

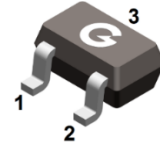
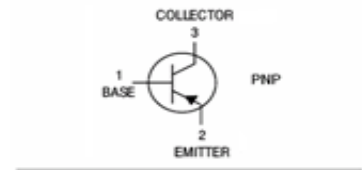
Features

- Epitaxial planar die construction
- Complimentary to MMST3904
- Ultra-small surface mount package

HF

Mechanical Data

- Case: SOT-323
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-323

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
MMST3906	SOT-323	3000 pcs / Tape & Reel	K5N

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	-40	V
Collector-Emitter Breakdown Voltage	V _{CEO}	-40	V
Emitter-Base Breakdown Voltage	V _{EBO}	-5	V
Continuous Collector Current	I _C	-0.2	A
Peak Collector Current	I _{CM}	-0.2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	150	mW
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	500	°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	270	°C/W
Thermal Resistance Junction-to-Lead ¹	R _{θJL}	300	°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 minimum recommended FR-4 board

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$, $I_E = 0$	-40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}$, $I_B = 0$	-40	-	-	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}	$V_{CB} = -40\text{V}$, $I_E = 0$	-	-	-50	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5\text{V}$, $I_C = 0$	-	-	-50	nA
Collector Cut-off Current	I_{CES}	$V_{CE} = -30\text{V}$, $I_B = 0$	-	-	-50	nA
DC Current Gain	h_{FE}	$V_{CE} = -1\text{V}$, $I_C = -0.1\text{mA}$	60	-	-	-
		$V_{CE} = -1\text{V}$, $I_C = -1\text{mA}$	80	-	-	-
		$V_{CE} = -1\text{V}$, $I_C = -10\text{mA}$	100	-	300	-
		$V_{CE} = -1\text{V}$, $I_C = -50\text{mA}$	60	-	-	-
		$V_{CE} = -1\text{V}$, $I_C = -100\text{mA}$	30	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}$, $I_B = -1\text{mA}$	-	-	-0.25	V
		$I_C = -50\text{mA}$, $I_B = -5\text{mA}$	-	-	-0.4	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -10\text{mA}$, $I_B = -1\text{mA}$	-0.65	-	-0.85	V
		$I_C = -50\text{mA}$, $I_B = -5\text{mA}$	-	-	-0.95	V
Transition Frequency	f_T	$I_C = -10\text{mA}$, $V_{CE} = -20\text{V}$ $f = 100\text{MHz}$	250	-	-	MHz
Collector Output Capacitance	C_{OBO}	$V_{CB} = -5\text{V}$, $I_E = 0$, $f = 1\text{MHz}$	-	-	4.5	pF
Input Capacitance	C_{IBO}	$V_{EB} = -0.5\text{V}$, $I_C = 0$, $f = 1\text{MHz}$	-	-	10	pF
Noise Figure	N_F	$V_{CE} = -5\text{V}$, $I_C = -100\mu\text{A}$ $R_S = 1\text{k}\Omega$, $f = 10\text{Hz to } 15.7\text{kHz}$	-	-	4	dB
Delay Time	t_d	$V_{CC} = -3\text{V}$, $I_C = -10\text{mA}$	-	-	35	ns
Rise Time	t_r	$V_{BE(OFF)} = -0.5\text{V}$, $I_{B1} = 1\text{mA}$	-	-	35	ns
Storage Time	t_s	$V_{CC} = -3\text{V}$, $I_C = -10\text{mA}$	-	-	225	ns
Fall Time	t_f	$I_{B1} = I_{B2} = 1\text{mA}$	-	-	75	ns

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

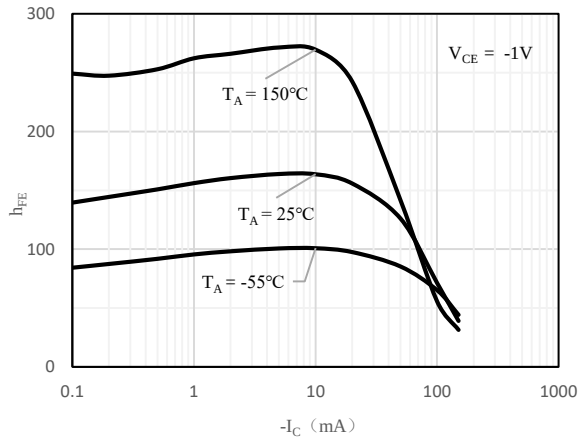


Fig 1 h_{FE} vs. I_C

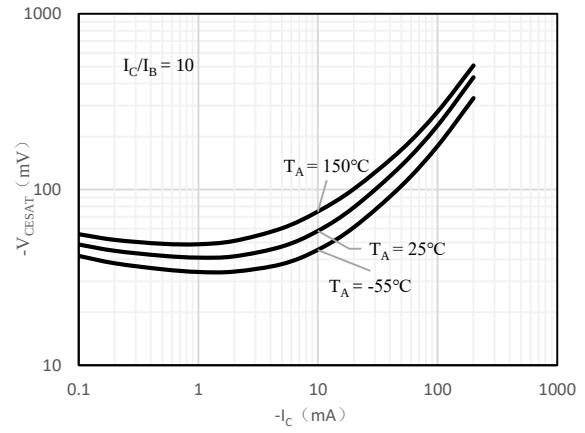


Fig 2 $V_{CE(sat)}$ vs. I_C

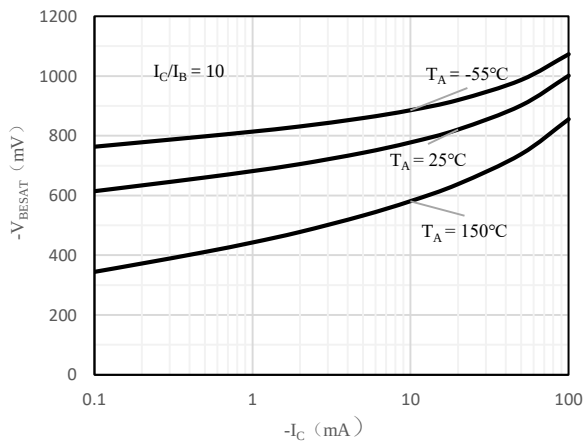


Fig 3 $V_{BE(sat)}$ vs. I_C

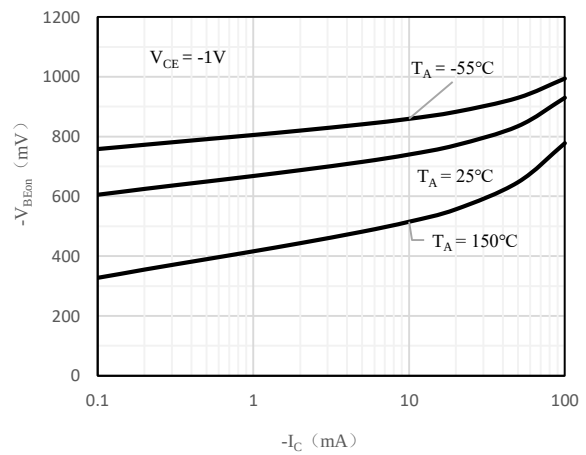
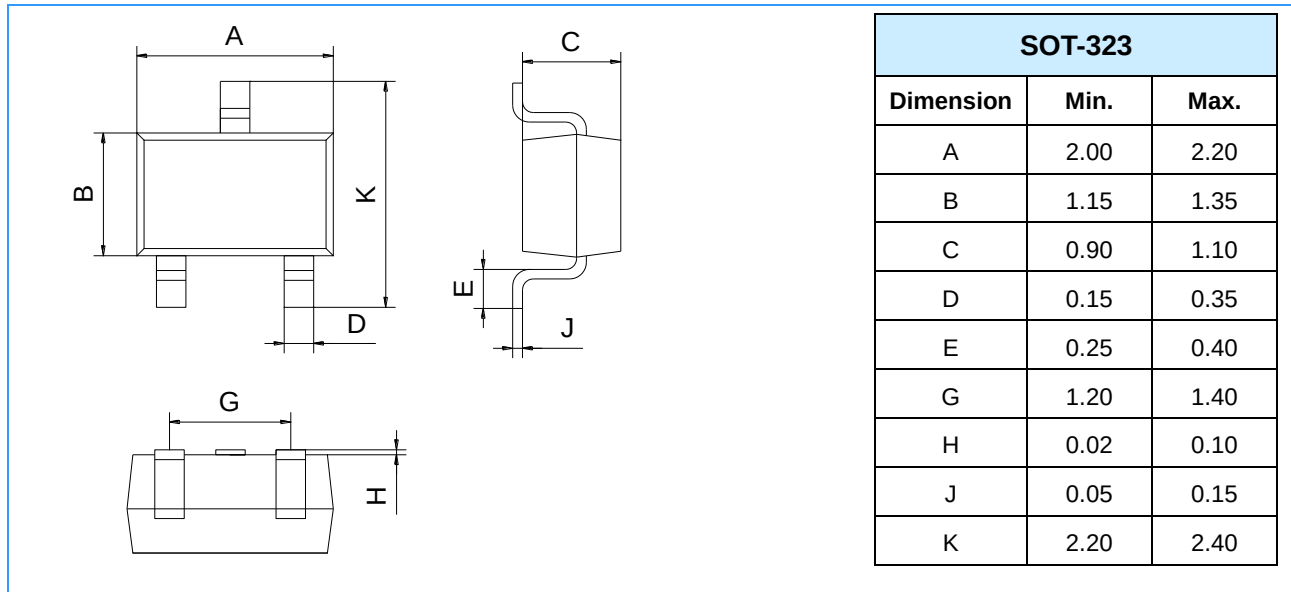
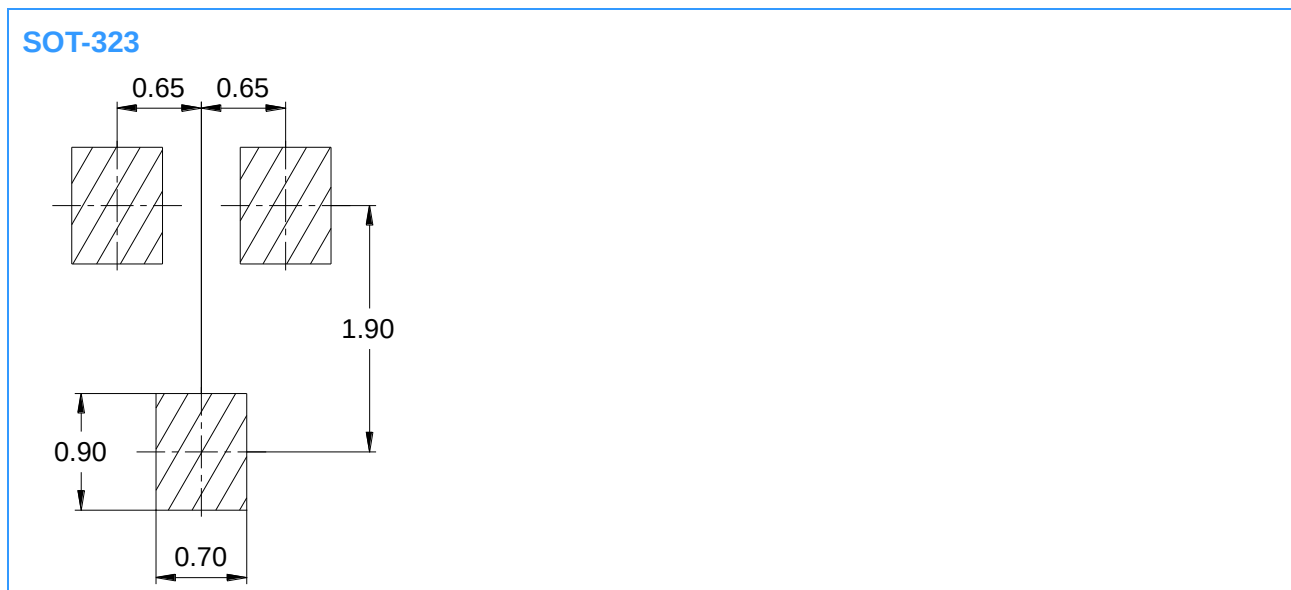


Fig 4 $V_{BE(ON)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



IMPORTANT NOTICE

Changzhou Galaxy Century Microelectronics (GME) reserves the right to make changes without further notice to any product information (copyrighted) herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.