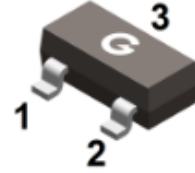
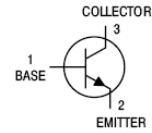


Features

- Epitaxial planar die construction
- Complimentary to 2SB710A
- Low $V_{CE(sat)}$
- RoHS compliant with Halogen-free

HF



SOT-23

Mechanical Data

- Case: SOT-23
- 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
2SD602A-Q	SOT-23	3000 pcs / Tape & Reel	XQ
2SD602A-R	SOT-23	3000 pcs / Tape & Reel	XR
2SD602A-S	SOT-23	3000 pcs / Tape & Reel	XS

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}	5	V
Continuous Collector Current	I_C	0.5	A
Peak Collector Current	I_{CM}	1	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	200	mW
Thermal Resistance (Junction-to-Ambient) ^{*1}	$R_{\theta JA}$	270	$^\circ\text{C/W}$
Thermal Resistance (Junction-to-Case) ^{*1}	$R_{\theta JC}$	160	$^\circ\text{C/W}$
Thermal Resistance (Junction-to-Lead) ^{*1}	$R_{\theta JL}$	210	$^\circ\text{C/W}$
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	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 20\text{V}, I_E = 0$	-	-	100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	-	100	nA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 150\text{mA}$	85	-	340	-
		$V_{CE} = 10\text{V}, I_C = 500\text{mA}$	40	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 300\text{mA}, I_B = 30\text{mA}$	-	0.2	0.6	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 300\text{mA}, I_B = 30\text{mA}$	-	-	1.2	V
Transition Frequency	f_T	$I_C = 50\text{mA}, V_{CE} = 10\text{V}$ $f = 200\text{MHz}$	-	200	-	MHz
Collector Output Capacitance	C_{OBO}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	6	15	pF

Classification of h_{FE}

Rank	Q	R	S
Range	85-170	120-240	170-340
Marking	XQ	XR	XS

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

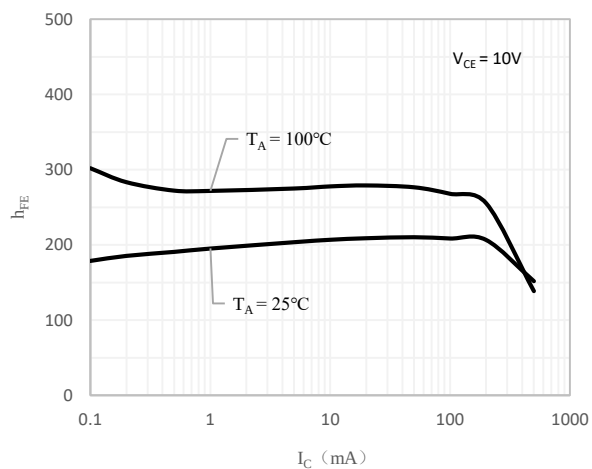


Fig 1 h_{FE} vs. I_C

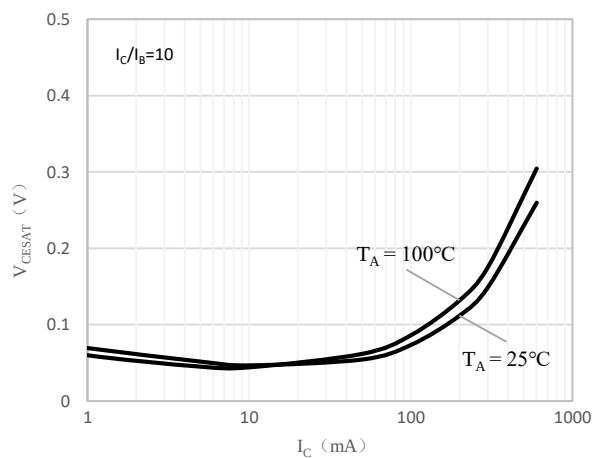


Fig 2 $V_{CE(sat)}$ vs. I_C

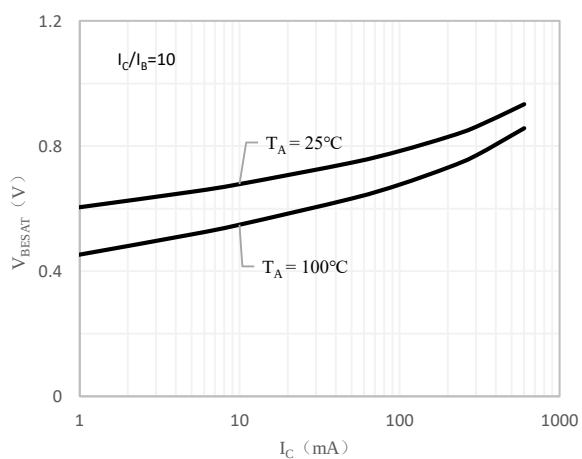


Fig 3 $V_{BE(sat)}$ vs. I_C

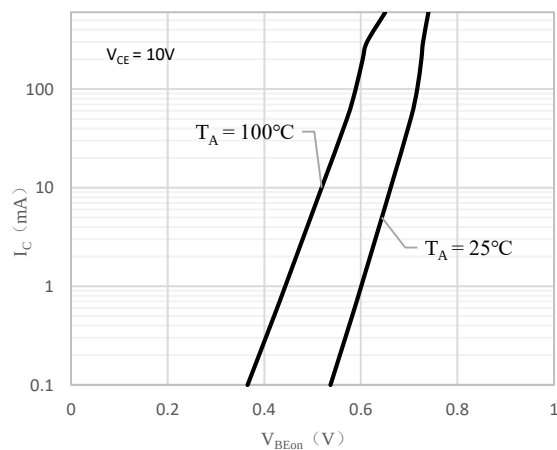
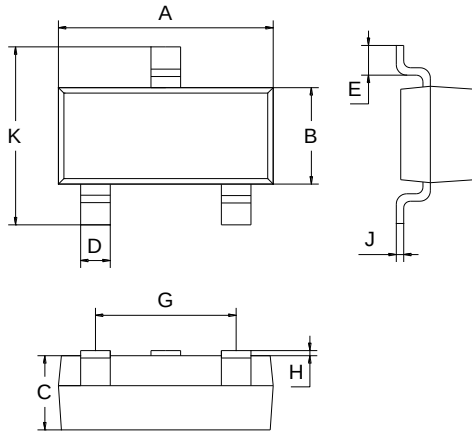


Fig 4 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

