

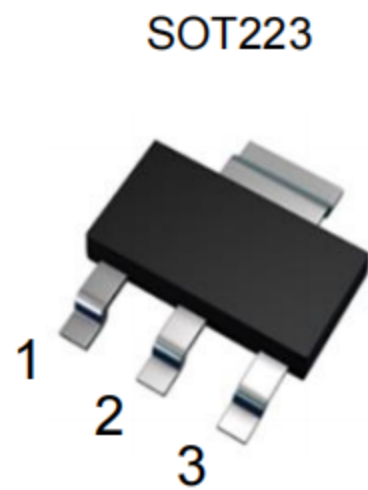


Features

- High Collector Current
- Low Collector-emitter Saturation Voltage

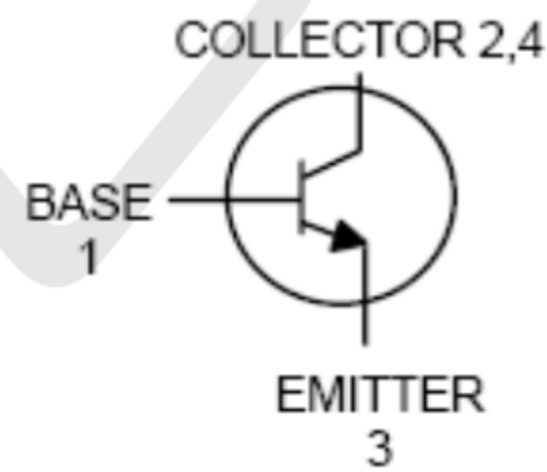
Mechanical Data

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



Marking:BCP54-16

Circuit Diagram



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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	45	V
Collector-Emitter Breakdown Voltage	V_{CEO}	45	V
Emitter-Base Breakdown Voltage	V_{EBO}	5	V
Collector Current (Continuous)	I_C	1	A
Collector Current (Peak)	I_{CM}	1.5	A
Base Current (Continuous)	I_B	0.1	A
Base Current (Peak)	I_{BM}	0.2	A



Thermal Characteristic

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	1.5	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	83.3	$^{\circ}C/W$
Junction Temperature Range	T_J	-55 ~ +150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^{\circ}C$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_E = 0$	45	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	45	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30V, I_E = 0, T_A = 25^{\circ}C$	-	-	100	nA
		$V_{CB} = 30V, I_E = 0, T_A = 150^{\circ}C$	-	-	20	μA
DC Current Gain	h_{FE}	$V_{CE} = 2V, I_C = 5mA$	25	-	-	-
		$V_{CE} = 2V, I_C = 150mA$	100	-	250	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$	-	-	0.5	V
Base-emitter Voltage	$V_{BE(on)}$	$I_C = 0.5A, V_{CE} = 2V$	-	-	1	V
Transition Frequency	f_T	$V_{CE} = 10V, I_C = 50mA$ $f = 20MHz$	100	-	-	MHz

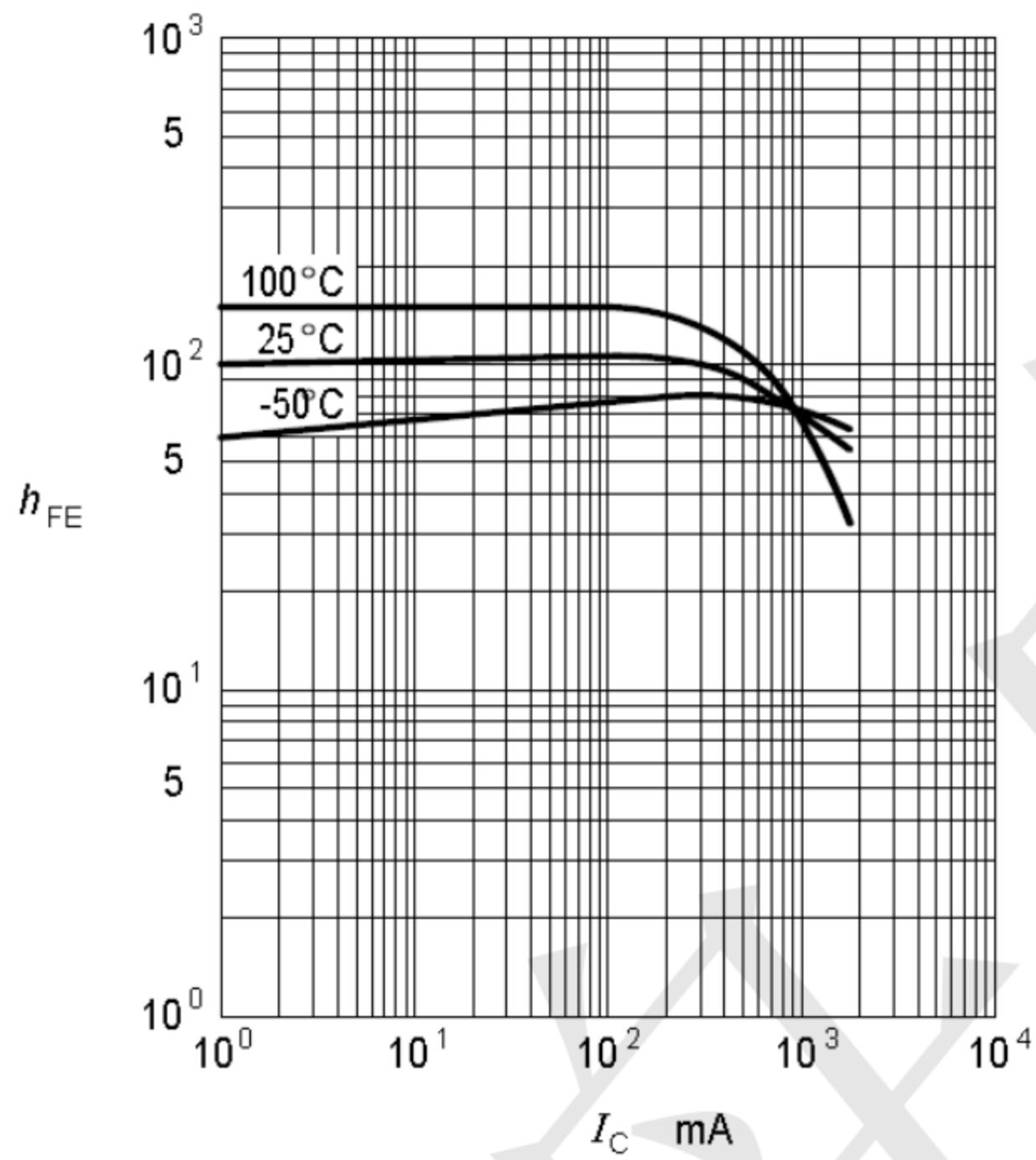


Fig. 1 h_{FE} vs. I_C ($V_{CE} = 2V$)

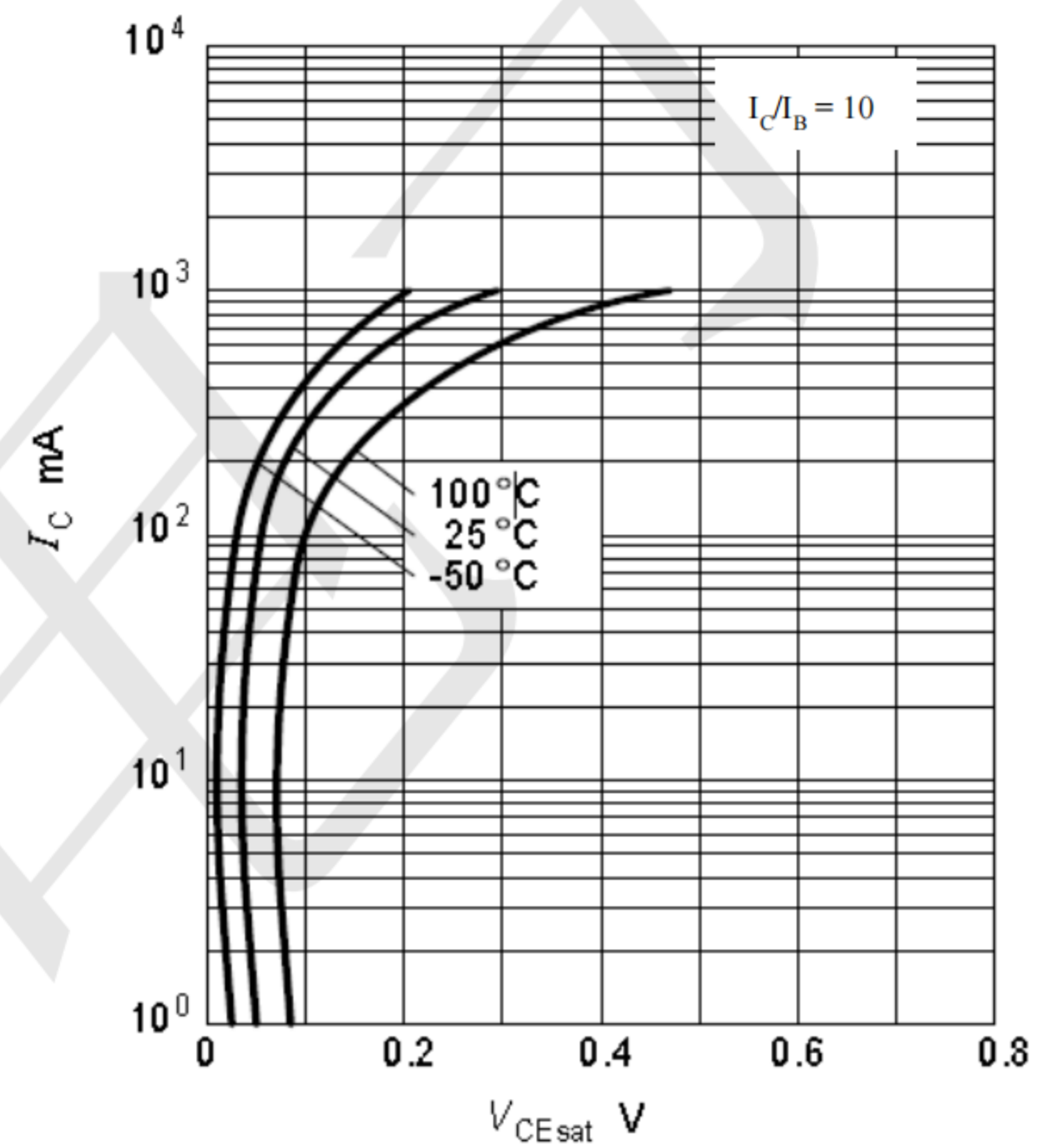
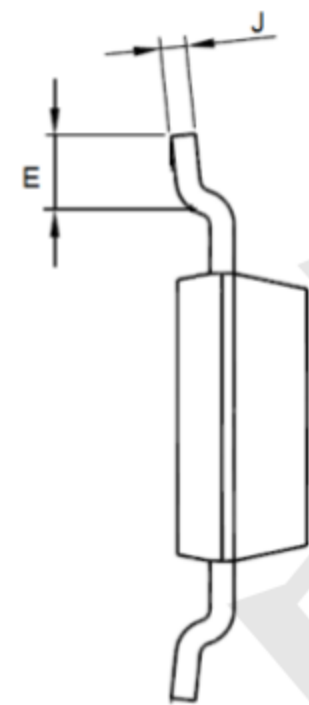
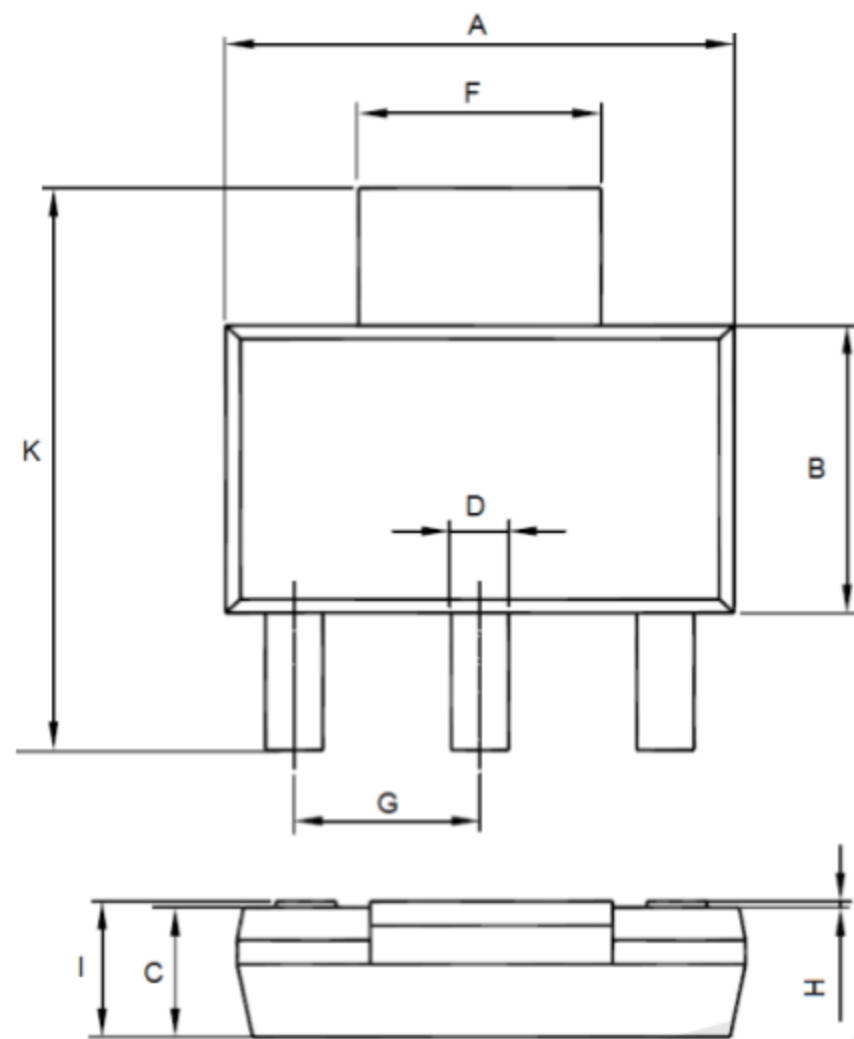


Fig. 2 $V_{CE(sat)}$ vs. I_C



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

