/ Descriptions

SOT-223 NPN Silicon NPN transistor in a SOT-223 Plastic Package.

/ Features

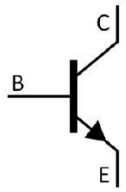
AEC-Q101

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

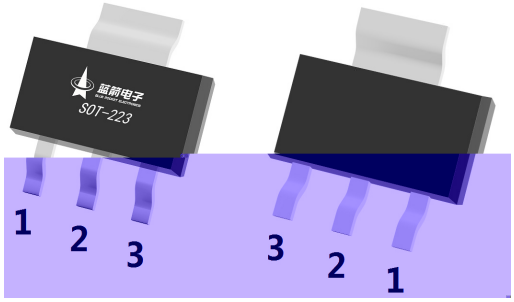
/ Applications

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.

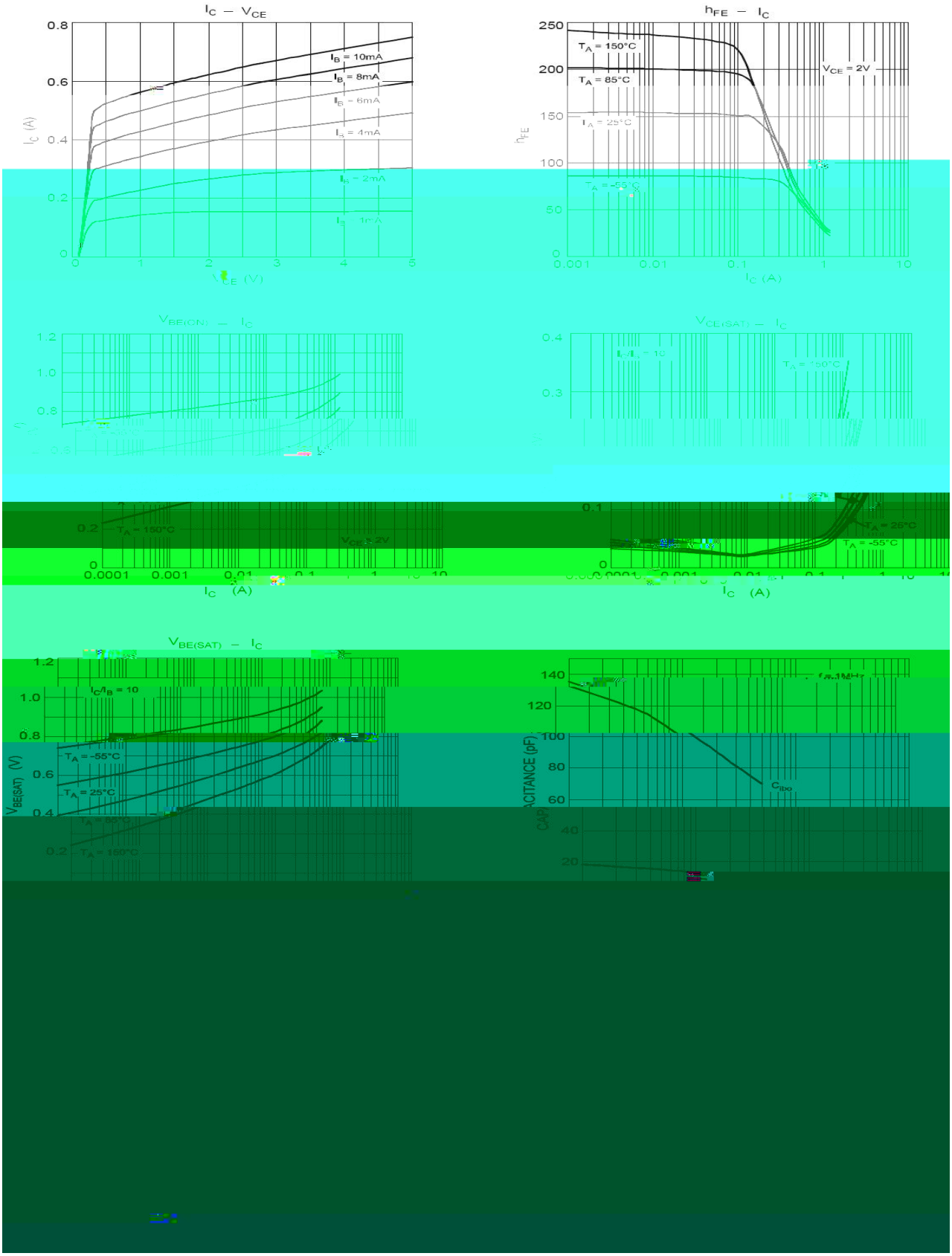
/ Absolute Maximum Ratings(Ta=25)

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

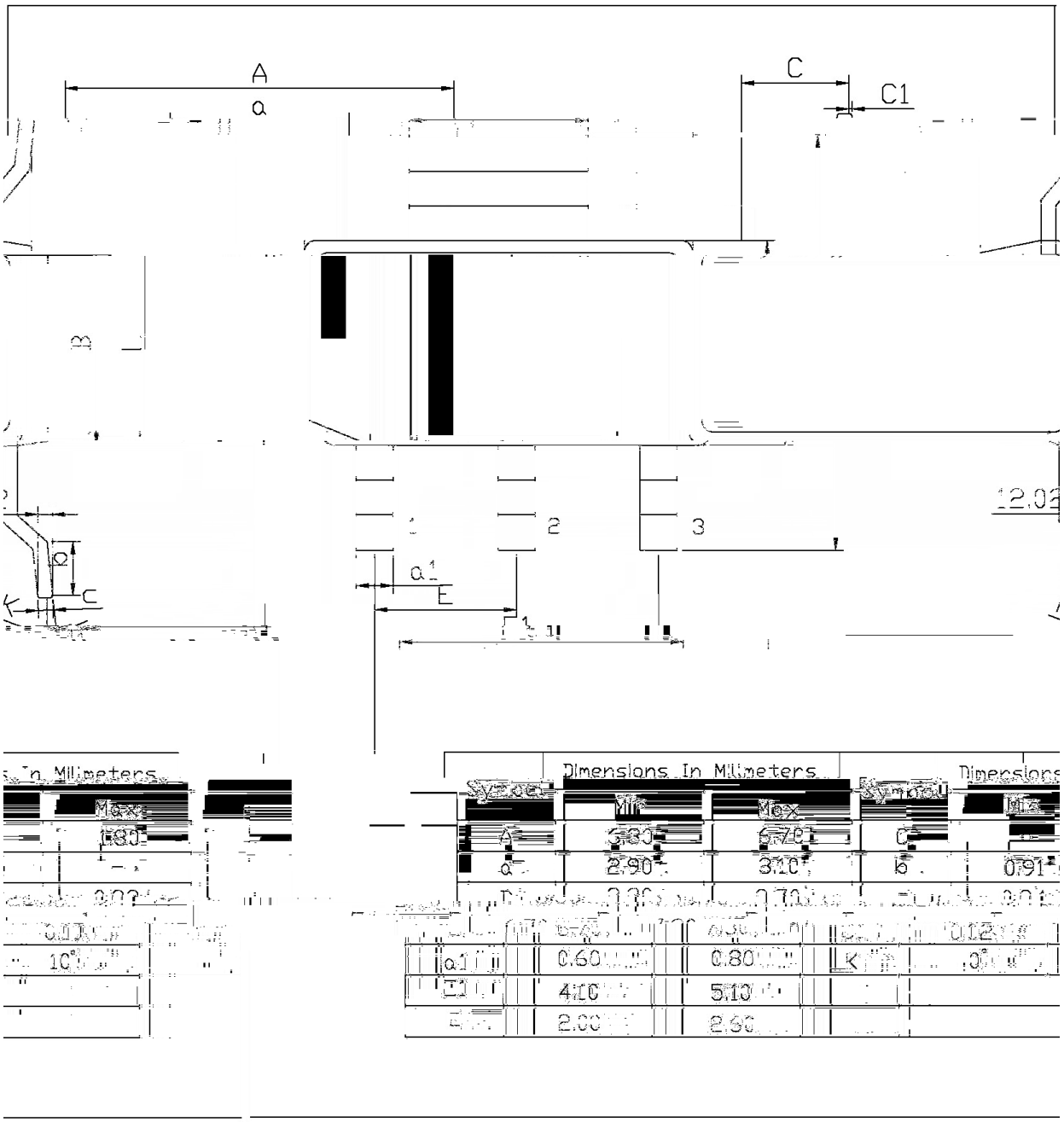
/ Electrical Characteristic Curve



/ Package Dimensions

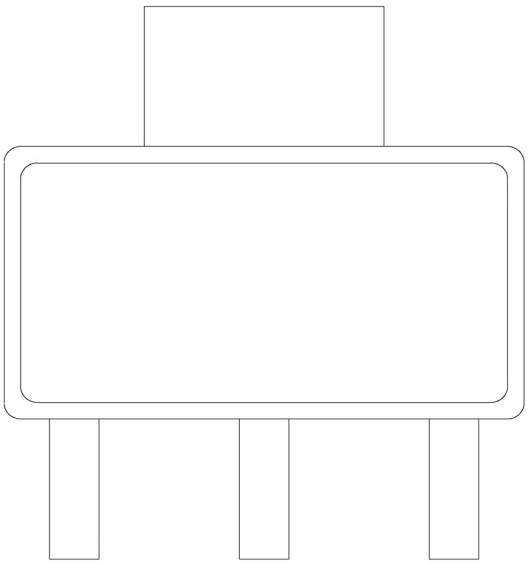
SOT-223

单位：mm



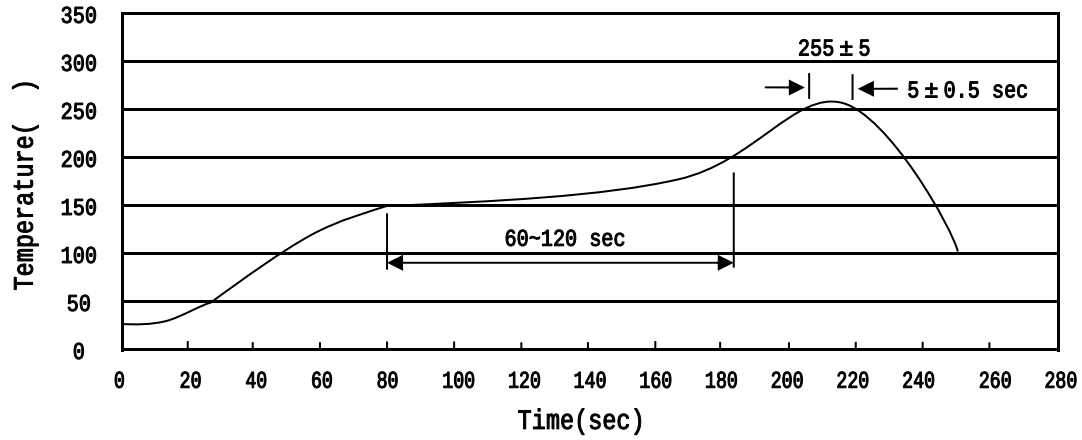
Dimensions In Milimeters				Dimensions			
Symbol	Min	Max		Symbol	Min	Max	
A	6.30	6.70		C			
a	2.90	3.10		b	0.91		
a1	0.60	0.80		K			
	4.10	5.10					
	2.00	2.60					

/ 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 mm³)
	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