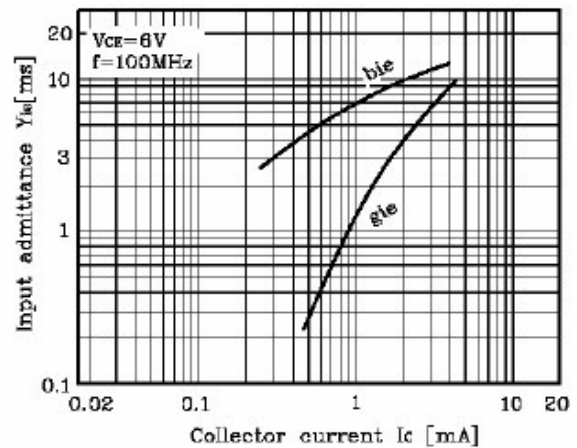


Fig. 6 Y_{ie} - I_C



Electrical Characteristic Curves

Fig. 7 I_C - Y_{oe}

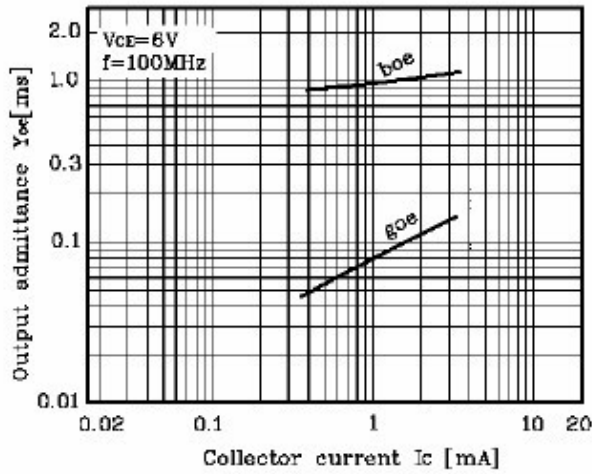


Fig. 8 I_C - Y_{fe}

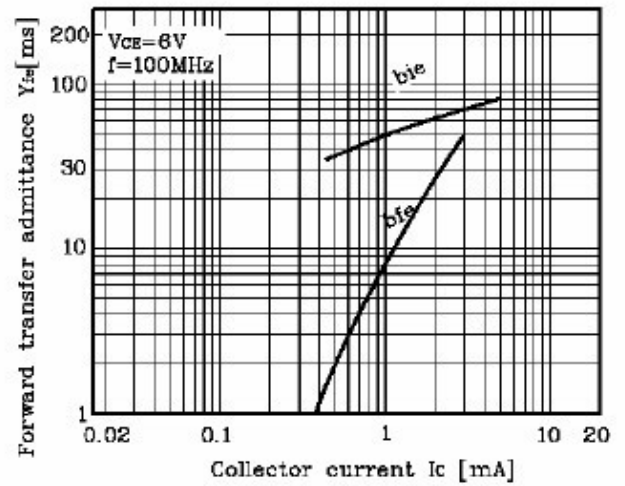
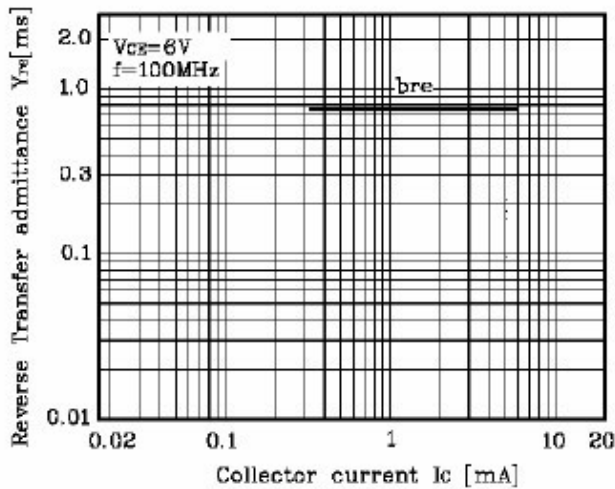


Fig. 9 I_C - Y_{re}

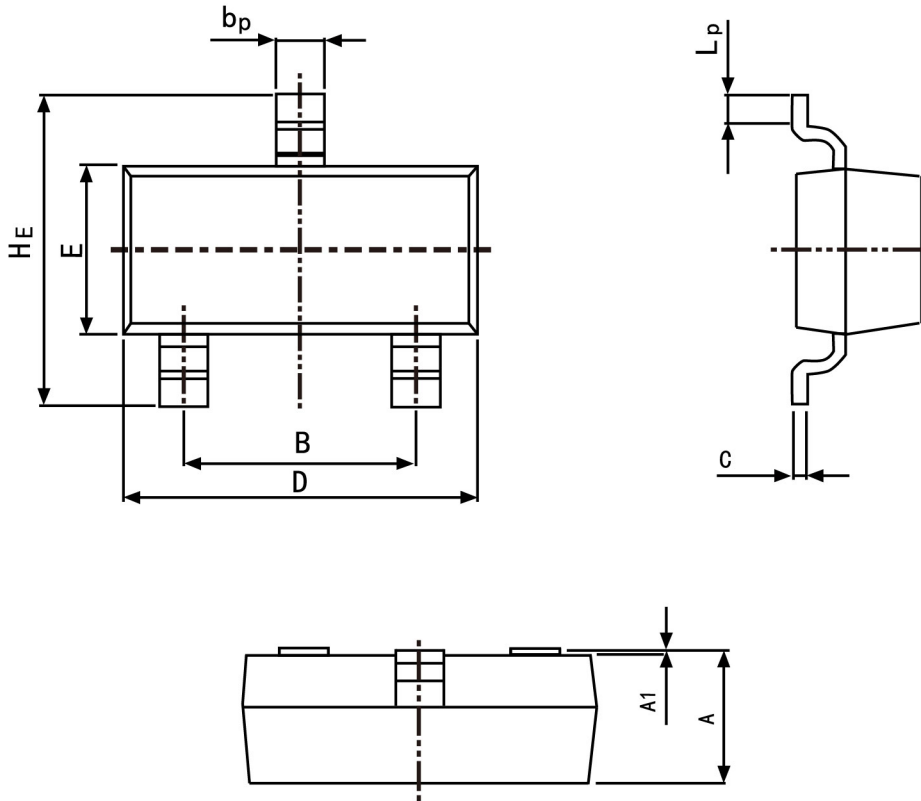




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.95	1.40
B	1.78	2.04
b_p	0.35	0.50
C	0.08	0.19
D	2.70	3.10
E	1.20	1.65
HE	2.20	3.00
A_1	0.100	0.013
L_p	0.20	0.50