

/ Descriptions

SOT-223

NPN

Silicon NPN transistor in a SOT-223 Plastic Package.

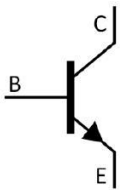
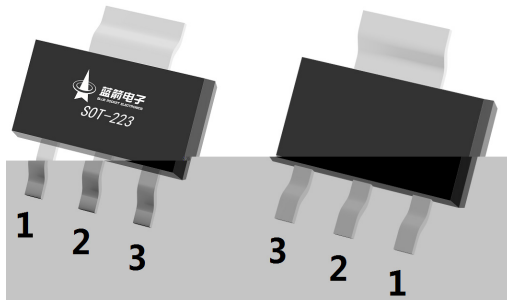
/ Features

AEC-Q101

High current, Low voltage, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

Medium Power switching applications, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit**/ Pinning**

PIN1 Base

PIN 2 Collector

PIN 3 Emitter

/ h_{FE} Classifications & Marking

See Marking Instructions.

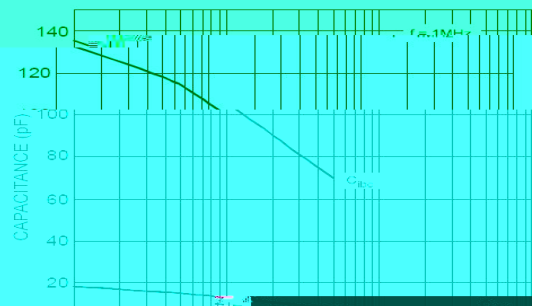
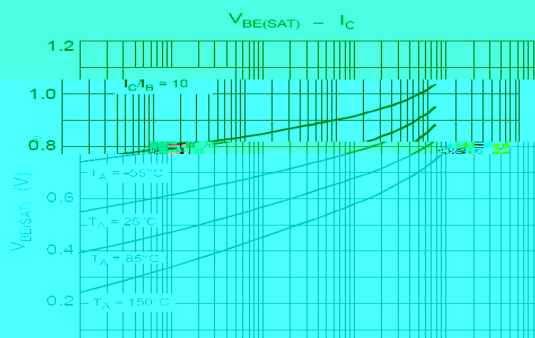
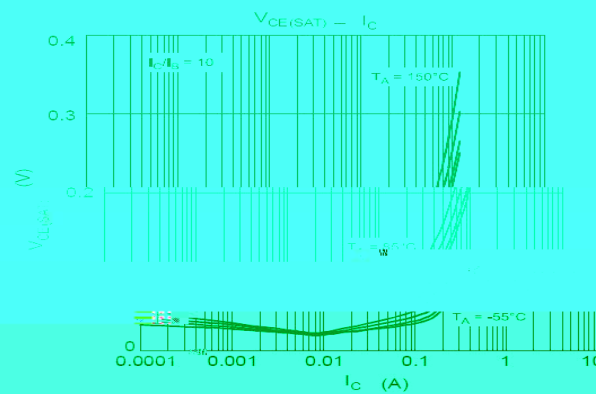
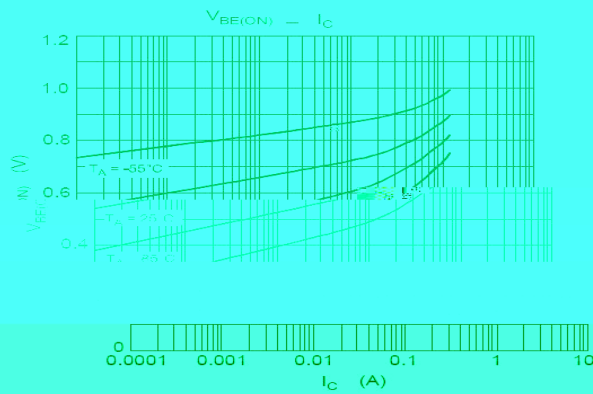
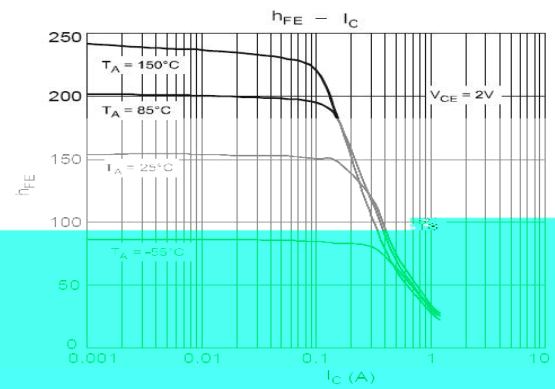
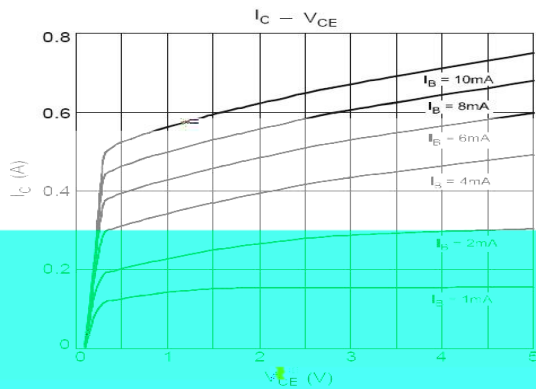
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	100	V
Collector to Emitter Voltage	V_{CEO}	80	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	1.0	A
Peak Pulse Collector Current	I_{CM}	1.5	A
Peak Pulse Base Current	I_{BM}	200	mA
Power Dissipation	P_D	1.2	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	105	K/W
Thermal Resistance, Junction to Leads	$R_{\theta JS}$	13	K/W
Junction Temperature	T_j	150	
Operating and Storage Temperature Range	$T_{stg} \quad T_{amb}$	-65 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30V \quad I_E=0$			100	nA
		$V_{CB}=30V \quad I_E=0 \quad T_j=125$			10	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=5.0V \quad I_C=0$			100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V \quad I_C=5mA$	25			
	$h_{FE(2)}$	$V_{CE}=2.0V \quad I_C=150mA$	100		250	
	$h_{FE(3)}$	$V_{CE}=2.0V \quad I_C=500mA$	25			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA \quad I_B=50mA$			0.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500mA \quad V_{CE}=2.0V$			1.0	V
Transition Frequency	f_T	$V_{CE}=-5V \quad I_C=-10mA \quad f=100MHz$		130		MHz

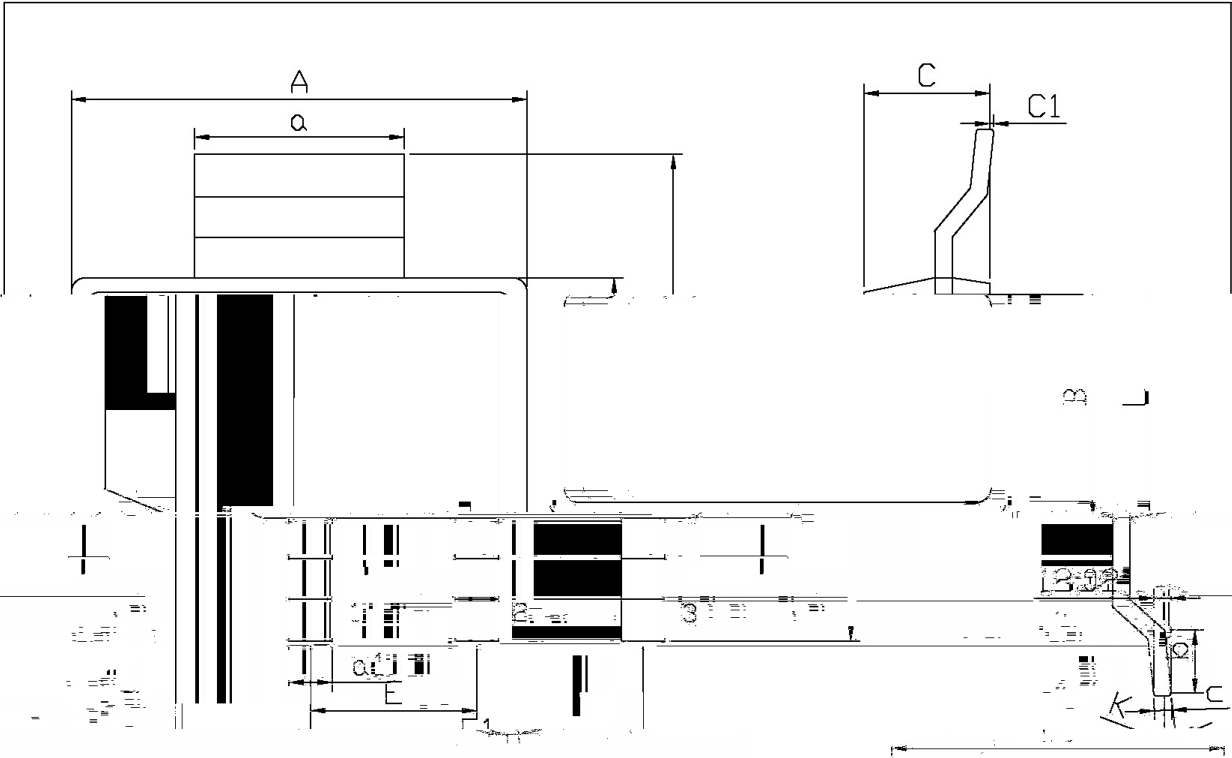
/ Electrical Characteristic Curve



/ Package Dimensions

SOT-223

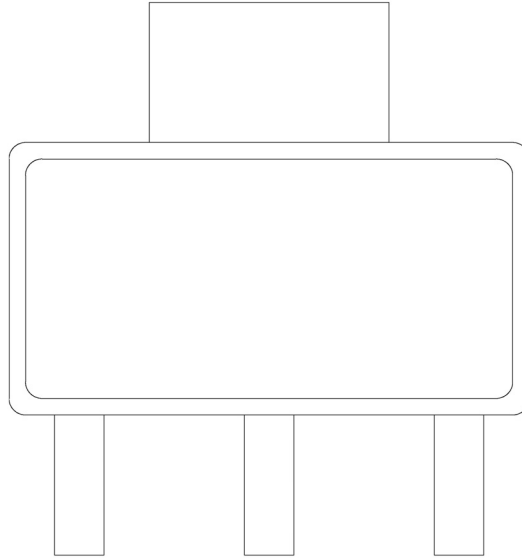
单位; mm



Symbol	Dimensions In Millimeters	Symbol	Dimensions In Millimeters
A	Max 3.20	a	0.91
b	3.70	c	0.24
C	2.80	E	0.91
K	0.80	B	5.10

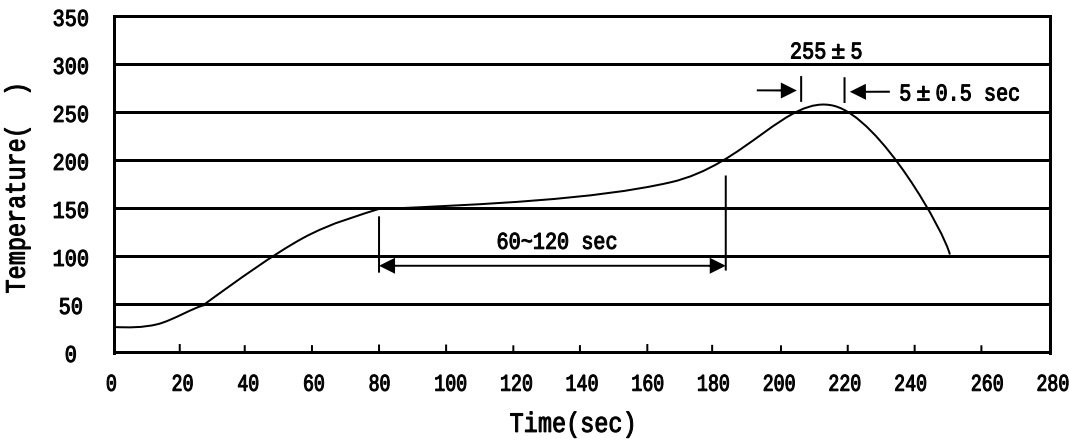
Symbol	Dimensions In Millimeters
A	3.80
a	2.90
B	3.30
C	0.70
E	0.50
K	0.70

/ Marking Instructions



BR

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 200

60 120sec;

1.Preheating:150~200 , Time:60~120sec.
- 2

255±5

5±0.5sec;

2.Peak Temp.:255±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-223	2,500	2	5,000	6	30,000	13 ×12	360×360×50	380×335×366

/ Notices