

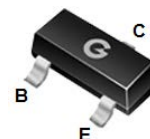
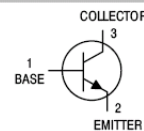
Features

- Low noise and high gain
- High power gain

HF

Mechanical Data

- Case: SOT-23
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SC3356	SOT-23	3000 pcs / Tape & Reel	R23/R24/R25

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	20	V
Collector-Emitter Breakdown Voltage	V _{CEO}	12	V
Emitter-Base Breakdown Voltage	V _{EBO}	3	V
Collector Current (continuous)	I _C	100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Collector Power Dissipation *1	P _C	200	mW
Thermal Resistance Junction-to-Air *1	R _{θJA}	375	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	294	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	226	°C/W
Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

Note 1: The data tested by surface mounted on a 16mm * 18mm * 2mm FR4-epoxy P.C.B

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	20	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	12	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	3	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10\text{V}, I_E = 0$	-	-	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1\text{V}, I_C = 0$	-	-	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 20\text{mA}$	50	120	300	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}, I_B = 4\text{mA}$	-	-	0.5	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 20\text{mA}, I_B = 4\text{mA}$	-	-	1.1	V
Transition Frequency	f_T	$I_C = 20\text{mA}, V_{CE} = 10\text{V}$	-	7	-	GHz
Insertion Power Gain	$ S_{21e} ^2$	$V_{CE} = 10\text{V}, I_C = 20\text{mA}$ $f = 1\text{GHz}$	-	11.50	-	dB
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$	-	0.55	1.0	pF
Noise Figure	N_F	$V_{CE} = 10\text{V}, I_C = 7\text{mA}$ $f = 1\text{GHz}$	-	1.10	2.0	dB

Classification of h_{FE}

Rank	Q	R	S
Range	50 ~ 100	80 ~ 160	125 ~ 250
Marking	R23	R24	R25

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

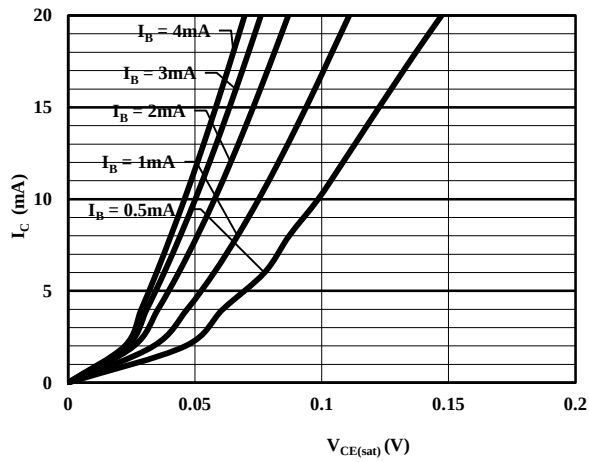


Fig 1 Output Characteristics

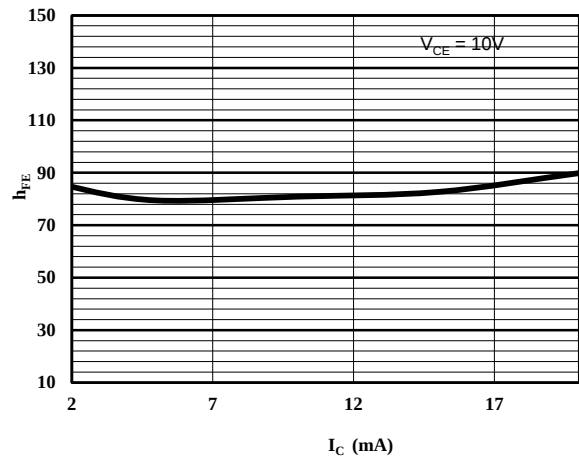
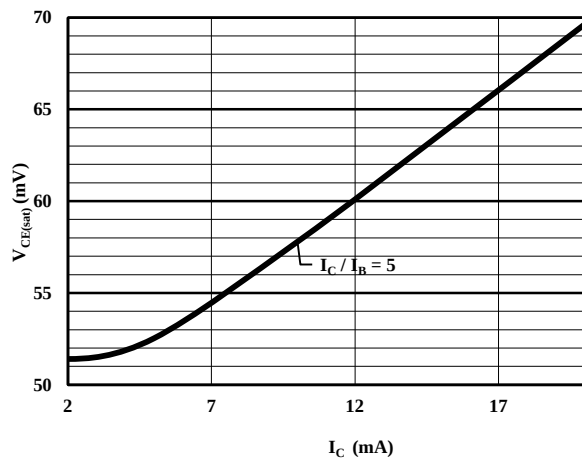
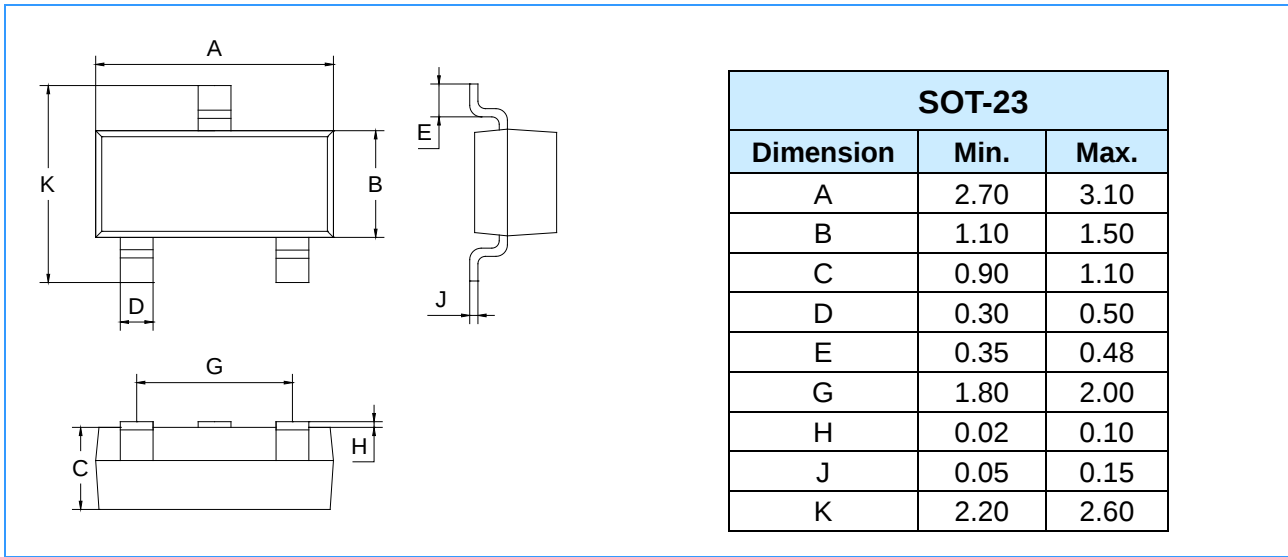


Fig 2 DC Current Gain vs. Collector Current

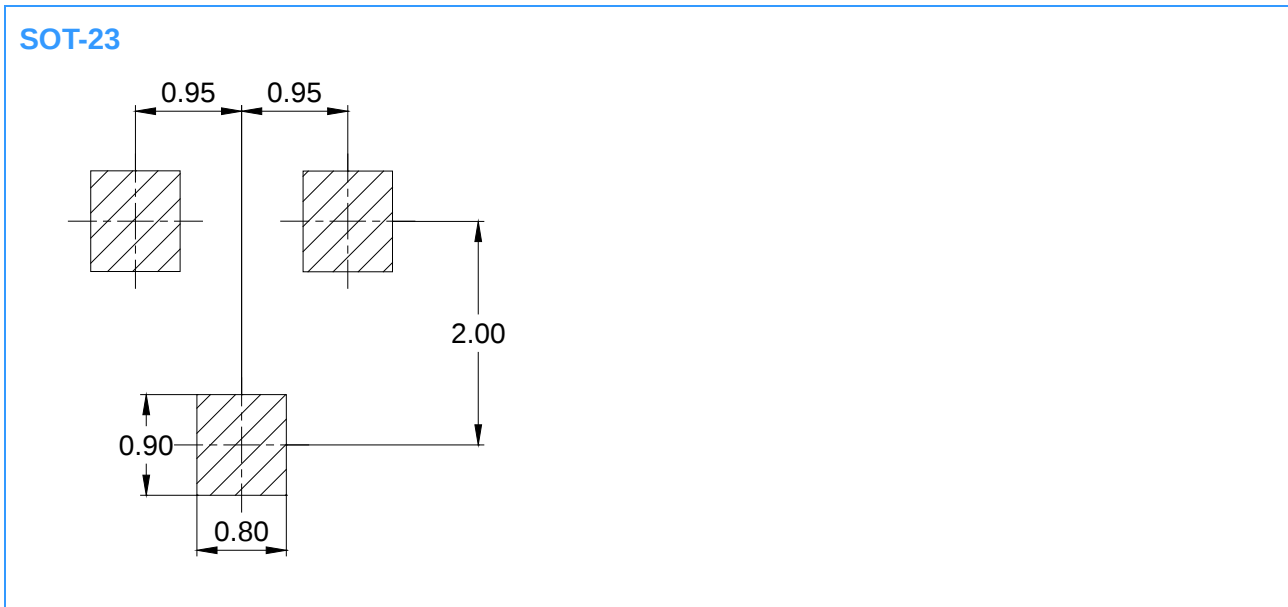


**Fig 3 Collector-Emitter Saturation Voltage
vs. Collector Current**

Package Outline Dimensions (Unit: mm)



Package Outline Dimensions (Unit: mm)



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