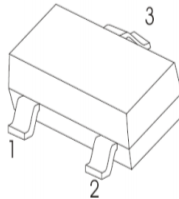


Features

- Low current
- Low voltage

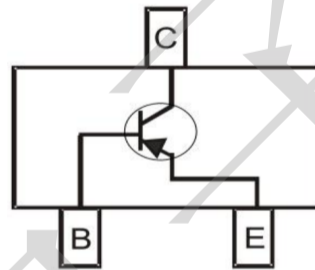


1. BASE
2. EMITTER
3. COLLECTOR

SOT-523

Mechanical Data

- Case: SOT-523



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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (Continuous)	I_C	-100	mA
Collector Current (Peak)	I_{CM}	-200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$) *1	P_D	265	mW
Thermal Resistance Junction-to-Air *2	$R_{\theta JA}$	306	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case *2	$R_{\theta JC}$	152	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead *2	$R_{\theta JL}$	61	$^\circ\text{C/W}$
Operating Junction Temperature	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-45	-	-	V
						V
						V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -1\mu\text{A}, I_C = 0$	-5	-	-	V
						V
						V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -30\text{V}, I_E = 0$	-	-1	-15	nA
Emitter-base Cut-off Current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-100	nA
Collector-emitter Cut-off Current	I_{CEO}	$V_{CE} = -30\text{V}, I_B = 0$	-	-	-1	mA
DC Current Gain	h_{FE}	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$	220	-	475	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$	-	-	-0.3	V
		$I_C = -100\text{mA}, I_B = -5\text{mA}$	-	-	-0.65	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$	-	-0.70	-	V
		$I_C = -100\text{mA}, I_B = -5\text{mA}$	-	-0.85	-	V
Base-Emitter Voltage	$V_{BE(ON)}$	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$	-0.6	-0.65	-0.75	V
		$V_{CE} = -5\text{V}, I_C = -10\text{mA}$	-	-	-0.82	V
Transition Frequency	f_T	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$ $f = 100\text{MHz}$	100	-	-	MHz

Notes:

1. Device mounted on FR-5 = 1.0 X 0.75 X 0.062 inch
2. The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

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

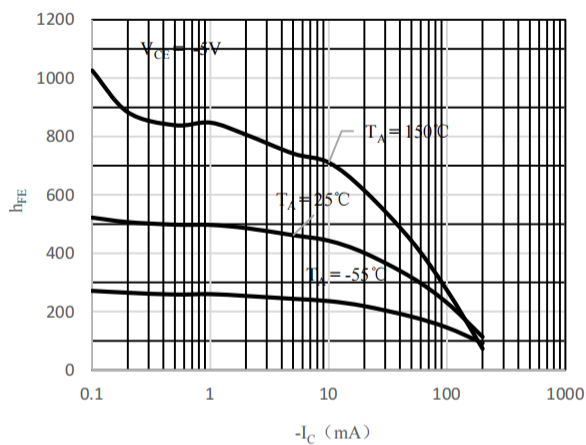


Fig 1 h_{FE} vs. I_C

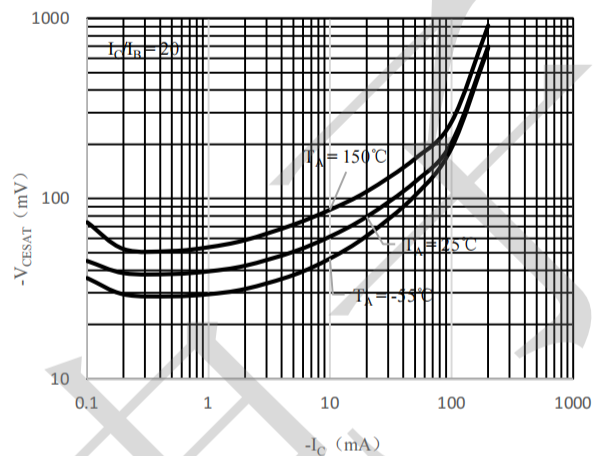


Fig 2 $V_{CE(sat)}$ vs. I_C

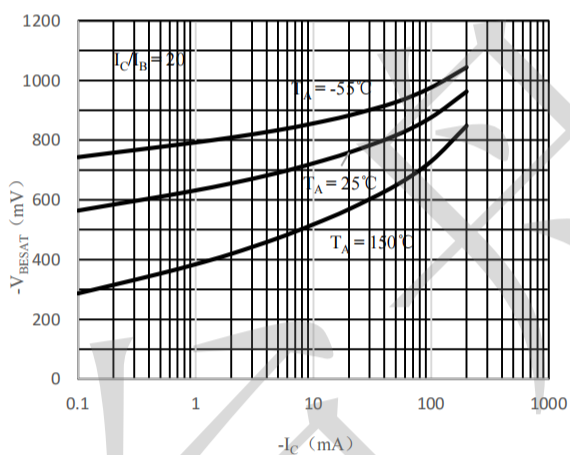


Fig 3 $V_{BE(sat)}$ vs. I_C

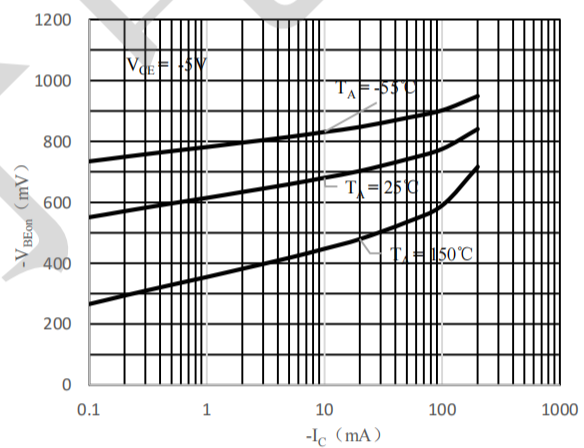
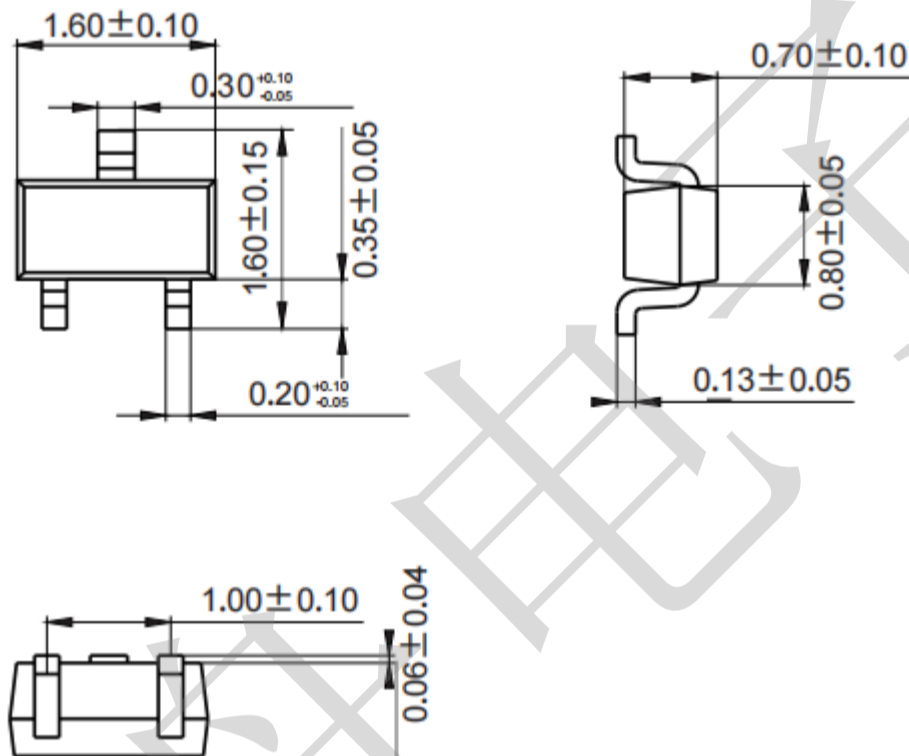


Fig 4 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions (unit:mm)

SOT-523



Mounting Pad Layout (unit: mm)

