

## Silicon Epitaxial Planar Transistor

## 2SA1037

### FEATURES

- Low  $I_{C,ICMAX.} = -150\text{mA}$ .
- Low  $V_{CE(sat)}$ . Ideal for low-voltage operation.



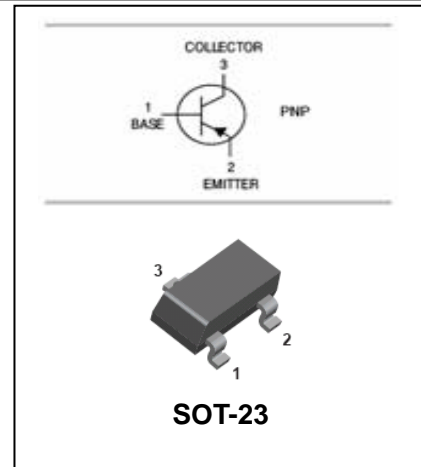
Lead-free

### APPLICATIONS

- Ideal for low-voltage operation.

### ORDERING INFORMATION

Type No.	Marking	Package Code
2SA1037	FQ,FR,FS	SOT-23



### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-50	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current -Continuous	-150	mA
$P_C$	Collector Dissipation	200	mW
$T_j, T_{stg}$	Junction and Storage Temperature	-55~150	°C

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

**Silicon Epitaxial Planar Transistor****2SA1037**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -50\mu A, I_E = 0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -50\mu A, I_C = 0$	-6			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -60V, I_E = 0$			-0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -6V, I_C = 0$			-0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE} = -6V, I_C = -1mA$	120		560	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50mA, I_B = -5mA$			-0.5	V
Transition frequency	$f_T$	$V_{CE} = -12V, I_C = -2mA$ $f = 30MHz$		140		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -12V, I_E = 0, f = 1MHz$		4.0	5.0	pF

**CLASSIFICATION OF  $h_{FE(1)}$** 

Rank	Q	R	S
Range	120-270	180-390	270-560
Marking	FQ	FR	FS

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### TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

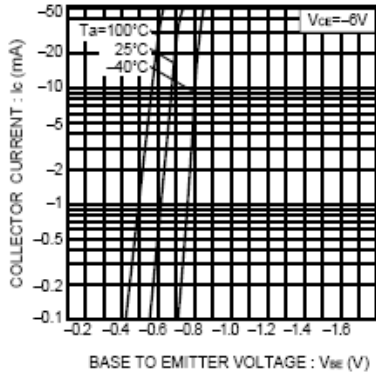


Fig.1 Grounded emitter propagation characteristics

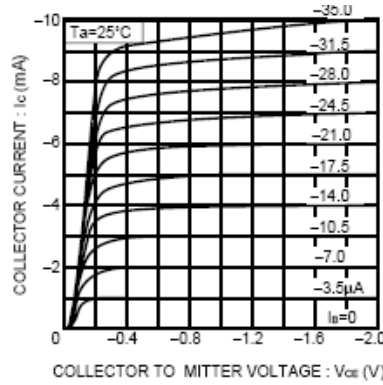


Fig.2 Grounded emitter output characteristics (I)

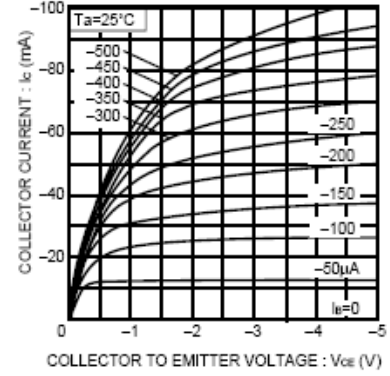


Fig.3 Grounded emitter output characteristics (II)

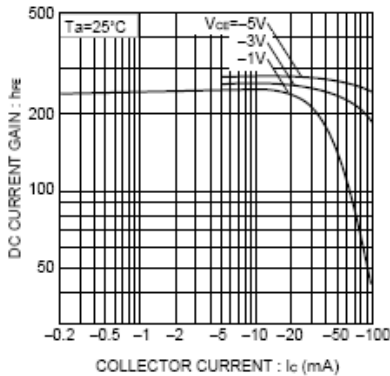


Fig.4 DC current gain vs. collector current (I)

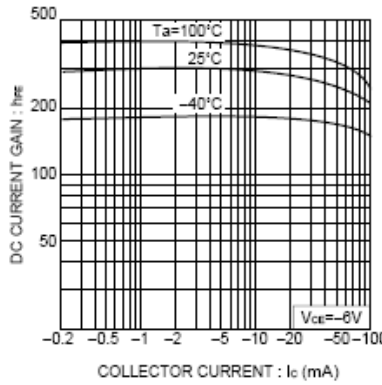


Fig.5 DC current gain vs. collector current (II)

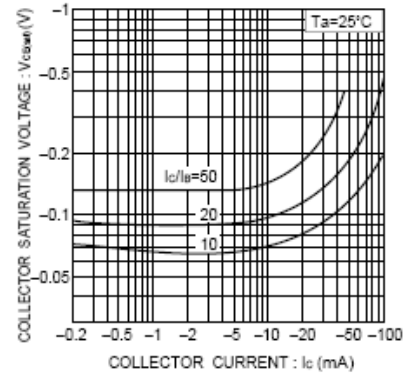


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

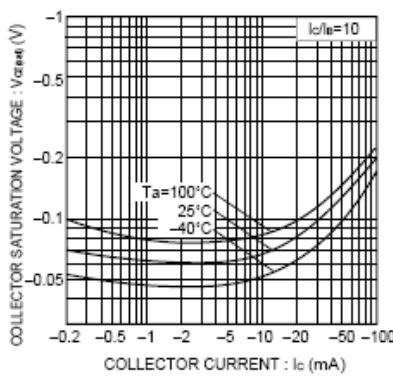


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

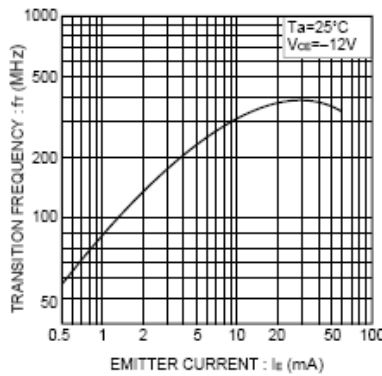


Fig.8 Gain bandwidth product vs. emitter current

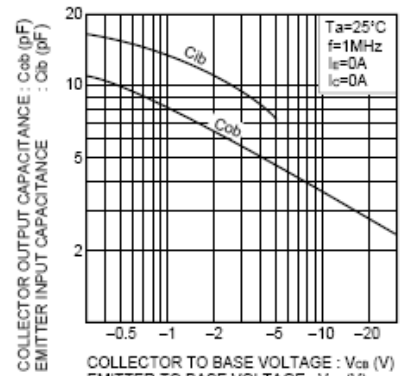


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

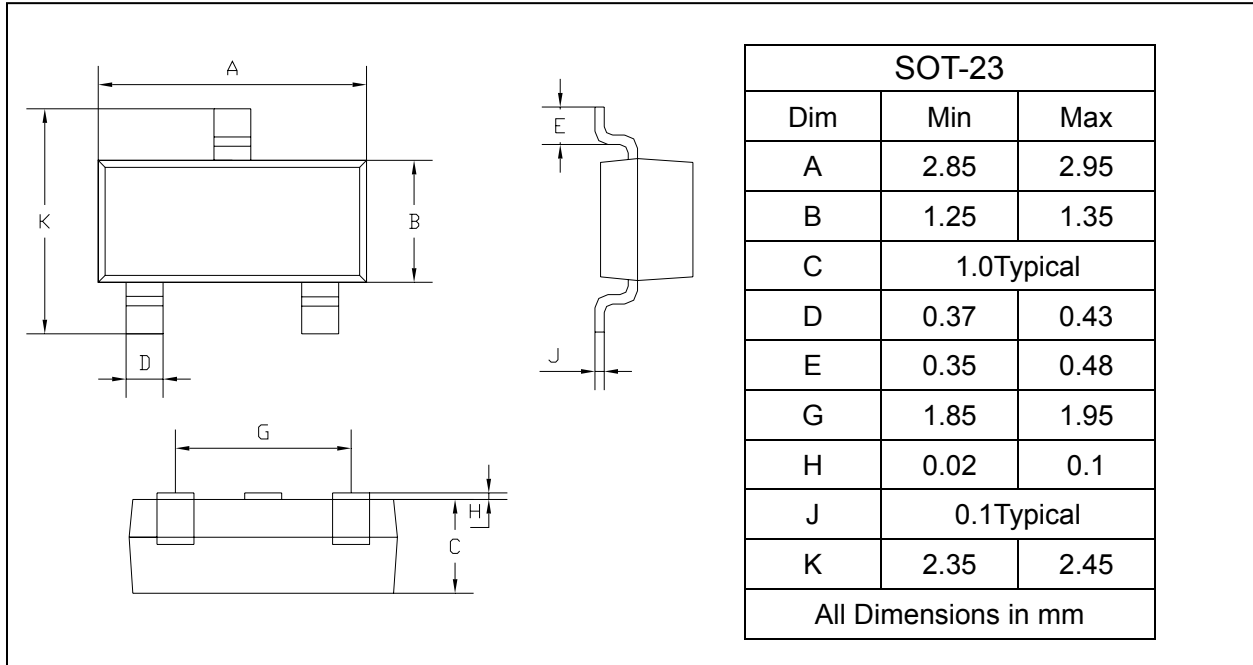
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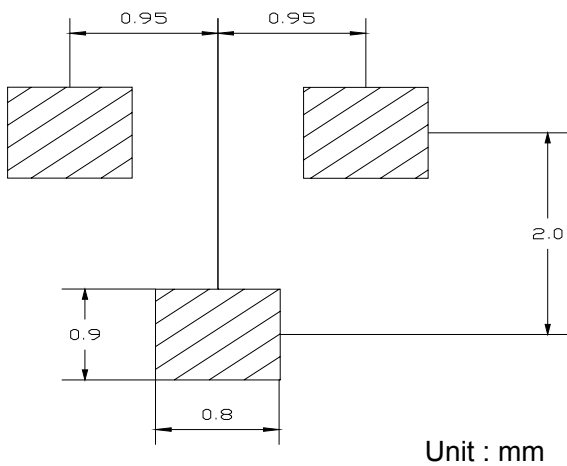
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
2SA1037	SOT-23	3000/Tape&Reel

[www.s-manuals.com](http://www.s-manuals.com)