

# General Purpose Transistors

## PNP Silicon Features

- We declare that the material of product compliance with RoHS requirements.  
**Pb-Free package is available**  
 RoHS product for packing code suffix "G"  
 Halogen free product for packing code suffix "H"  
 Moisture Sensitivity Level 1

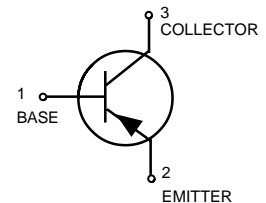
### ORDERING INFORMATION

Device	Package	Shipping
2SA1037AKxLT1	SOT-23	3000/Tape & Reel



### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	-50	V
Collector-Base Voltage	$V_{CBO}$	-60	V
Emitter-Base Voltage	$V_{EBO}$	-6.0	V
Collector Current — Continuous	$I_C$	-150	mAdc
Collector power dissipation	$P_C$	0.2	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C



### DEVICE MARKING

2SA1037AKxLT1 =FQ	2SA1037AKxLT1 =G3F	2SA1037AKxLT1 =FR
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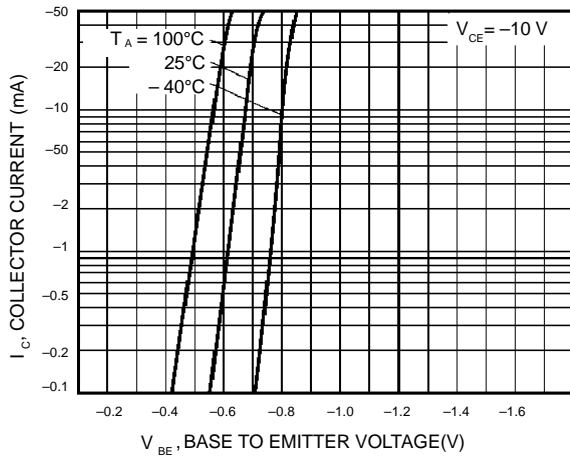
### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage ( $I_C = -1\text{ mA}$ )	$V_{(BR)CEO}$	- 50	—	—	V
Emitter-Base Breakdown Voltage ( $I_E = -50\ \mu\text{A}$ )	$V_{(BR)EBO}$	- 6	—	—	V
Collector-Base Breakdown Voltage ( $I_C = -50\ \mu\text{A}$ )	$V_{(BR)CBO}$	- 60	—	—	V
Collector Cutoff Current ( $V_{CB} = -60\text{ V}$ )	$I_{CBO}$	—	—	- 0.1	$\mu\text{A}$
Emitter cutoff current ( $V_{EB} = -6\text{ V}$ )	$I_{EBO}$	—	—	- 0.1	$\mu\text{A}$
Collector-emitter saturation voltage ( $I_C/I_B = -50\text{ mA} / -5\text{ mA}$ )	$V_{CE(sat)}$	—	—	-0.5	V
DC current transfer ratio ( $V_{CE} = -6\text{ V}, I_C = -1\text{ mA}$ )	$h_{FE}$	120	—	560	—
Transition frequency ( $V_{CE} = -12\text{ V}, I_E = 2\text{ mA}, f = 30\text{ MHz}$ )	$f_T$	—	140	—	MHz
Output capacitance ( $V_{CB} = -12\text{ V}, I_E = 0\text{ A}, f = 1\text{ MHz}$ )	$C_{ob}$	—	4.0	5.0	pF

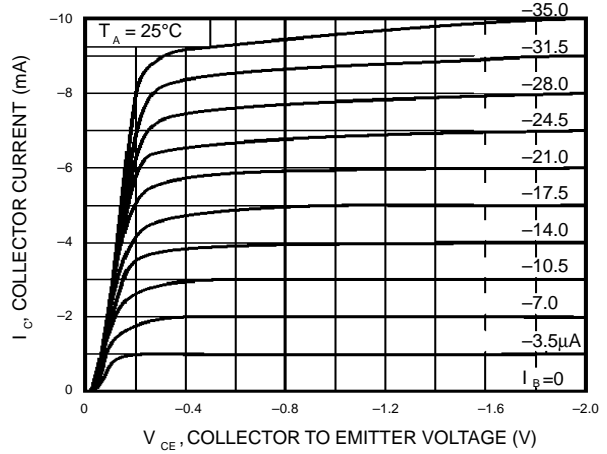
### $h_{FE}$ values are classified as follows:

*	Q	R	S
$h_{FE}$	120~270	180~390	270~560

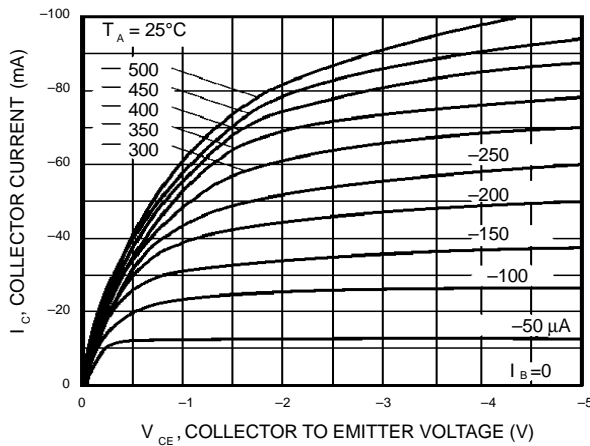
**Fig.1** Grounded emitter propagation characteristics



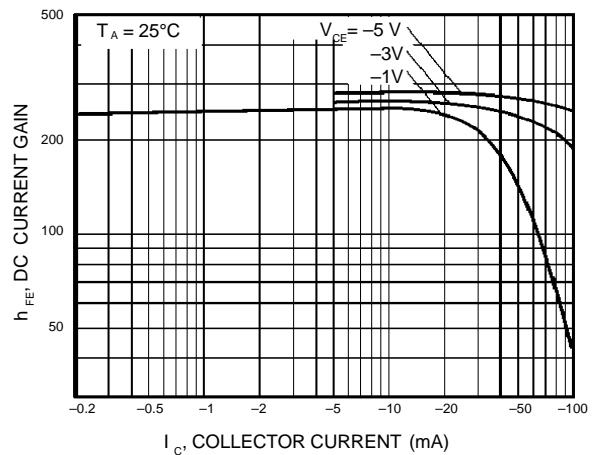
**Fig.2** Grounded emitter output characteristics(I)



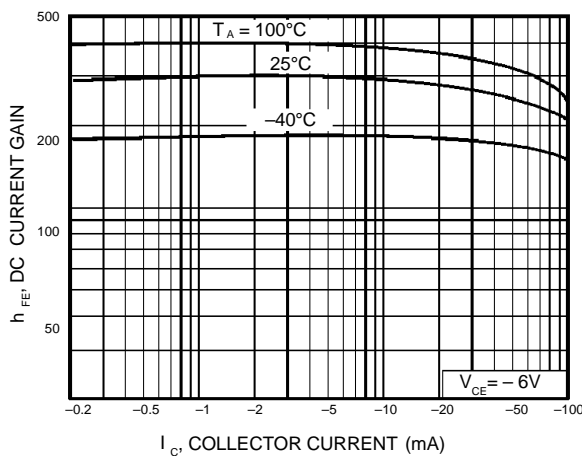
**Fig.3** Grounded emitter output characteristics(II)



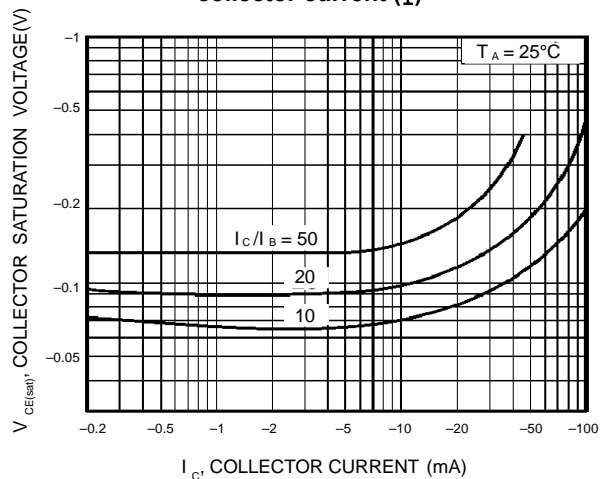
**Fig.4** DC current gain vs. collector current (I)



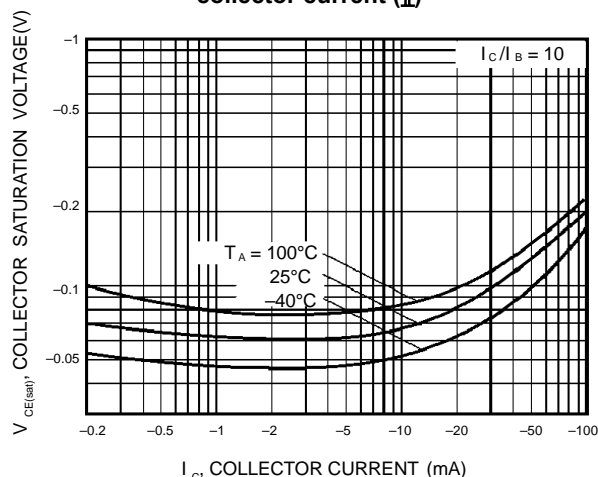
**Fig.5** DC current gain vs. collector current (II)



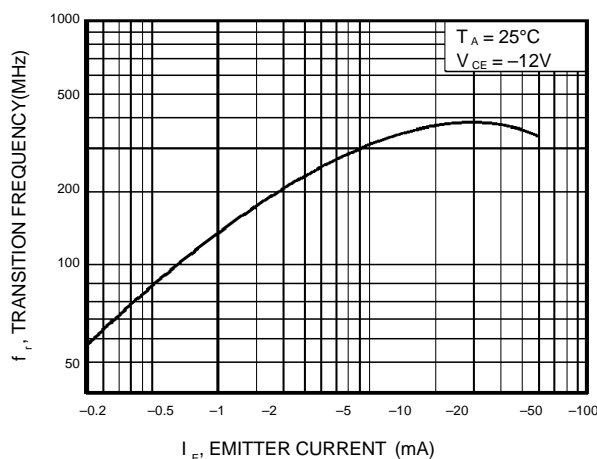
**Fig.6** Collector-emitter saturation voltage vs. collector current (I)



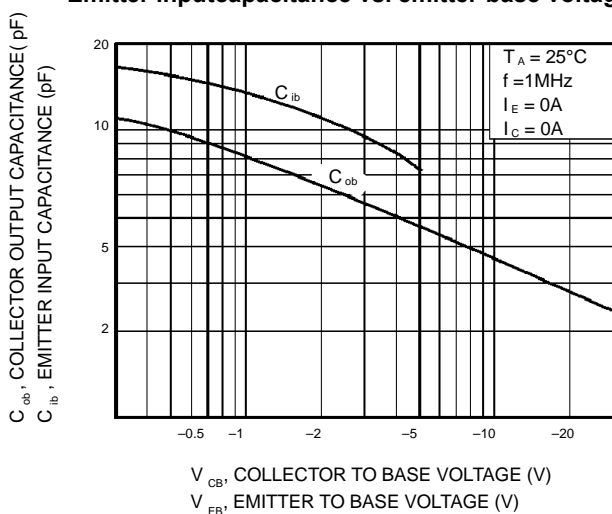
**Fig.7 Collector-emitter saturation voltage vs. collector current (I)**



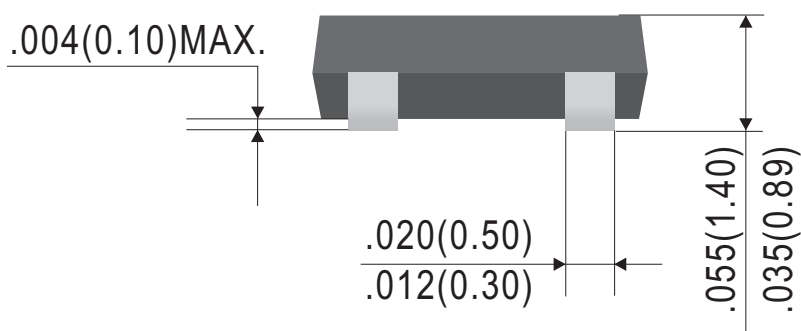
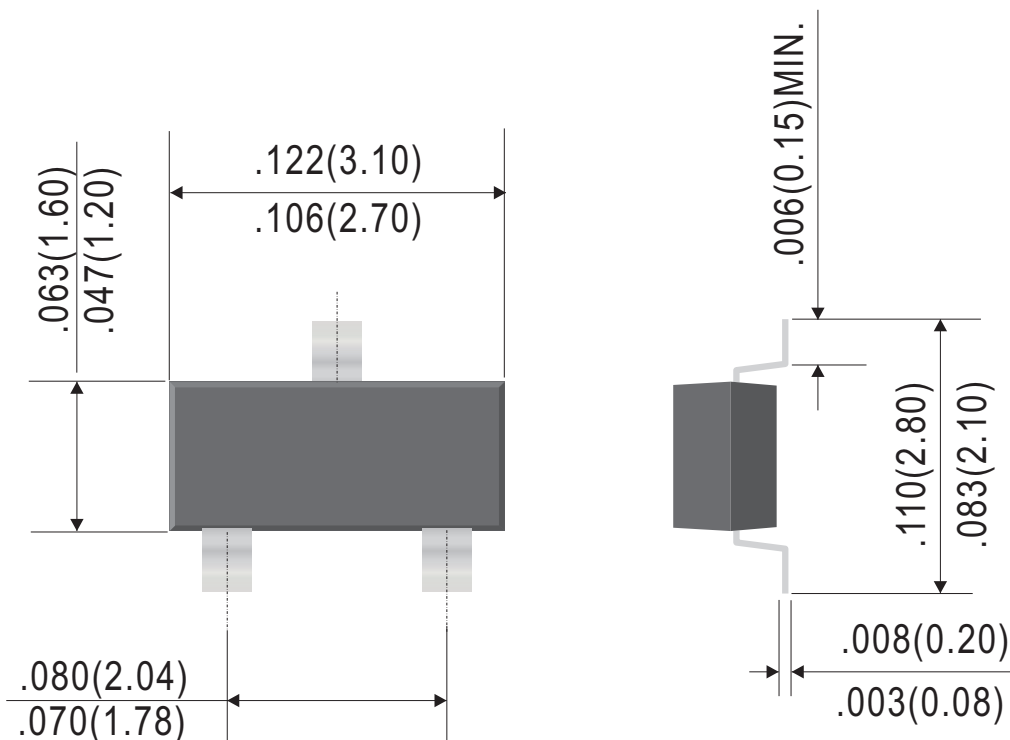
**Fig.8 Gain bandwidth product vs. emitter current**



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



**SOT-23**



Dimensions in inches and (millimeters)

**Ordering Information:**

Device PN	Packing
2SA1037AK x <sup>(2)</sup> LT1 G <sup>(1)</sup> -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

(2) CLASSIFICATION OF hFE RANK

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