

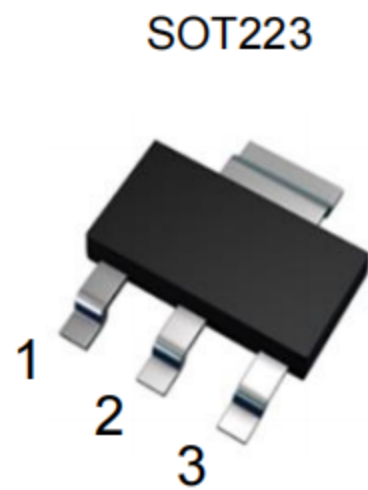


Features

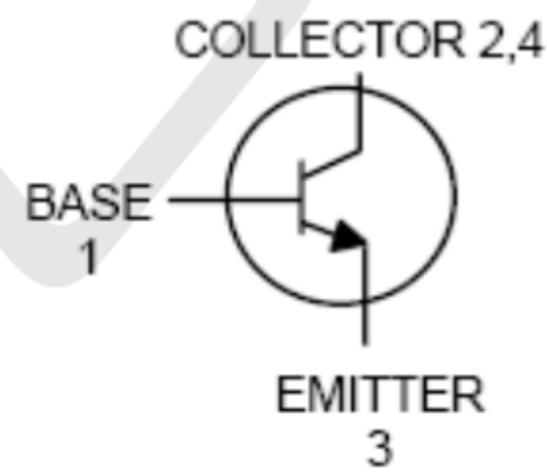
- High Collector Current
- Low Collector-emitter Saturation Voltage

Mechanical Data

- Case: SOT-223
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, Method 208



Circuit Diagram



Marking: ZT2222A

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	75	V
Collector-Emitter Breakdown Voltage	V_{CEO}	40	V
Emitter-Base Breakdown Voltage	V_{EBO}	6	V
Collector Current (Continuous)	I_C	0.6	A
Collector Current –Peak pulse width $\leq 40\mu s$, $\delta = 0.35$	I_{CM}	1.5	A



Thermal Characteristic

Parameter	Symbol	Value	Unit
Power Dissipation (Collector) *1	P_D	1.15	W
Thermal Resistance (Junction-to-Ambient)	$R_{\theta JA}$	108	$^{\circ}C/W$
Junction Temperature	T_J	-55 ~ +150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^{\circ}C$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	75	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 60V, I_E = 0$	-	-	10	nA
Collector Cut-off Current	I_{CEX}	$V_{CE} = 60V, V_{EB(OFF)} = -3V$	-	-	10	nA
Base Cut-off Current	I_{EBO}	$V_{EB} = 3V, I_C = 0$	-	-	10	nA
DC Current Gain	h_{FE}	$V_{CE} = 10V, I_C = 0.1mA$	35	-	-	-
		$V_{CE} = 10V, I_C = 1mA$	50	-	-	-
		$V_{CE} = 10V, I_C = 10mA$	75	-	-	-
		$V_{CE} = 10V, I_C = 150mA$	100	-	300	-
		$V_{CE} = 10V, I_C = 500mA$	40	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 150mA, I_B = 15mA$	-	-	0.3	V
		$I_C = 500mA, I_B = 50mA$	-	-	1	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 150mA, I_B = 15mA$	-	-	1.2	V
		$I_C = 500mA, I_B = 50mA$	-	-	2	V
Output Capacitance	C_{OBO}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	-	-	8	pF
Input Capacitance	C_{IBO}	$I_C = 0, V_{EB} = 0.5V, f = 1MHz$	-	-	25	pF
Transition Frequency	f_T	$I_C = 20mA, V_{CE} = 20V$ $f = 100MHz$	300	-	-	MHZ
Delay Time	t_d	$V_{CC} = 30V$	-	-	10	ns
Rise Time	t_r	$I_C = 150mA, I_{B1} = 15mA$	-	-	25	ns
Storage Time	t_s	$V_{CC} = 30V, I_C = 150mA$	-	-	225	ns
Fall Time	t_f	$I_{B1} = I_{B2} = 15mA$	-	-	60	ns

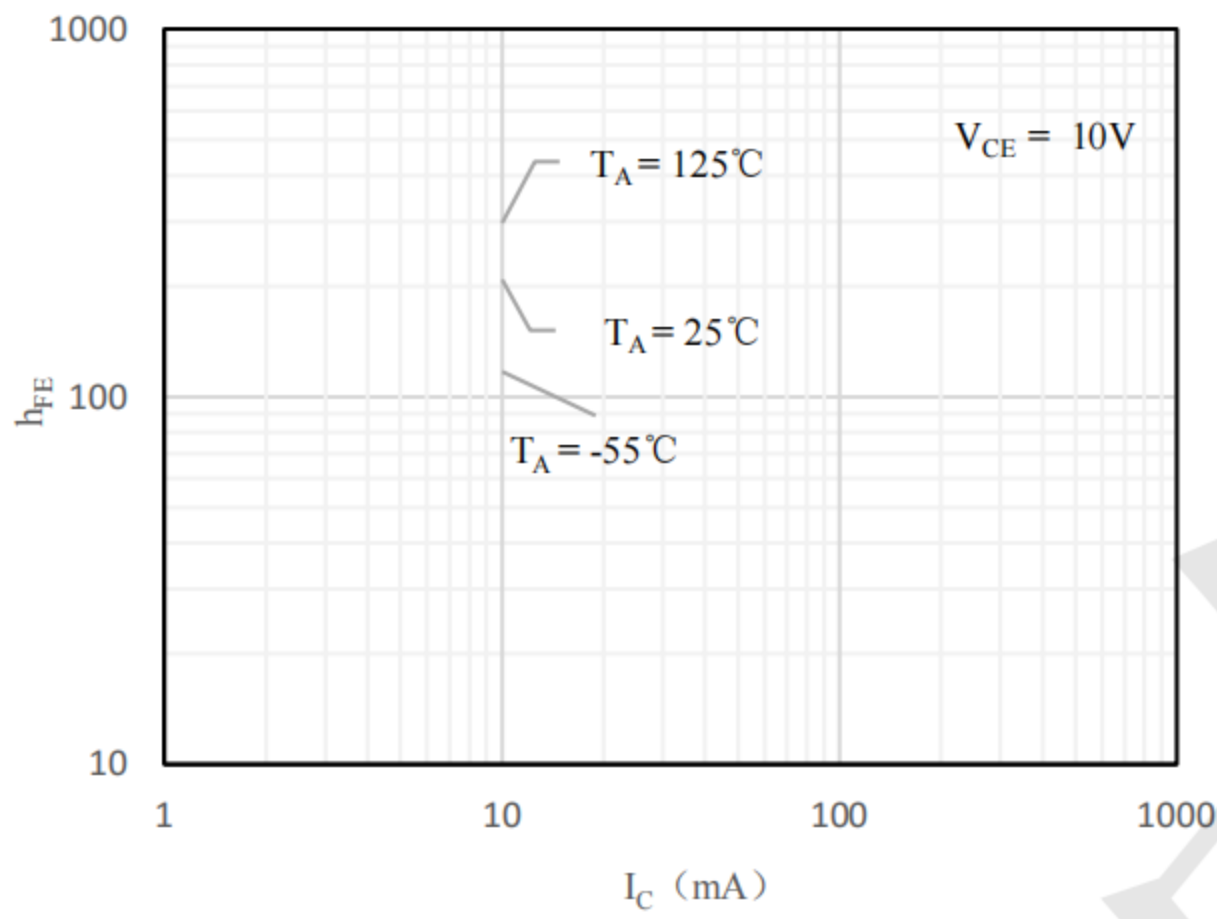


Fig 1 h_{FE} vs. I_C

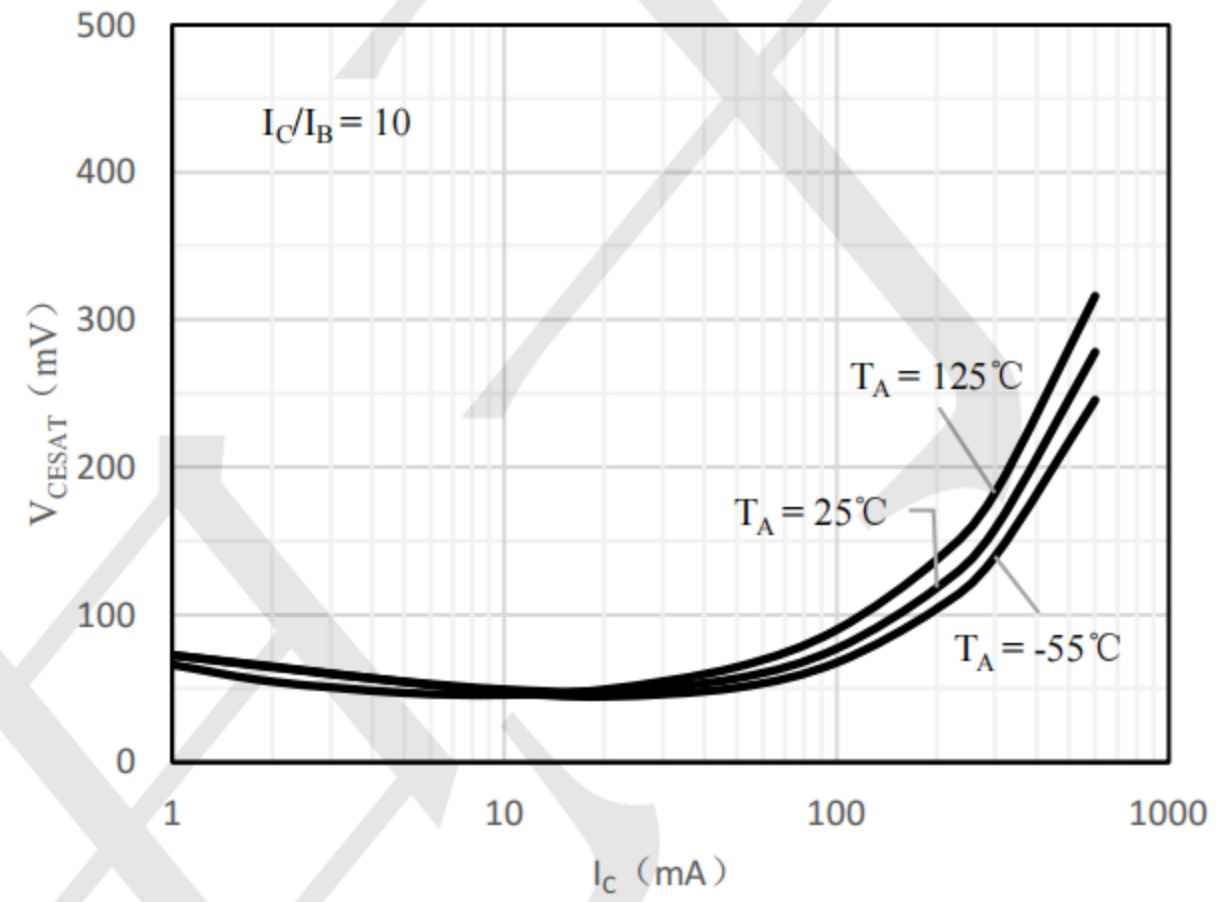


Fig 2 $V_{CE(sat)}$ vs. I_C

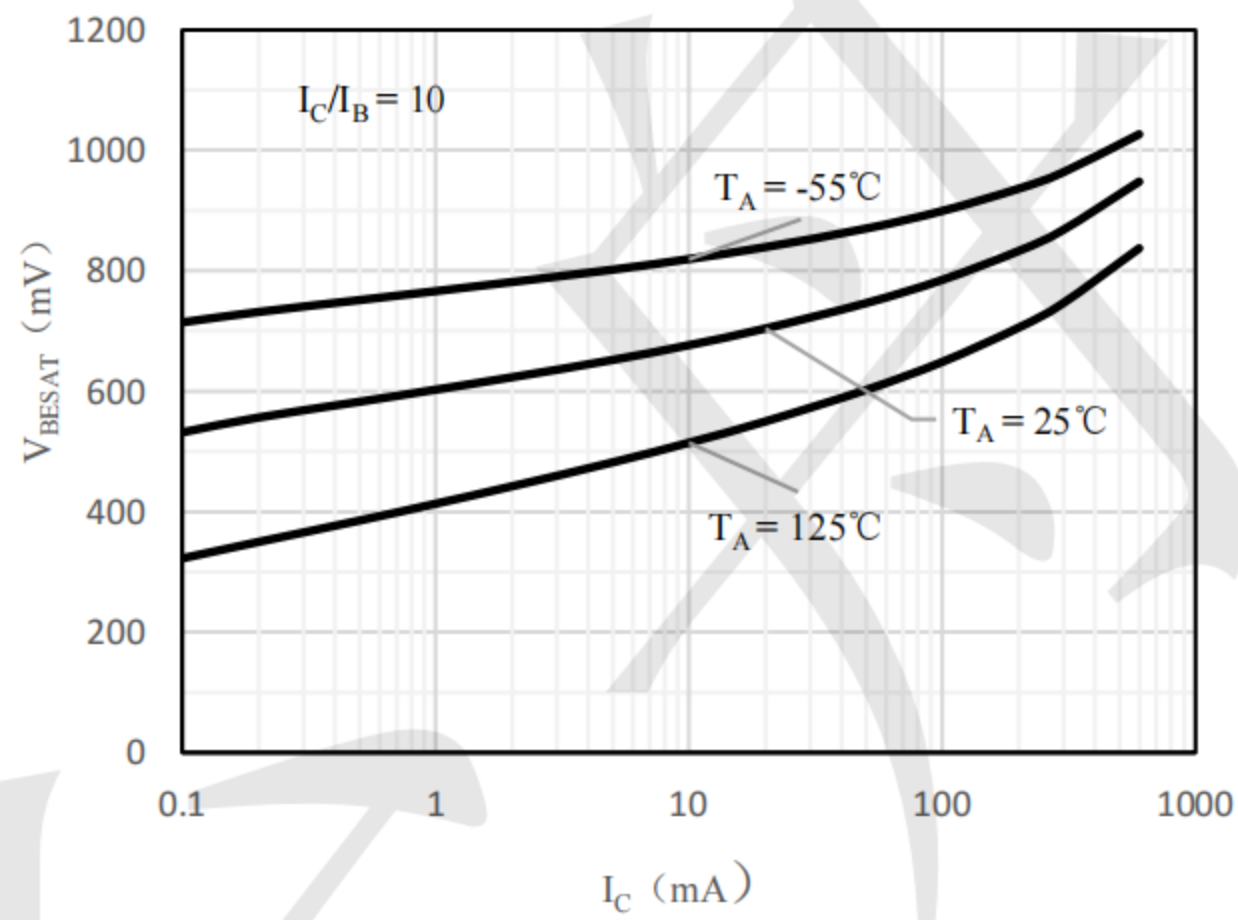


Fig 3 $V_{BE(sat)}$ vs. I_C

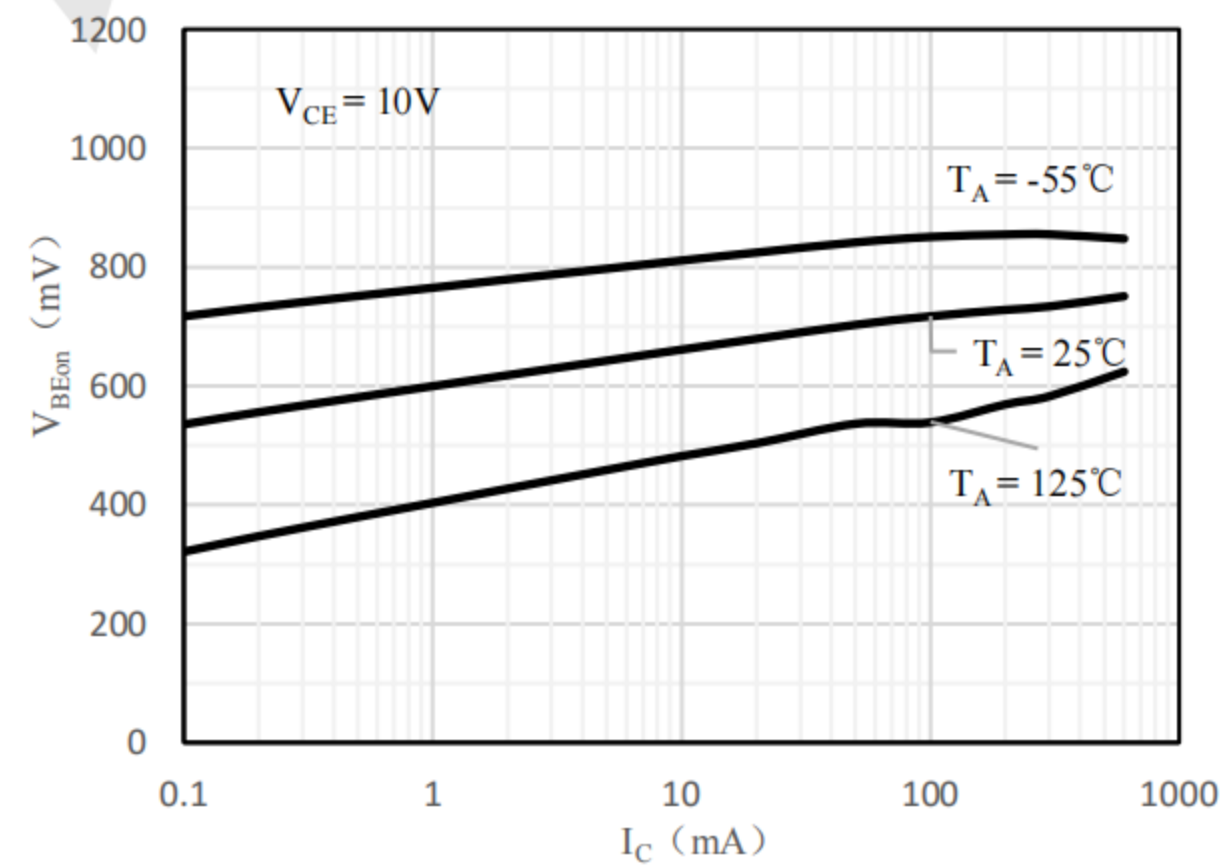
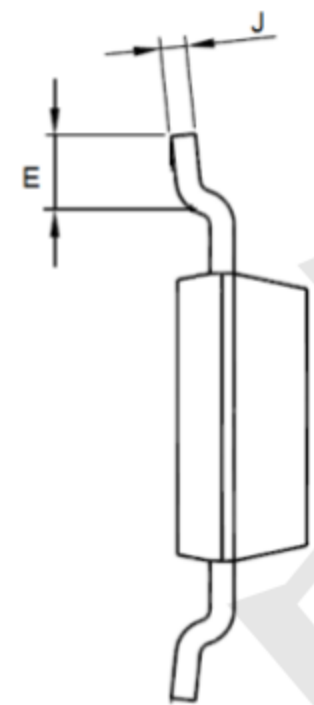
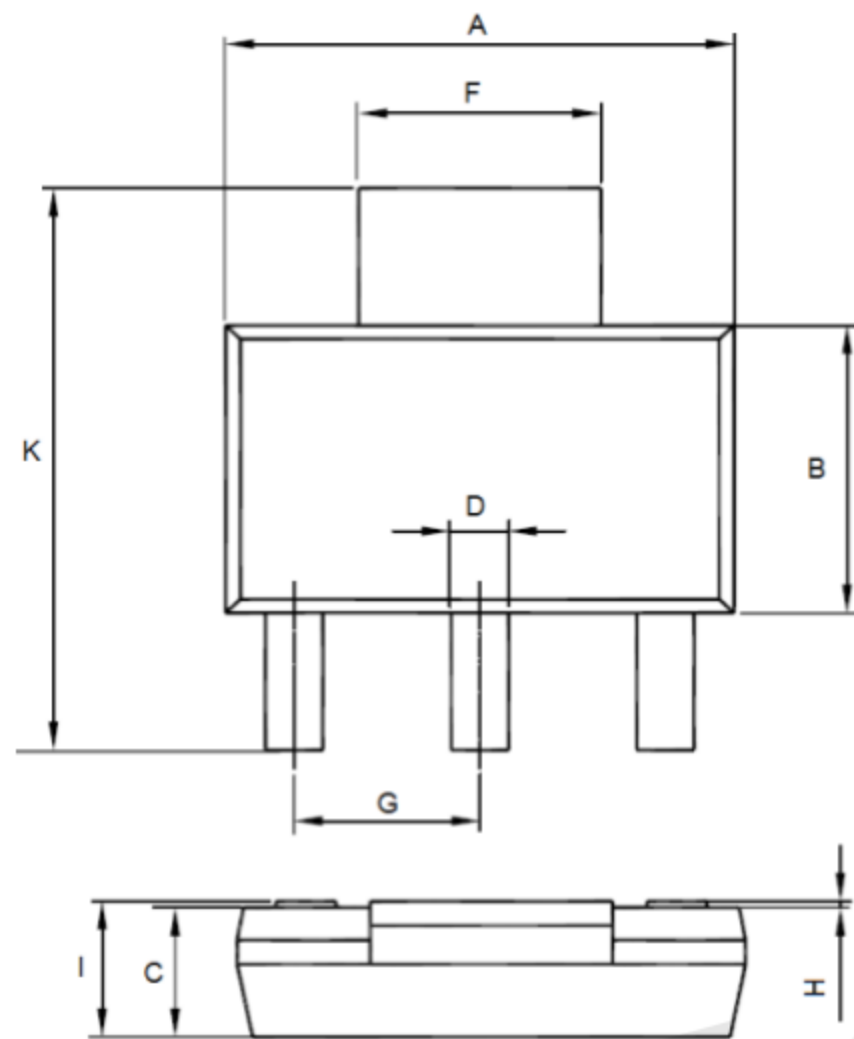


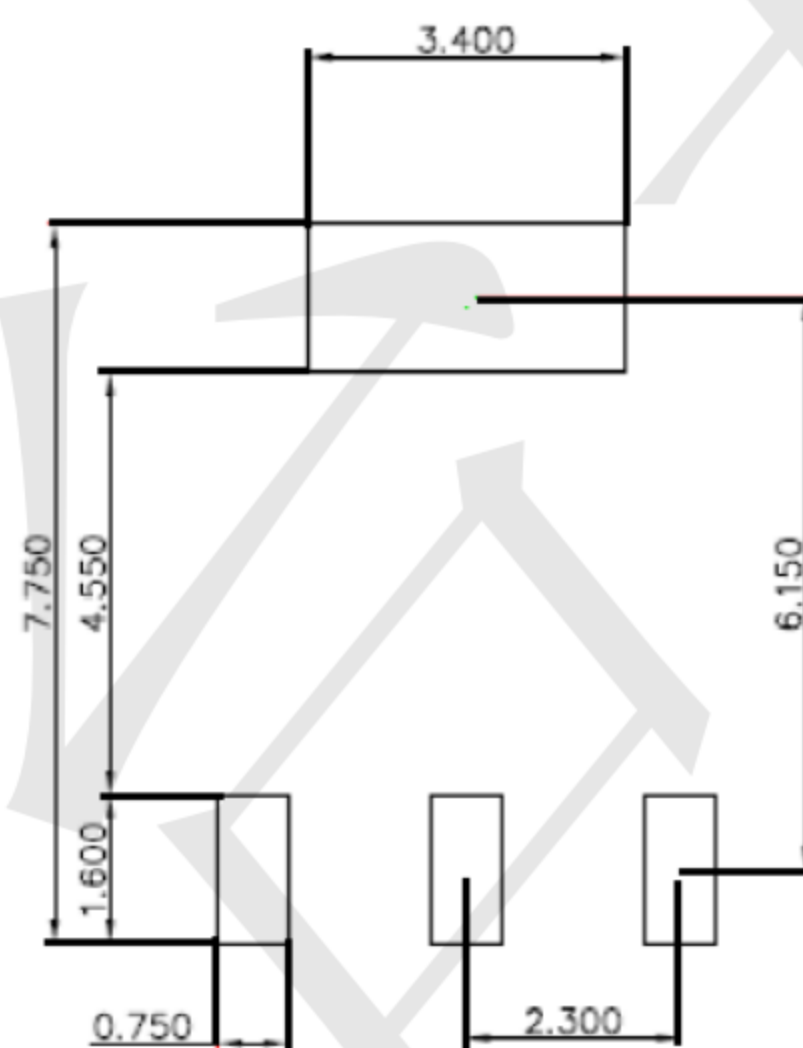
Fig 4 $V_{BE(on)}$ vs. I_C



Outline Drawing - SOT223



SOT-223		
Dim	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



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