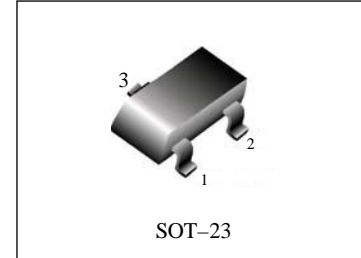


High-Frequency Amplifier Transistor

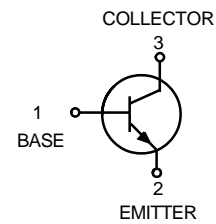
● **Features**

- 1.High transition frequency.(Typ. $f_T=1.5\text{GHz}$)
- 2.Small $r_{bb} \cdot C_c$ and high gain.(Typ.6ps)
- 3.Small NF.
- 4.We declare that the material of product compliance with RoHS requirements.



MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	18	V
Emitter-base voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Collector power dissipation	P_C	0.2	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55~+150	$^\circ\text{C}$



DEVICE MARKING

FTC3837=AP

● **ORDERING INFORMATION**

Device	Package	Shipping
FTC3837	SOT-23	3000/Tape & Reel

ELECTRICAL CHARACTERISTICS($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	-	-	V	$I_C=10\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	18	-	-	V	$I_C=1\text{mA}$
Emitter-base breakdown voltage	BV_{EBO}	3	-	-	V	$I_E=10\mu\text{A}$
Collector cutoff current	I_{CBO}	-	-	0.5	μA	$V_{CB}=10\text{V}$
Emitter cutoff current	I_{EBO}	-	-	0.5	μA	$V_{EB}=2\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.5	V	$I_C/I_B=20\text{mA}/4\text{mA}$
DC current transfer ratio	h_{FE}	56	-	180	-	$V_{CE}/I_C=10\text{V}/10\text{mA}$
Transition frequency	f_T	600	1500	-	MHz	$V_{CB}=10\text{V}, I_C=10\text{mA}, f=200\text{MHz}$
Output capacitance	C_{ob}	-	0.9	1.5	pF	$V_{CB}=10\text{V}, I_E=0\text{A}, f=1\text{MHz}$
Collector-base time constant	$r_{bb} \cdot C_c$	-	6	13	ps	$V_{CB}=10\text{V}, I_C=10\text{mA}, f=31.8\text{MHz}$
Noise factor	NF	-	4.5	-	dB	$V_{CE}=12\text{V}, I_C=2\text{mA}, f=200\text{MHz}, R_g=50\Omega$

● Electrical characteristic curves

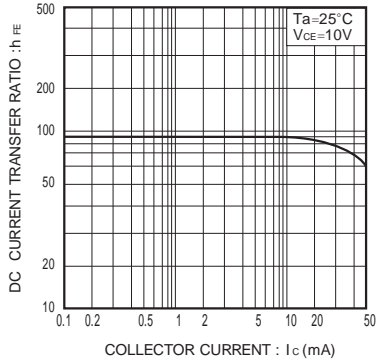


Fig.1 DC current gain vs. collector current

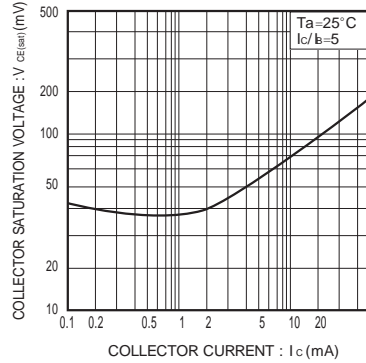


Fig.2 Collector-emitter saturation voltage vs. collector current

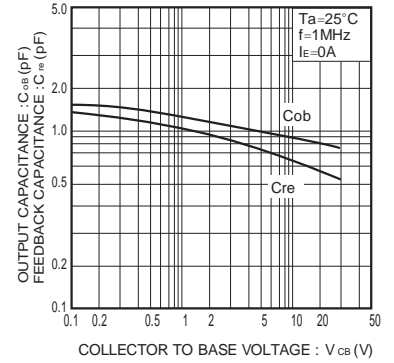


Fig.3 Capacitance vs. reverse bias voltage

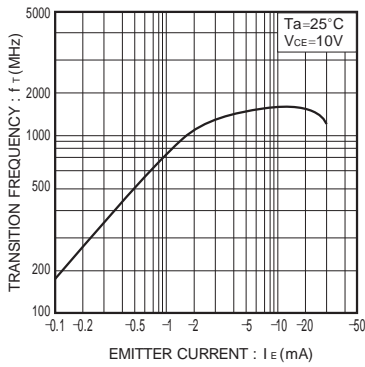


Fig.4 Gain bandwidth product vs. emitter current

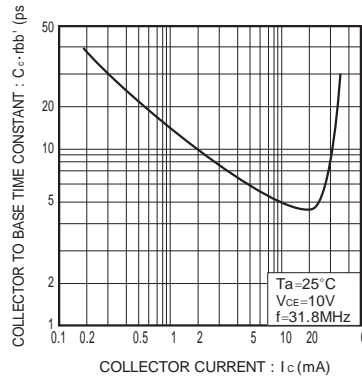


Fig.5 Collector to base time constant vs. collector current

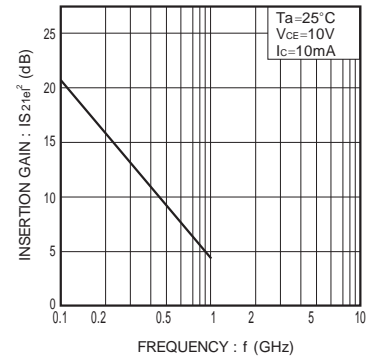


Fig.6 Insertion gain vs. frequency

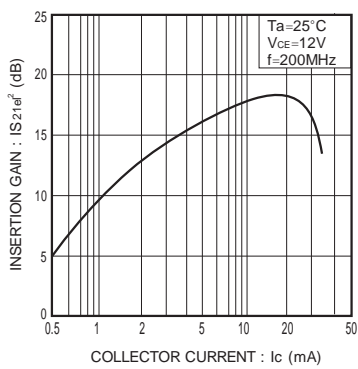


Fig.7 Insertion gain vs. collector current

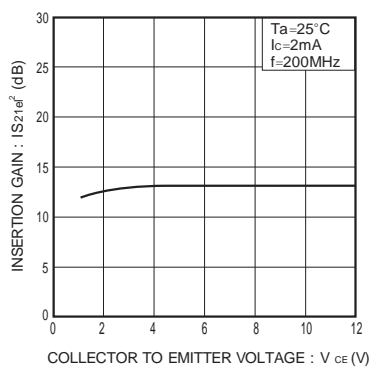


Fig.8 Insertion gain vs. collector voltage

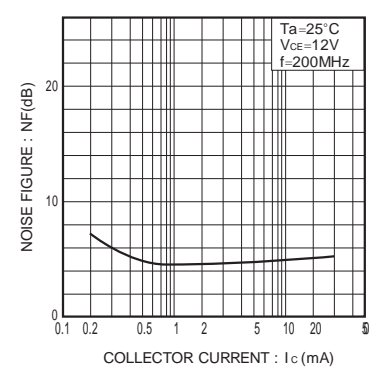
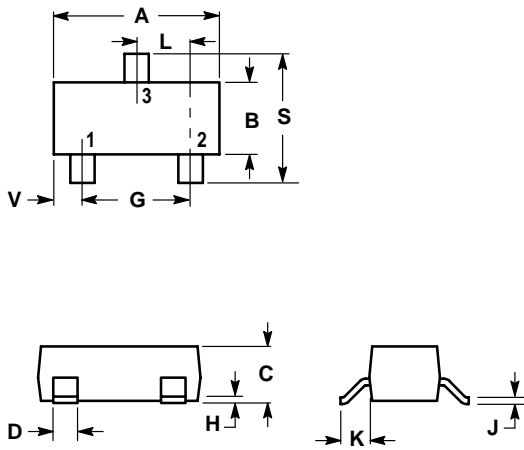


Fig.9 Noise factor vs. collector current

SOT-23

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

