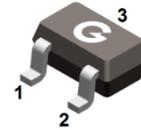
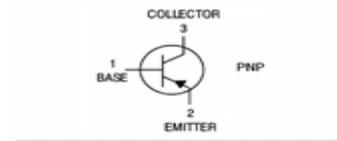


Features

- Epitaxial planar die construction
- Complementary NPN type available(MMST5551)
- RoHS compliant with Halogen-free

HF



SOT-323

Mechanical Data

- Case: SOT-323
- 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
MMST5401	SOT-323	3000 pcs / Tape & Reel	K4M

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-160	V
Collector-Emitter Breakdown Voltage	V _{CEO}	-150	V
Emitter-Base Breakdown Voltage	V _{EB0}	-5	V
Collector Current (Continuous)	I _C	-0.6	A
Collector Current (Peak)	I _{CM}	-0.8	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	0.2	W
Thermal Resistance Junction-to-Air *1	R _{θJA}	300	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	200	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	230	°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 1 inch² FR-4 board with 20Z copper

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-160	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-150	-	-	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}	$V_{CB} = -120\text{V}, I_E = 0$	-	-	-50	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -3\text{V}, I_C = 0$	-	-	-50	nA
DC Current Gain	h_{FE}	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	50	-	-	-
		$V_{CE} = -5\text{V}, I_C = -10\text{mA}$	60	-	240	-
		$V_{CE} = -5\text{V}, I_C = -50\text{mA}$	50	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-	-0.5	V
		$I_C = -10\text{mA}, I_B = -1\text{mA}$	-	-	-0.2	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-	-1	V
		$I_C = -10\text{mA}, I_B = -1\text{mA}$	-	-	-1	V
Collector-base Output Capacitance	C_{cbo}	$V_{CB} = -10\text{V}, f = 1\text{MHz}, I_E = 0$	-	-	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
Noise Figure	N_F	$I_C = -200\text{mA}, V_{CE} = -5\text{V}$ $f = 100\text{MHz}$	-	-	8	dB

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

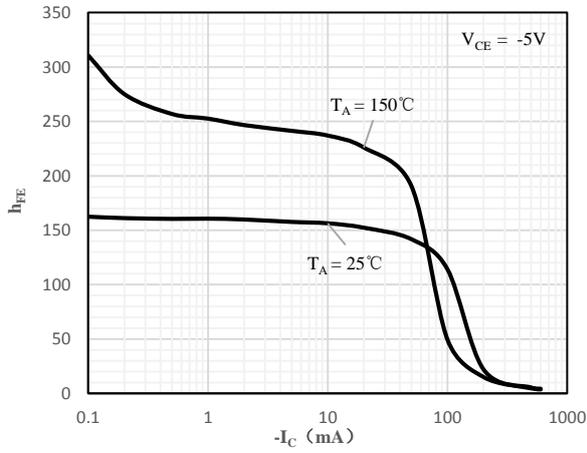


Fig 1 h_{FE} vs. I_C

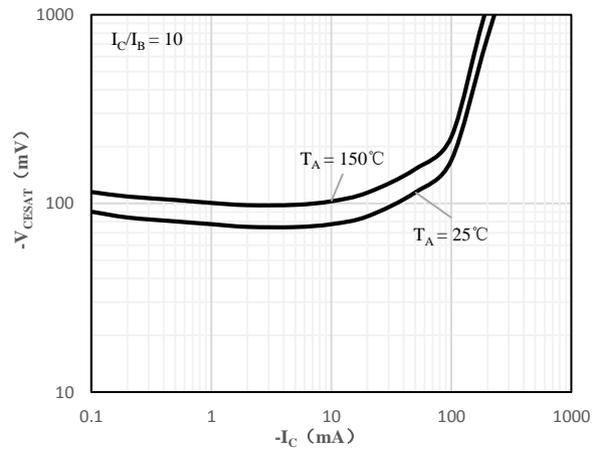


Fig 2 $V_{CE(sat)}$ vs. I_C

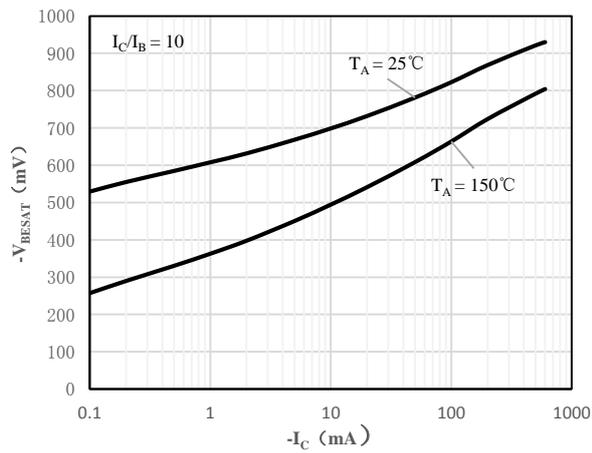


Fig 3 $V_{BE(sat)}$ vs. I_C

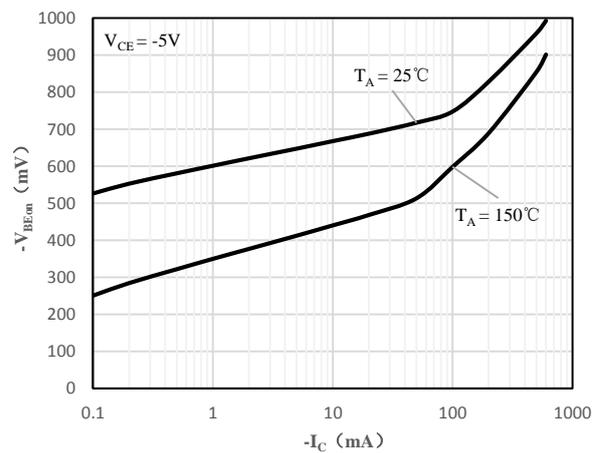


Fig 4 $V_{BE(on)}$ vs. I_C

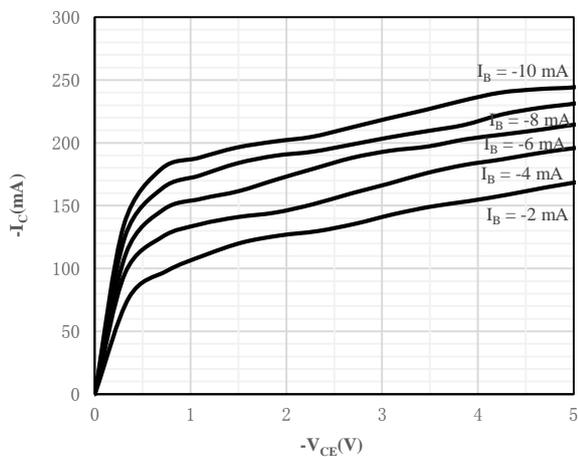
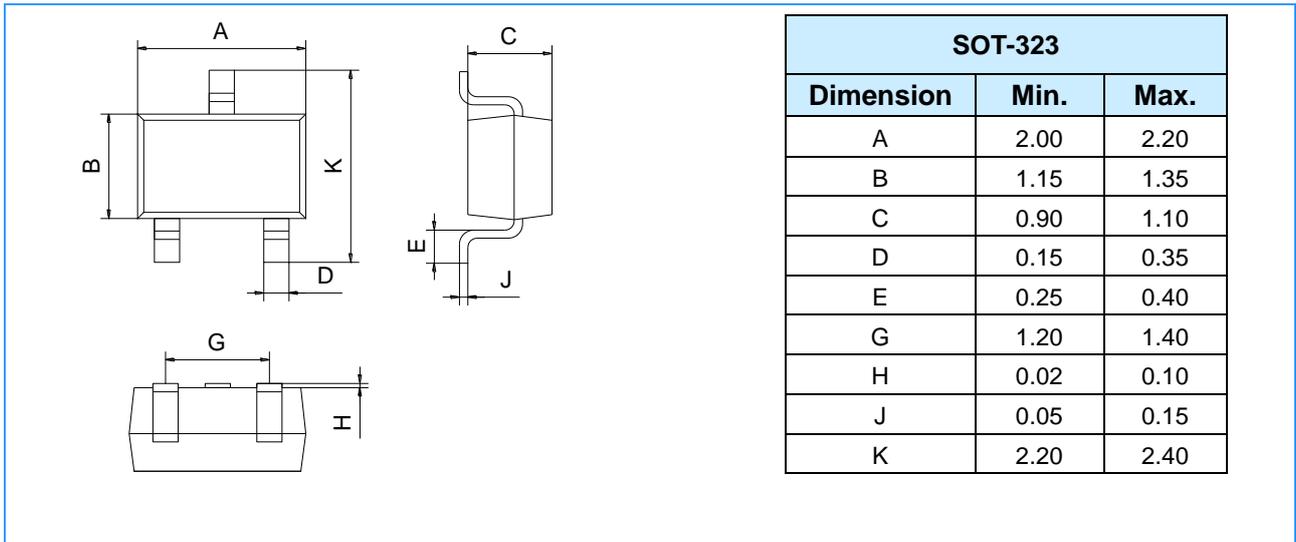


Fig 5 I_C vs. V_{CE}

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)

