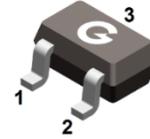
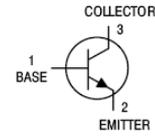


Features

- Low collector to emitter saturation voltage
- High forward current transfer ratio h_{FE}
- Complementary to 2SB1218A
- RoHS compliant with Halogen-free

HF



SOT-323

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
2SD1819A-Q	SOT-323	3000 pcs / Tape & Reel	ZQ
2SD1819A-R	SOT-323	3000 pcs / Tape & Reel	ZR
2SD1819A-S	SOT-323	3000 pcs / Tape & Reel	ZS

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current (Continuous)	I_C	100	mA
Collector Current (Peak)	I_{CM}	200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	150	mW
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	280	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	155	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	215	$^\circ\text{C}/\text{W}$
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	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 2\text{mA}, I_B = 0$	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	7	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 20\text{V}, I_E = 0$	-	-	0.1	μA
Collector Cut-off Current	I_{CEO}	$V_{CE} = 10\text{V}, I_B = 0$	-	-	100	μA
Emitter-base Cut-off Current	I_{EBO}	$V_{EB} = 7\text{V}, I_C = 0$	-	-	0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 2\text{mA}$	160	-	460	-
		$V_{CE} = 2\text{V}, I_C = 100\text{mA}$	90	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$	-	0.1	0.3	V
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 2\text{mA}$ $f = 200\text{MHz}$	-	150	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$	-	3.5	-	pF

Classification of h_{FE}

Rank	Q	R	S
Range	160-260	210-340	290-460
Marking	ZQ	ZR	ZS

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

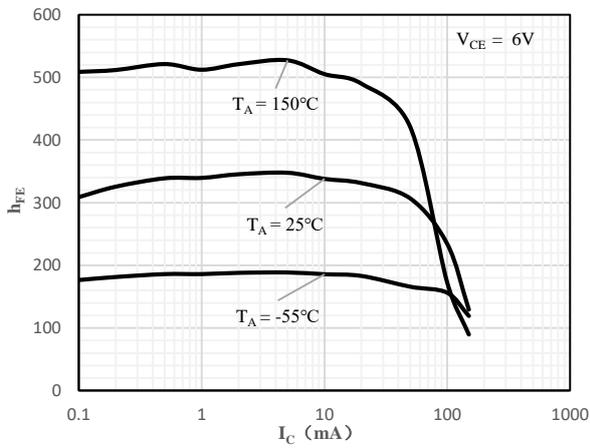


Fig 1 h_{FE} vs. I_C

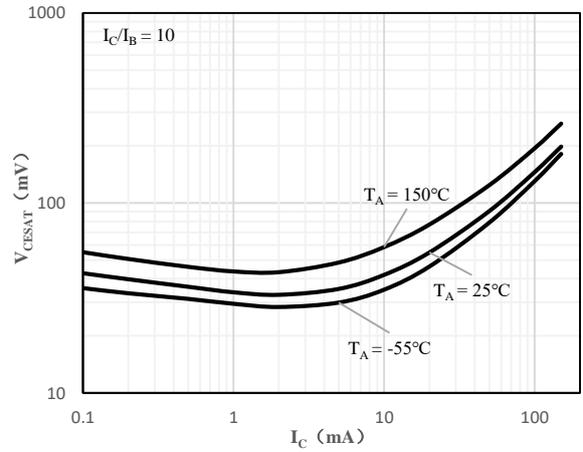


Fig 2 $V_{CE(sat)}$ vs. I_C

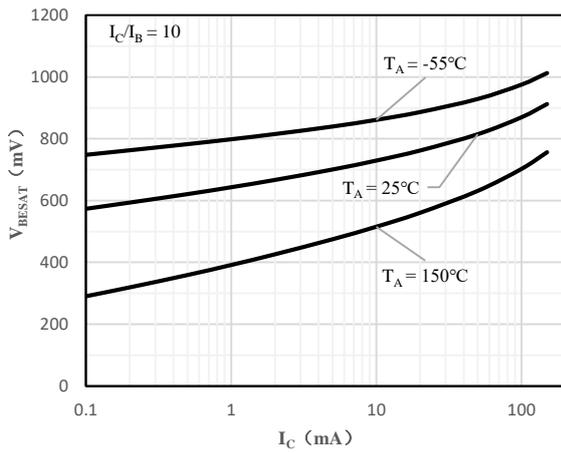


Fig 3 $V_{BE(sat)}$ vs. I_C

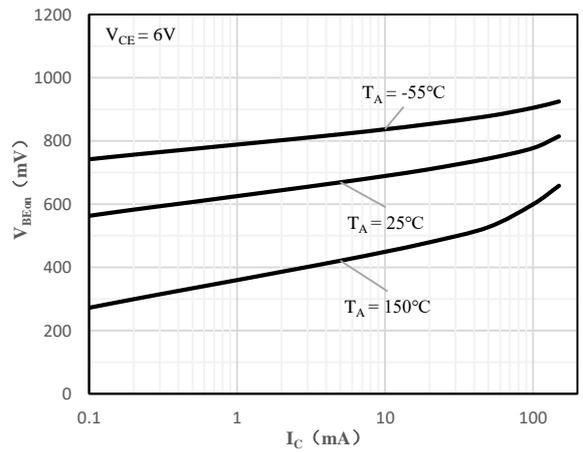
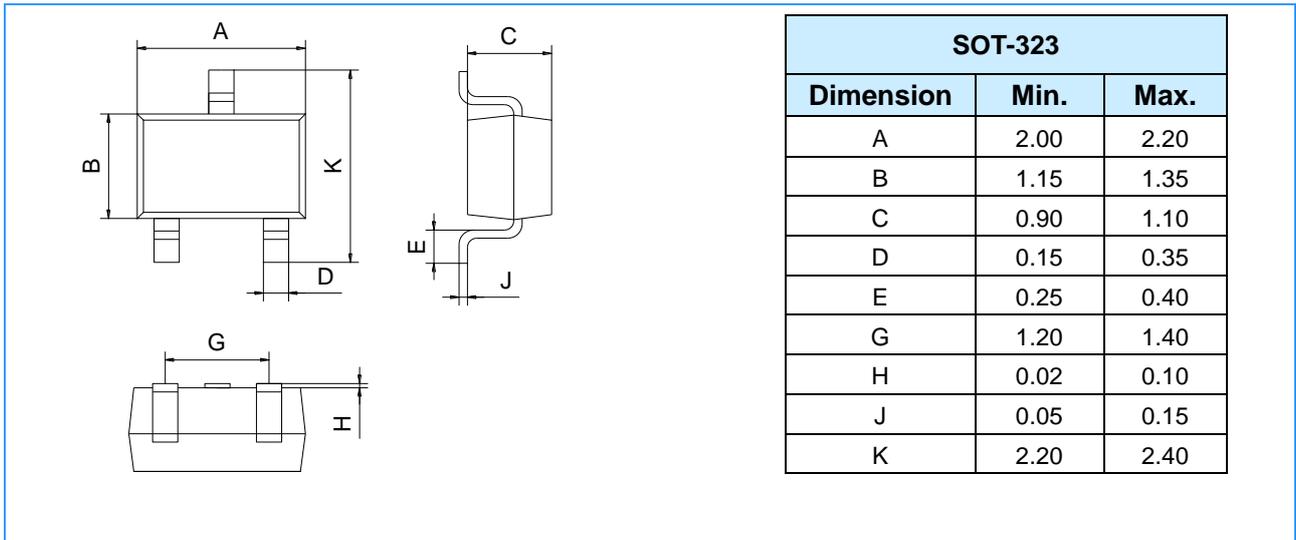


Fig 4 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)

