

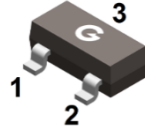
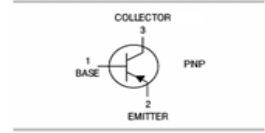
Features

- Excellent h_{FE} Linearity
- Complementary to 2SC2412
- RoHS compliant with Halogen-free

HF

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SA1037-Q	SOT-23	3000 pcs / Tape & Reel	FQ
2SA1037-R	SOT-23	3000 pcs / Tape & Reel	FR
2SA1037-S	SOT-23	3000 pcs / Tape & Reel	FS

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	-60	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-50	V
Emitter-Base Breakdown Voltage	V_{EBO}	-6	V
Continuous Collector Current	I_C	-150	mA
Peak Collector Current	I_{CM}	-200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation($T_A = 25^\circ\text{C}$)	P_D	200	mW
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	420	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	250	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	180	$^\circ\text{C/W}$
Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a minimum recommended FR-4 board

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -50\mu\text{A}, I_E = 0$	-60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -50\mu\text{A}, I_C = 0$	-6	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -60\text{V}, I_E = 0$	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -6\text{V}, I_C = 0$	-	-	-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$	120	-	560	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-	-0.5	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-	-1.2	V
Transition Frequency	f_T	$I_C = -2\text{mA}, V_{CE} = -12\text{V}$ $f = 30\text{MHz}$	-	140	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = -12\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$	-	4	5	pF

Classification of h_{FE}

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

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

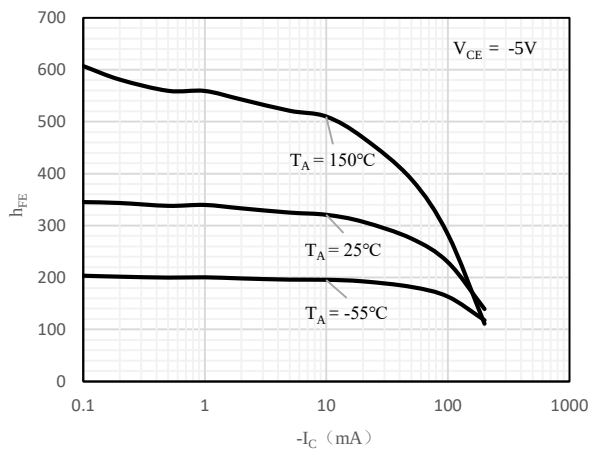


Fig 1 h_{FE} vs. I_C

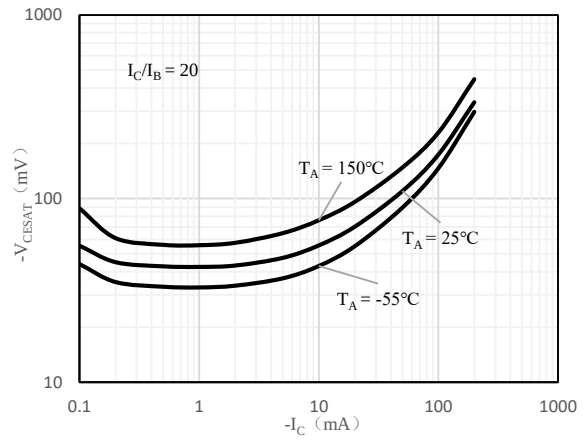


Fig 2 $V_{CE(sat)}$ vs. I_C

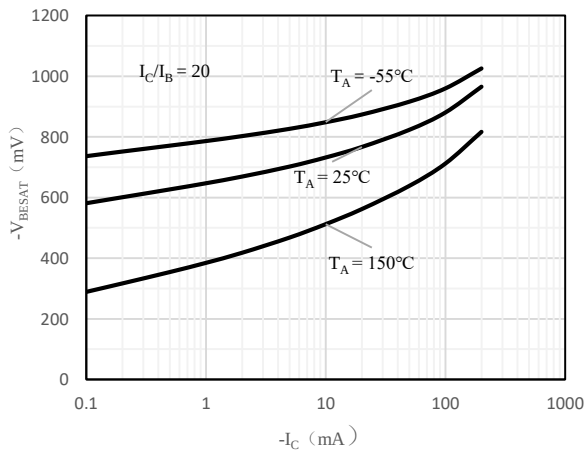


Fig 3 $V_{BE(sat)}$ vs. I_C

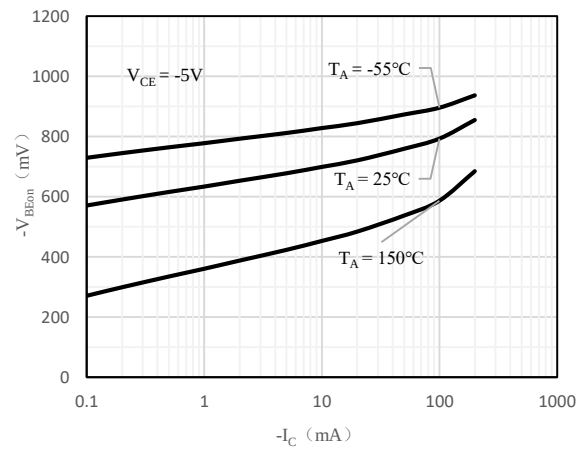
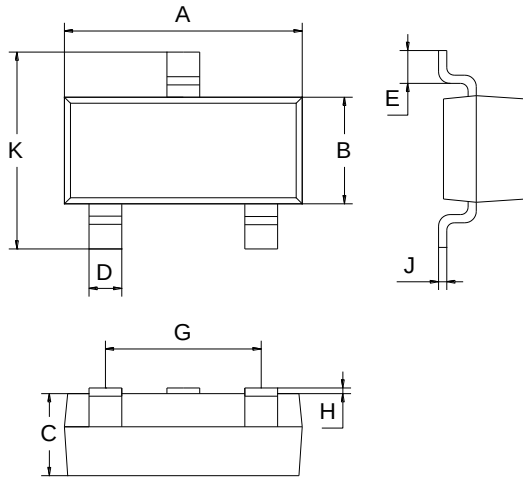


Fig 4 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

