

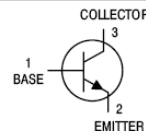
Features

- 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 ^{*1}	$R_{\theta JA}$	300	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	200	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	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 inch² 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	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$	-	-	1	μA
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)

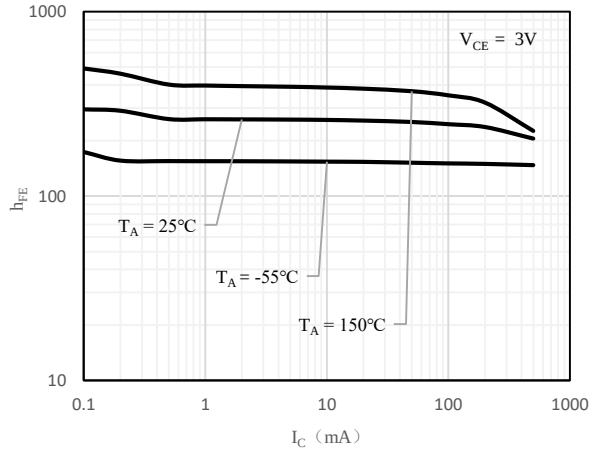


Fig 1 h_{FE} vs. I_C

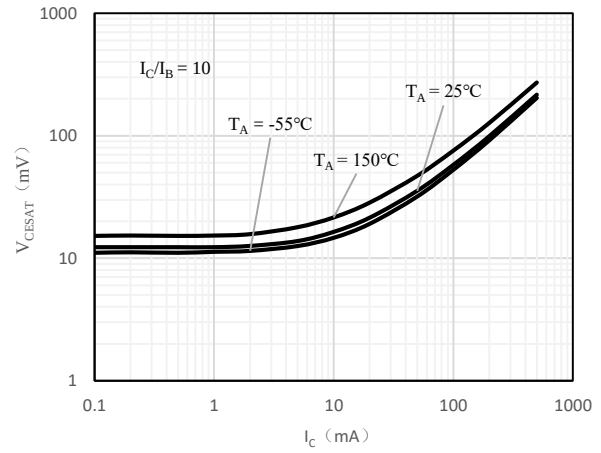


Fig 2 $V_{CE(sat)}$ vs. I_C

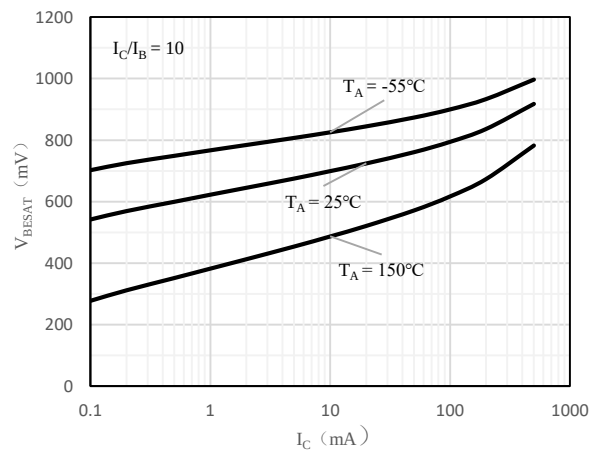


Fig 3 $V_{BE(sat)}$ vs. I_C

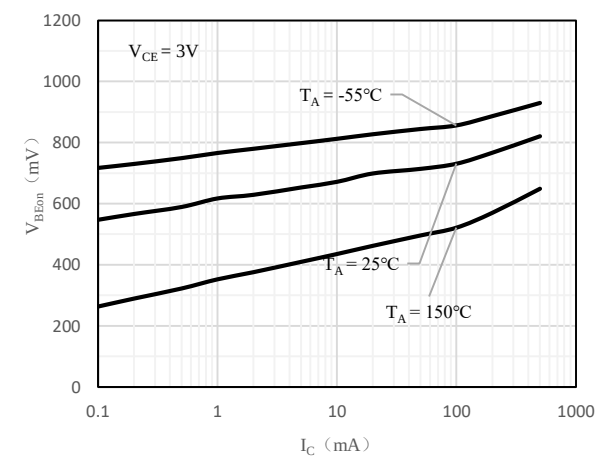


Fig 4 $V_{BE(on)}$ vs. I_C

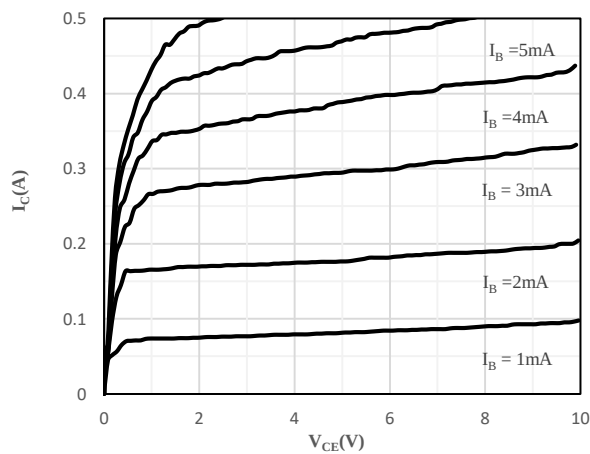


Fig 5 I_C vs. V_{CE}

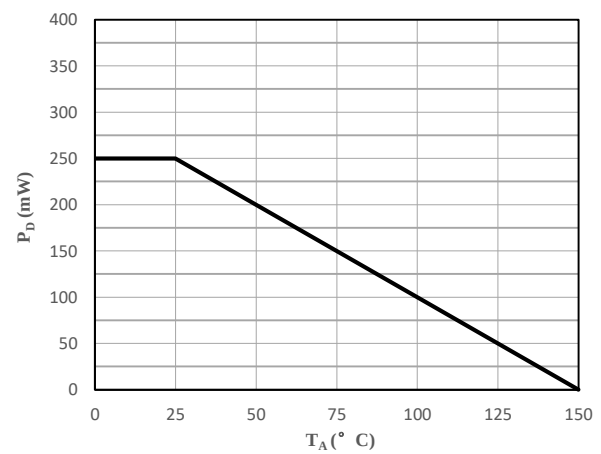


Fig 6 P_D vs. T_A

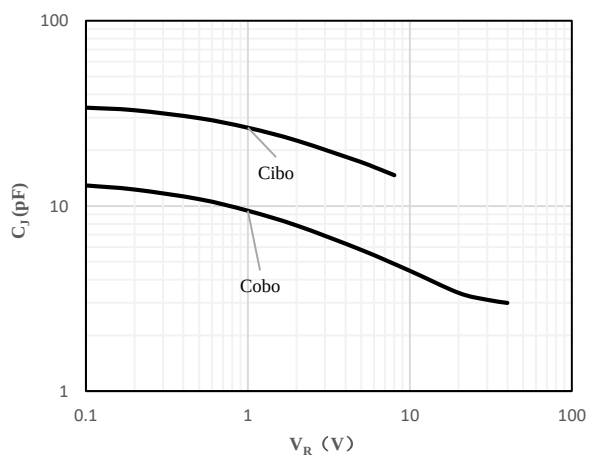
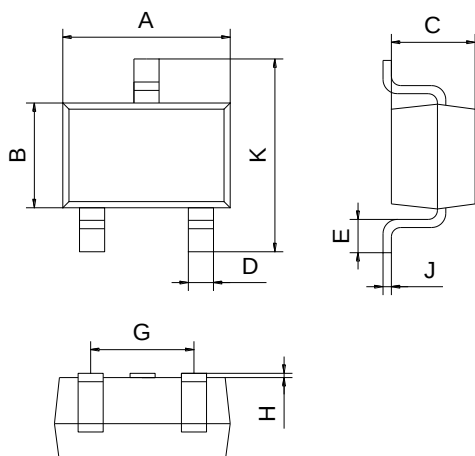


Fig 7 C_j vs. V_R

Package Outline Dimensions (Unit: mm)



SOT-323		
Dimension	Min.	Max.
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	0.25	0.40
G	1.20	1.40
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Mounting Pad Layout (Unit: mm)

SOT-323

