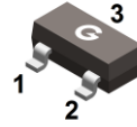
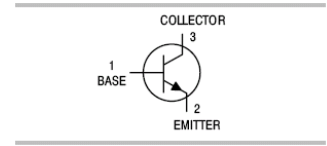


Features

- Epitaxial planar die construction
- Complementary PNP type available(TMMBT5401)
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

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
TMMBT5551	SOT-23	3000 pcs / Tape & Reel	G1

Maximum Ratings (@ T_A = 25°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 ≤ 1ms)	I _{CM}	0.8	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T _A = 25°C)	P _D	0.35	W
Power Dissipation (T _C = 25°C) *1		0.587	
Thermal Resistance Junction-to-Air *1	R _{θJA}	396	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	213	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	186	°C/W
Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°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)

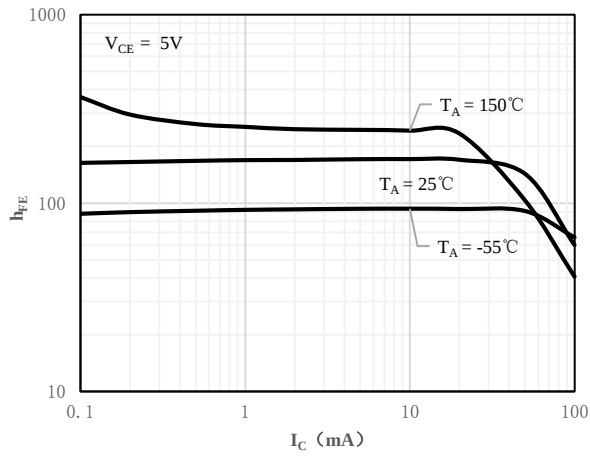


Fig 1 h_{FE} vs. I_C

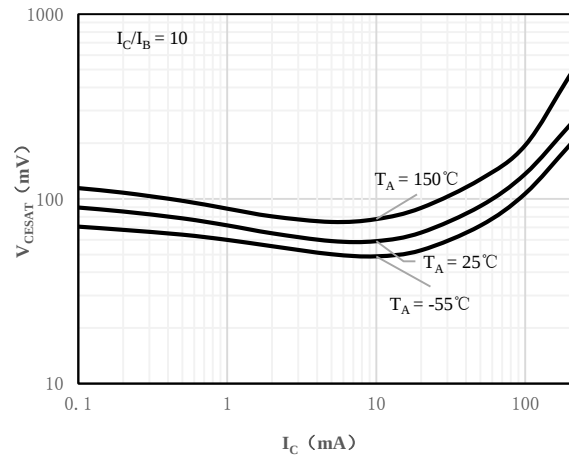


Fig 2 $V_{CE(sat)}$ vs. I_C

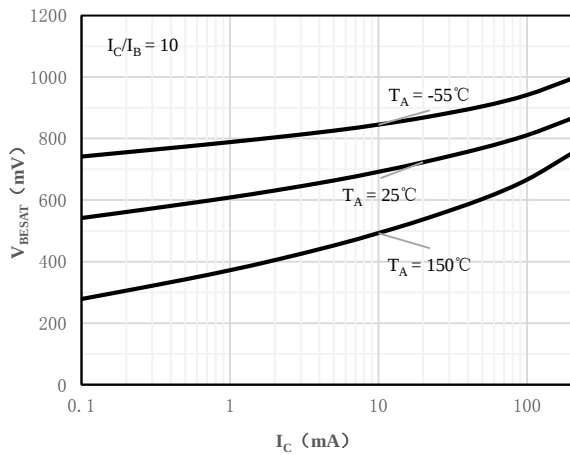


Fig 3 $V_{BE(sat)}$ vs. I_C

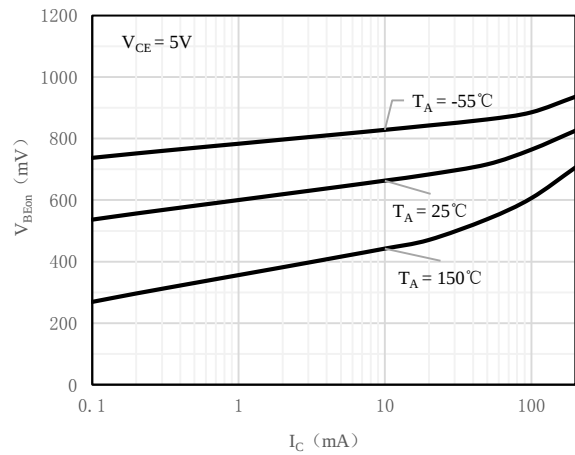


Fig 4 $V_{BE(on)}$ vs. I_C

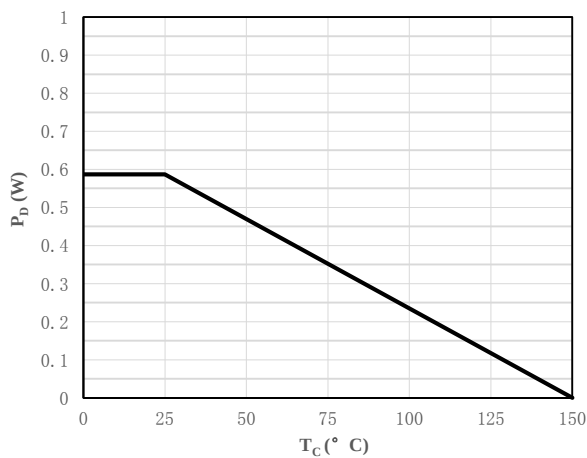
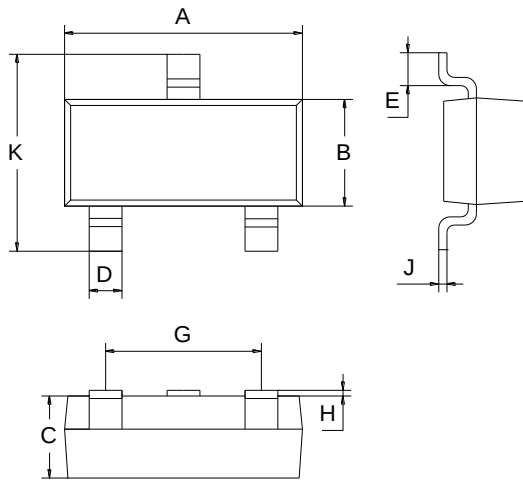


Fig 5 Power Derating Curve

Package Outline Dimensions (Unit: mm)



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

