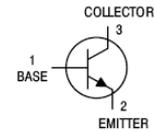


### Features

- Excellent  $h_{FE}$  linearity
- RoHS compliant with Halogen-free

HF



### Mechanical Data

- Case: SOT-323
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



### Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SC4097-P	SOT-323	3000 pcs / Tape & Reel	CP
2SC4097-Q	SOT-323	3000 pcs / Tape & Reel	CQ
2SC4097-R	SOT-323	3000 pcs / Tape & Reel	CR

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	$V_{CBO}$	40	V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	32	V
Emitter-Base Breakdown Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	500	mA
Peak Collector Current	$I_{CM}$	500	mA
Peak Base Current	$I_{BM}$	10	mA

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	$P_D$	250	mW
Thermal Resistance Junction-to-Air <sup>*1</sup>	$R_{\theta JA}$	300	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case <sup>*1</sup>	$R_{\theta JC}$	200	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead <sup>*1</sup>	$R_{\theta JL}$	220	$^\circ\text{C/W}$
Operating junction Temperature	$T_J$	-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 1 inch<sup>2</sup> FR-4 board with 2OZ copper

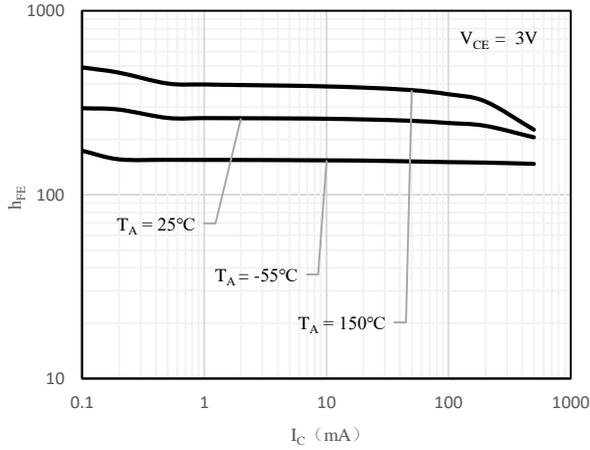
### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	32	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 20\text{V}, I_E = 0$	-	-	1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_C = 0$	-	-	1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 3\text{V}, I_C = 100\text{mA}$	82	-	390	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_{CE} = 500\text{mA}, I_B = 50\text{mA}$	-	-	0.4	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_{CE} = 500\text{mA}, I_B = 50\text{mA}$	-	-	1.1	V
Transition Frequency	$f_T$	$I_C = 20\text{mA}, V_{CE} = 5\text{V}$ $f = 100\text{MHz}$	-	250	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 12\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	6	pF

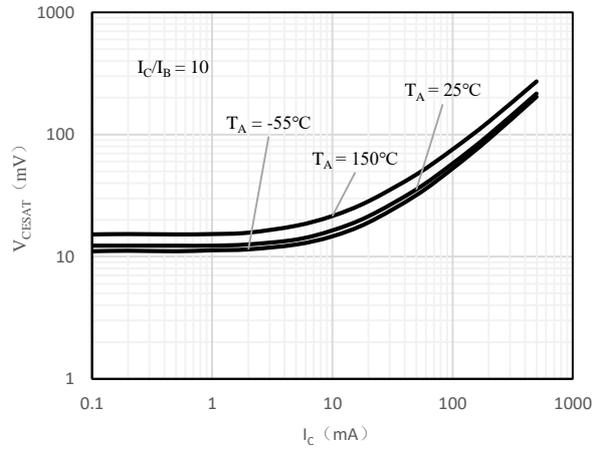
### Classification of $h_{FE}$

Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	CP	CQ	CR

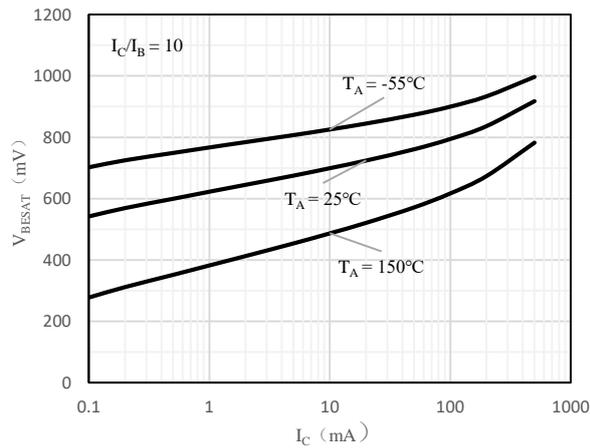
**Ratings and Characteristics Curves** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)



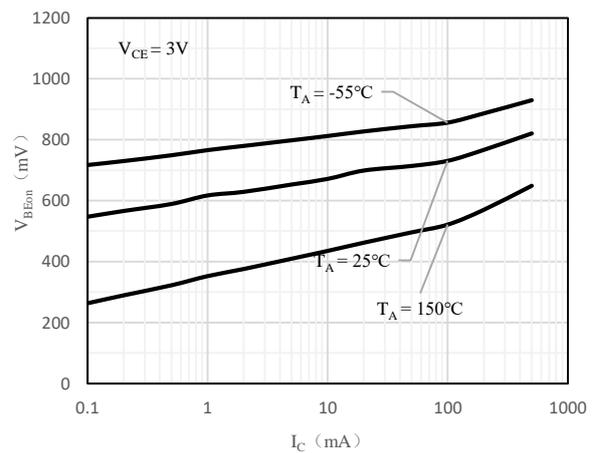
**Fig 1**  $h_{FE}$  vs.  $I_C$



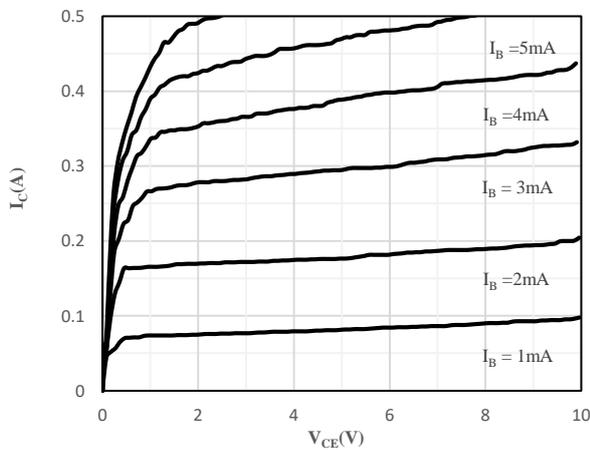
**Fig 2**  $V_{CE(sat)}$  vs.  $I_C$



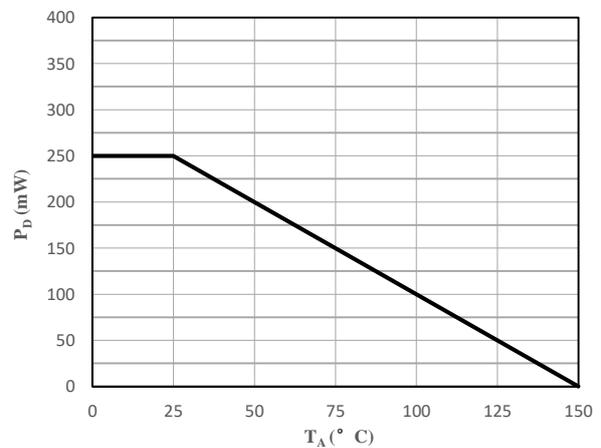
**Fig 3**  $V_{BE(sat)}$  vs.  $I_C$



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



**Fig 5**  $I_C$  vs.  $V_{CE}$



**Fig 6**  $P_D$  vs.  $T_A$

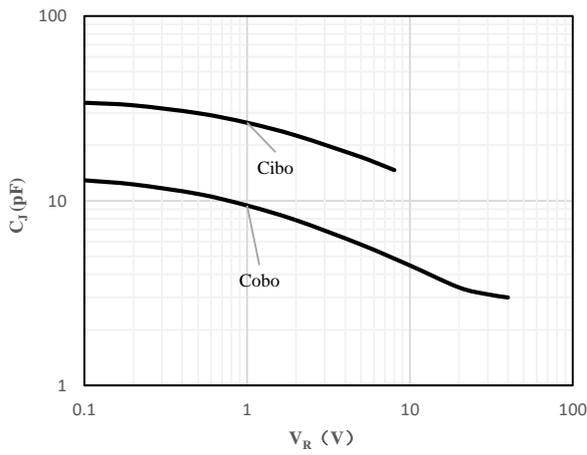
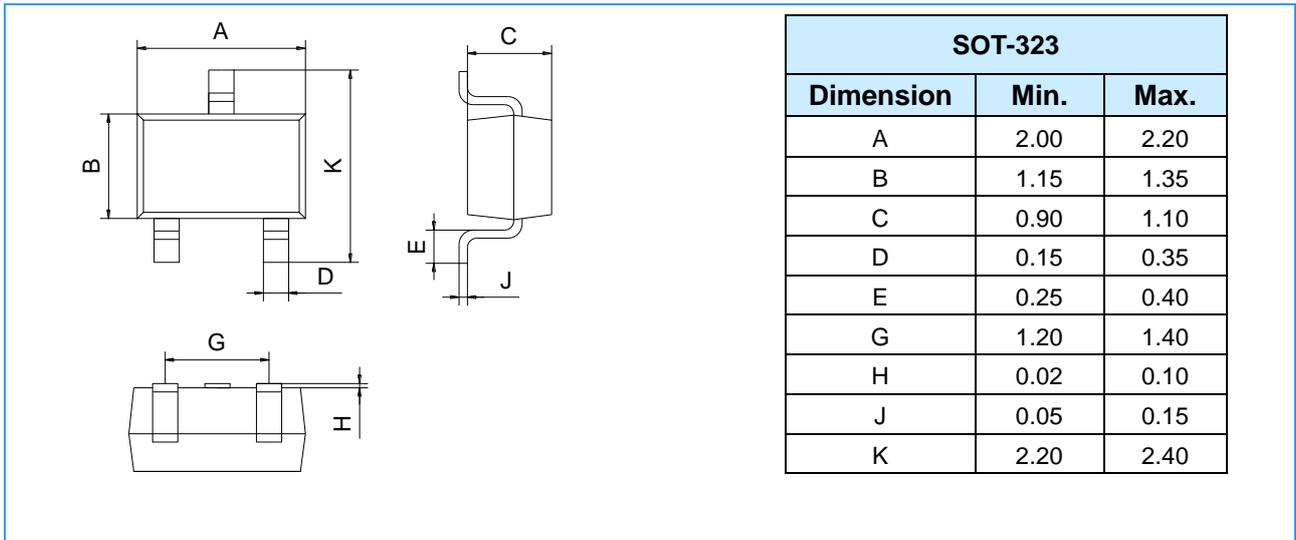


Fig 7  $C_j$  vs.  $V_R$

**Package Outline Dimensions** (Unit: mm)



**Mounting Pad Layout** (Unit: mm)

