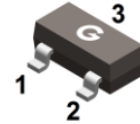
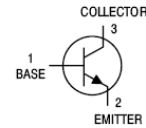


Features

- Epitaxial planar die construction
- Complementary PNP type available(MMBT5401)
- 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
MMBT5551	SOT-23	3000 pcs / Tape & Reel	G1

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Breakdown Voltage	V_{CEO}	160	V
Emitter-Base Breakdown Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	0.6	A
Peak Collector Current ($t_p \leq 1\text{ms}$)	I_{CM}	0.8	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$)	P_D	0.35	W
Power Dissipation ($T_C = 25^\circ\text{C}$) *1		0.587	
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	396	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	213	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	186	$^\circ\text{C/W}$
Junction Temperature Range	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 15mm * 15mm * 1mm 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	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	180	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 0.1\text{mA}, I_B = 0$	160	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 120\text{V}, I_E = 0$	-	-	50	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$	-	-	50	nA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	80	-	-	-
		$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	100	-	300	-
		$V_{CE} = 5\text{V}, I_C = 50\text{mA}$	30	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	-	-	0.15	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	-	-	0.2	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	-	-	1	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	-	-	1	V
Collector-base Output Capacitance	C_{cbo}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	-	6	pF
Current-Gain— Bandwidth Product	f_T	$I_C = 10\text{mA}, V_{CE} = 10\text{V}$ $f = 100\text{MHz}$	100	-	300	MHz

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

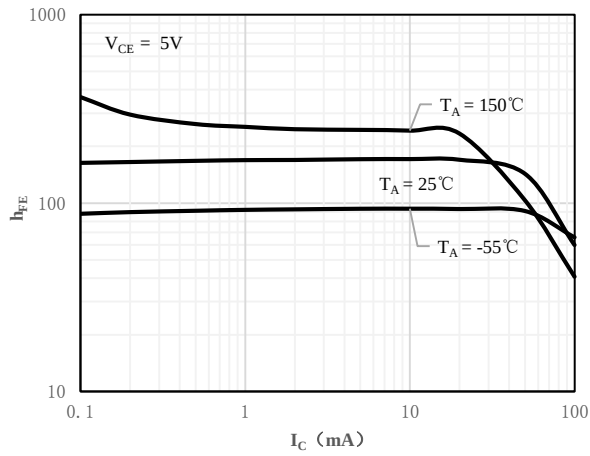


Fig 1 h_{FE} vs. I_C

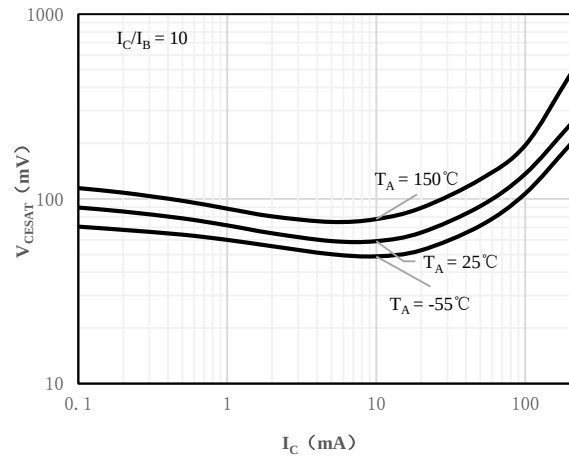


Fig 2 $V_{CE(sat)}$ vs. I_C

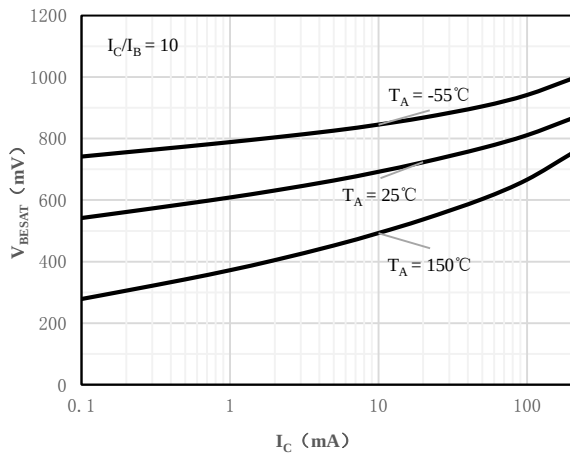


Fig 3 $V_{BE(sat)}$ vs. I_C

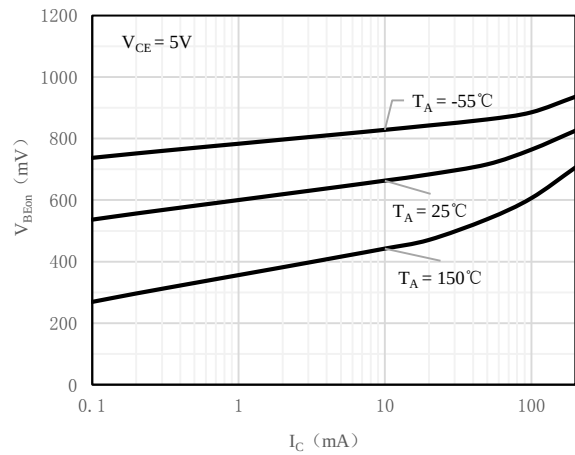


Fig 4 $V_{BE(on)}$ vs. I_C

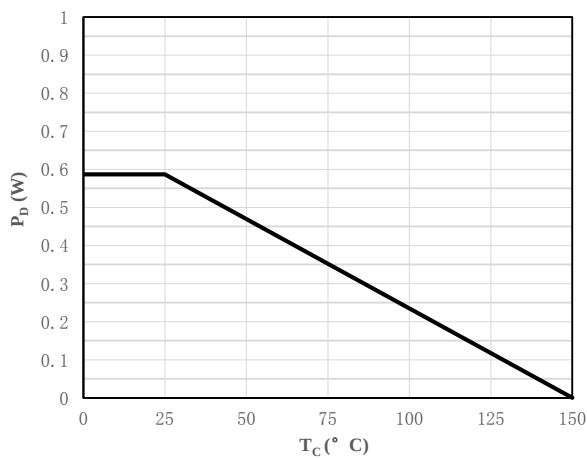
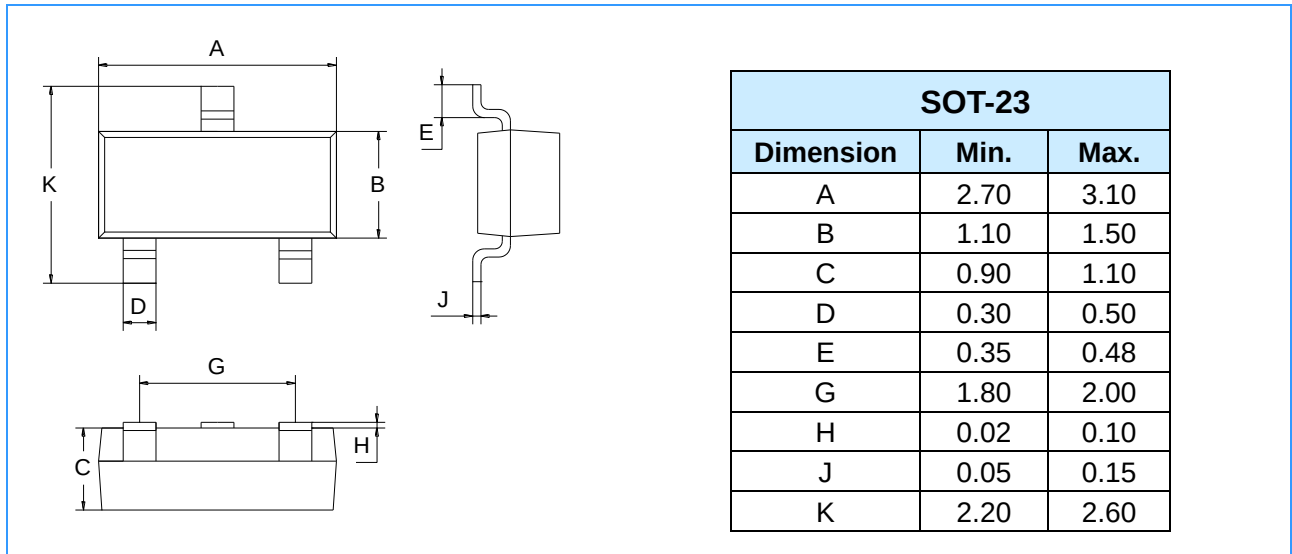


Fig 5 Power Derating Curve

Package Outline Dimensions (Unit: mm)



Package Outline Dimensions (Unit: mm)

