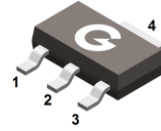
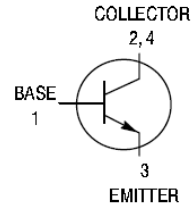


Features

- 5A continuous current
- Up to 20A peak current
- Very low saturation voltages
- RoHS compliant with Halogen-free

HF



SOT-223

Mechanical Data

- Case: SOT-223
- 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
GT4510R	SOT-223	4000 pcs / Tape & Reel	T4510

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	100	V
Collector-Emitter Breakdown Voltage	V _{CEO}	100	V
Emitter-Base Breakdown Voltage	V _{EBO}	5	V
Collector Current (Continuous)	I _C	5	A
Collector Current (Peak)	I _{CM}	20	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	1.25	W
Thermal Resistance Junction-to-Air *1	R _{θJA}	60	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	30	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	25	°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 2OZ copper

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	100	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	100	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 80\text{V}, I_E = 0$	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	-	0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	200	-	-	-
		$V_{CE} = 2\text{V}, I_C = 1\text{A}$	150	-	-	-
		$V_{CE} = 2\text{V}, I_C = 2\text{A}$	100	-	-	-
		$V_{CE} = 2\text{V}, I_C = 4\text{A}$	50	-	-	-
		$V_{CE} = 2\text{V}, I_C = 5\text{A}$	40	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	-	40	mV
		$I_C = 1\text{A}, I_B = 50\text{mA}$	-	-	75	
		$I_C = 1\text{A}, I_B = 10\text{mA}$	-	-	160	
		$I_C = 2\text{A}, I_B = 40\text{mA}$	-	-	180	
		$I_C = 4\text{A}, I_B = 200\text{mA}$	-	-	225	
		$I_C = 4\text{A}, I_B = 400\text{mA}$	-	-	220	
		$I_C = 4.5\text{A}, I_B = 225\text{mA}$	-	-	245	
Collector-emitter Saturation Resistance	$R_{CE(sat)}$	$I_C = 4\text{A}, I_B = 200\text{mA}$	-	46	55	m Ω
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$	-	-	0.9	V
		$I_C = 4\text{A}, I_B = 400\text{mA}$	-	-	1.1	
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 100\text{mA}$ $f = 100\text{MHz}$	-	110	-	MHz

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

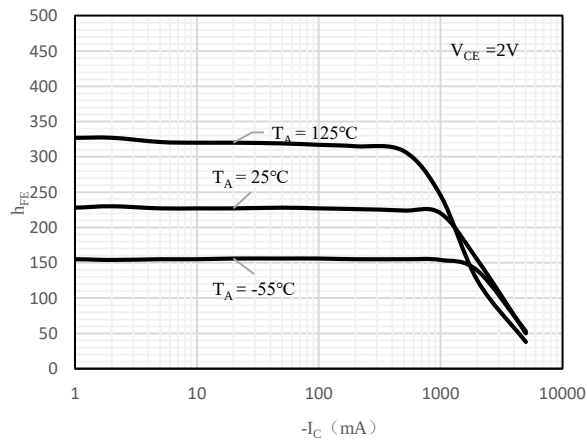


Fig 1 h_{FE} vs. I_C (H)

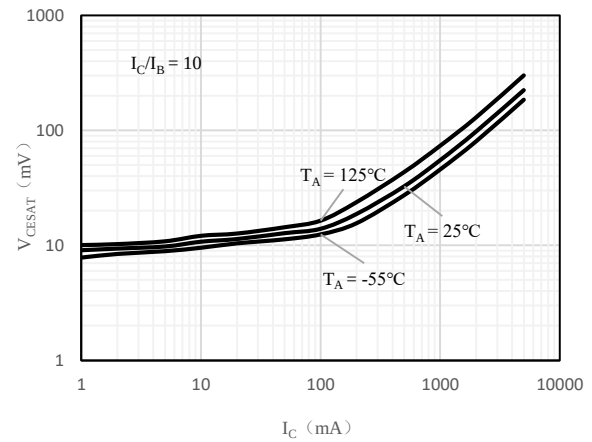


Fig 2 $V_{CE(sat)}$ vs. I_C

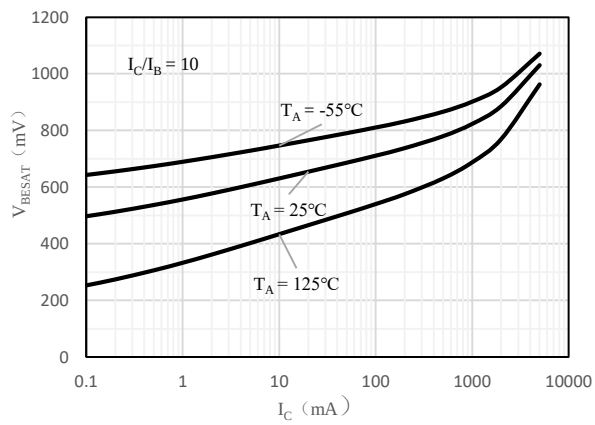


Fig 3 $V_{BE(sat)}$ vs. I_C

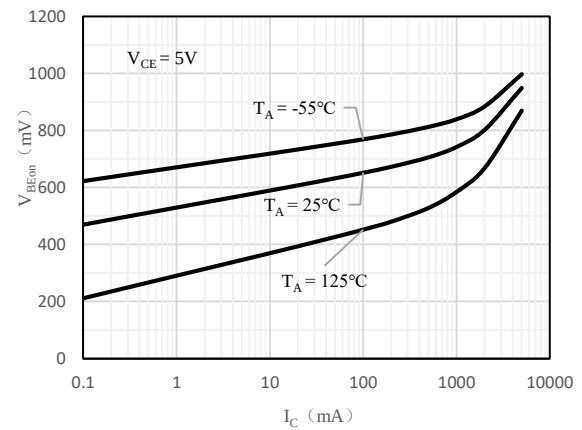
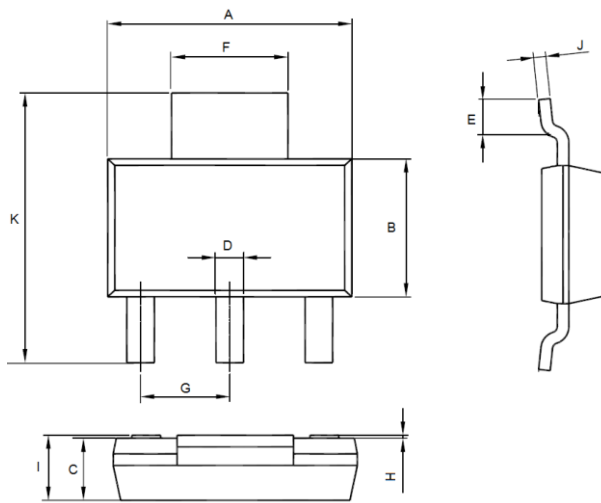


Fig 4 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



SOT-223		
Dimension	Min.	Max.
A	6.10	6.50
B	3.30	3.70
C	1.50	1.70
D	0.66	0.82
E	0.90	1.15
F	2.90	3.10
G	2.20	2.40
H	0.02	0.10
I	1.52	1.80
J	0.20	0.40
K	6.70	7.30

Mounting Pad Layout (Unit: mm)

SOT-223

