

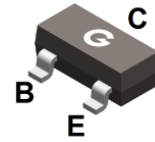
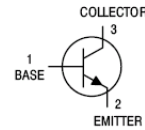
Features

- Epitaxial planar die construction
- High transition frequency

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
2SC3837K	SOT-23	3000 pcs / Tape & Reel	AC

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	30	V
Collector-Emitter Breakdown Voltage	V _{CEO}	20	V
Emitter-Base Breakdown Voltage	V _{EBO}	3	V
Collector Current (Continuous)	I _C	50	mA
Collector Current (Peak)	I _{CM}	100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	200	mW
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	250	°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	150	°C/W
Thermal Resistance Junction-to-Lead ^{*1}	R _{θJL}	180	°C/W
Operating Junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°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	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}$, $I_E = 0$	30	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}$, $I_B = 0$	20	-	-	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}	$V_{CB} = 15\text{V}$, $I_E = 0$	-	-	0.5	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 2\text{V}$, $I_C = 0$	-	-	0.5	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}$, $I_C = 10\text{mA}$	82	-	270	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}$, $I_B = 4\text{mA}$	-	-	0.5	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 20\text{mA}$, $I_B = 4\text{mA}$	-	-	1.2	V
Transition Frequency	f_T	$I_E = -10\text{mA}$, $V_{CE} = 10\text{V}$ $f = 200\text{MHz}$	0.6	1.5	-	GHZ
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$	-	-	1.5	pF

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

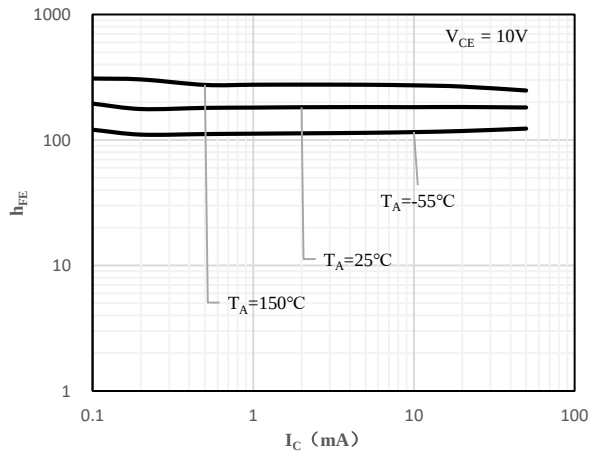


Fig 1 h_{FE} vs. I_C

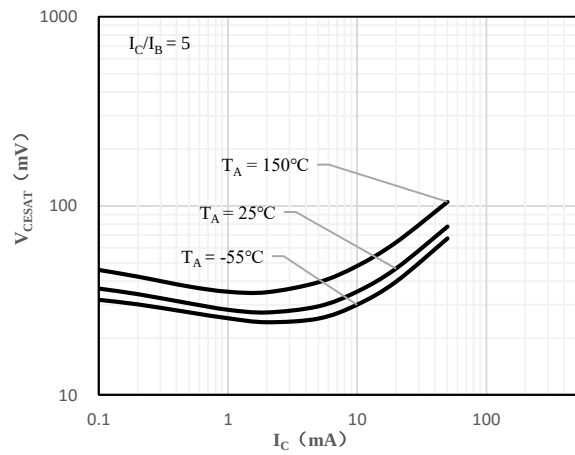


Fig 2 $V_{CE(sat)}$ vs. I_C

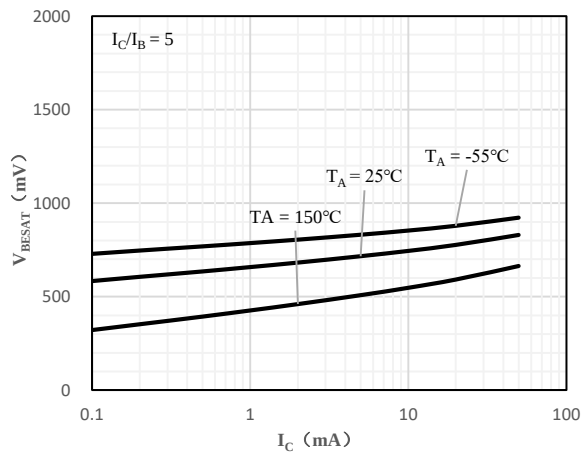


Fig 3 $V_{BE(sat)}$ vs. I_C

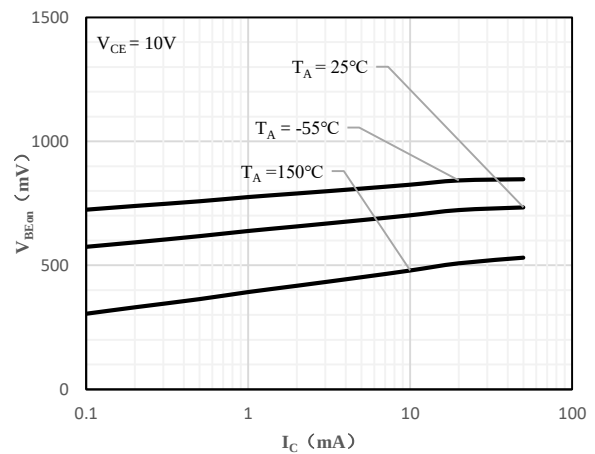


Fig 4 $V_{BE(on)}$ vs. I_C

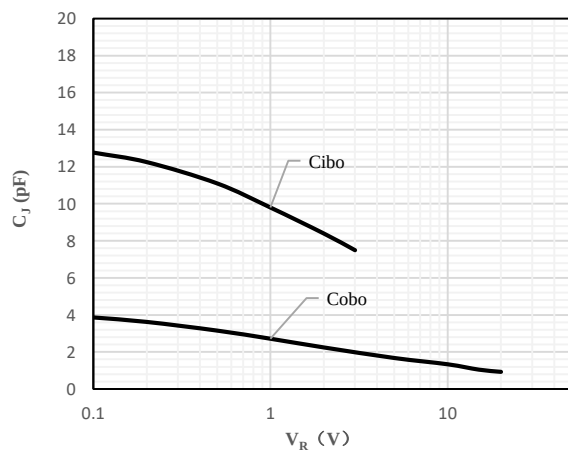


Fig 5 C_J vs. V_R

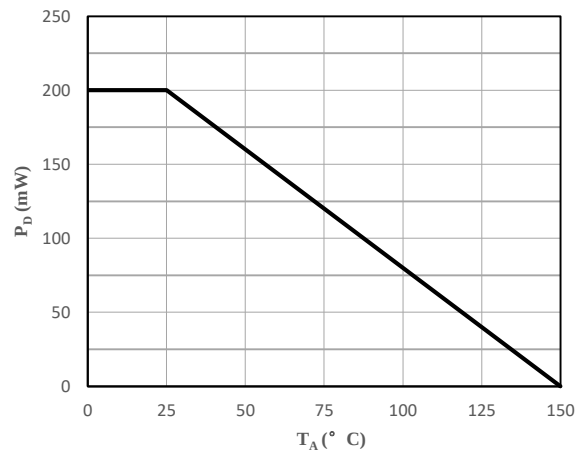
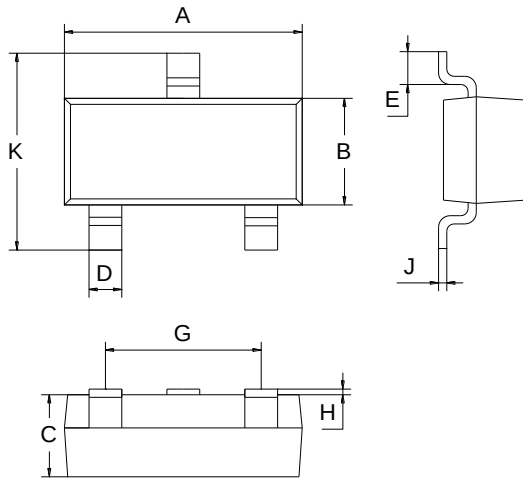


Fig 6 P_D vs. T_A

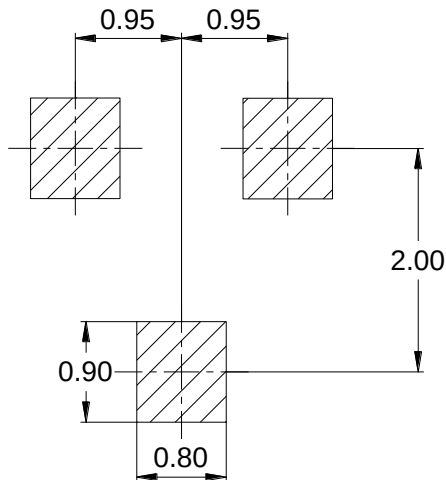
Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23



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