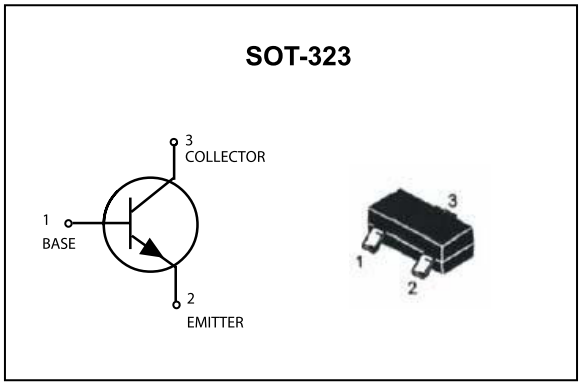
MMST5551-Q1

NPN Transistors

FEATURES

- Epitaxial planar die construction
- High stability and high reliability
- Compliant to Halogen-free
- Suffix “-Q1” for AEC-Q101



MECHANICAL DATA

- Case: SOT-323
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202 Method 208
- Marking: K4N

Maximum Ratings (T_A =25℃ unless otherwise noted)

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
Collector Current (Continuous)	I_C	0.6	A
Power Dissipation	P_D	0.2	W
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics（T_A=25℃ Unless otherwise specified）

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	180	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	160	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 120V, I_E = 0	-	-	50	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 4V, I_C = 0	-	-	50	nA
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 1mA	80	-	-	-
		V_{CE} = 5V, I_C = 10mA	80	-	300	-
		V_{CE} = 5V, I_C = 50mA	30	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	0.2	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	1	V
Current-Gain— Bandwidth Product	f_T	I_C = 10mA, V_{CE} = 10V f = 100MHz	80	-	-	MHz

Typical Characteristics

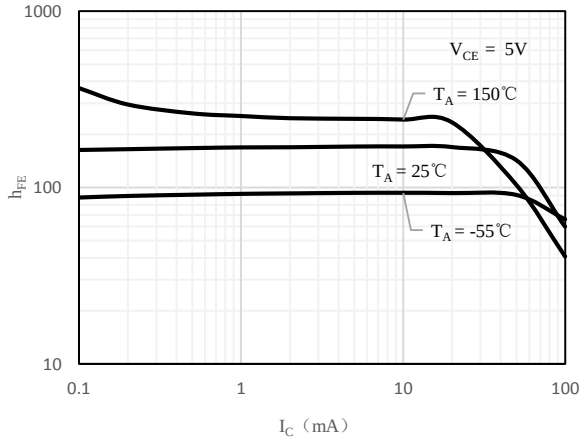


Fig 1 h_{FE} vs. I_C

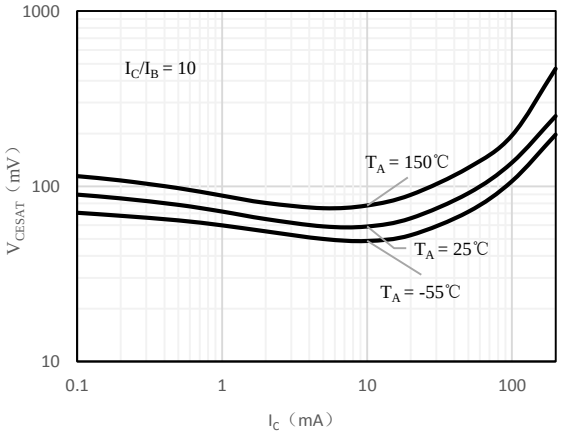


Fig 2 $V_{CE(sat)}$ vs. I_C

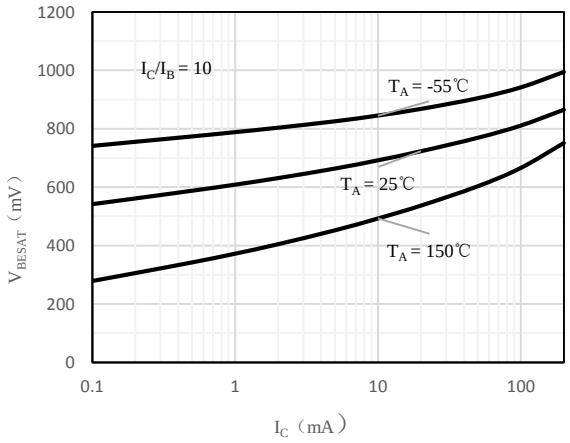


Fig 3 $V_{BE(sat)}$ vs. I_C

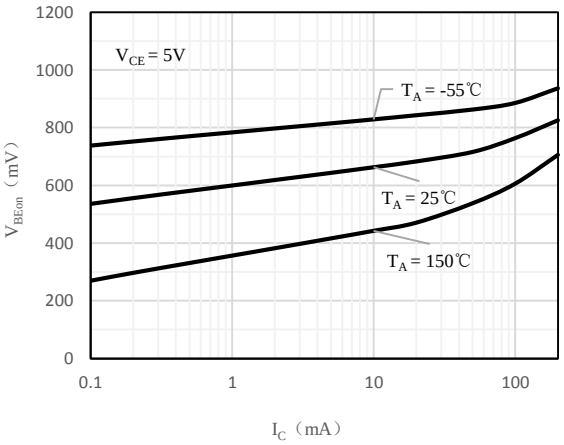
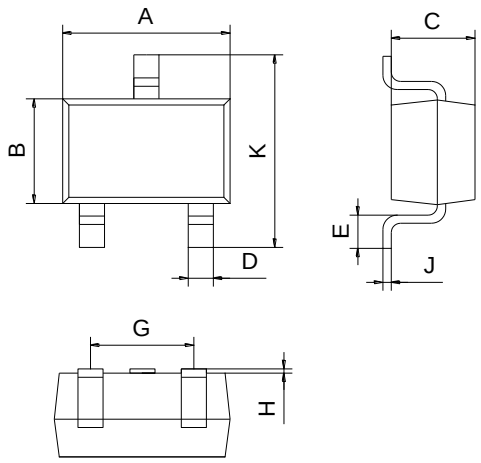


Fig 4 $V_{BE(ON)}$ vs. I_C

SOT-323 Package Outline Dimensions



SOT-323		
Dimension	**Min.**	**Max.**
A	1.80	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.40
E	0.25	0.46
G	1.20	1.40
H	0.00	0.10
J	0.05	0.25
K	2.10	2.45

SOT-323 Suggested Pad Layout