

BRDTC144EUAQ

Rev.A Apr.-2023

SOT-323

NPN

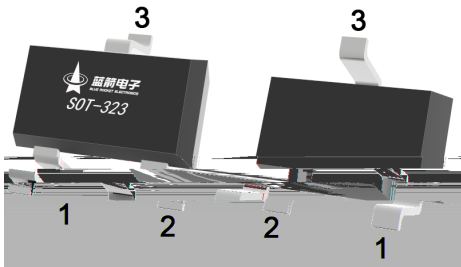
Silicon NPN Digital Transistor in a SOT-323 Plastic Package.

AEC-Q101

With built-in bias resistors, simplify circuit design, reduce a quantity of parts and manufacturing process, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

Switching, Inverter circuit, Interface circuit and driver circuit applications, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



PIN1 Base PIN 2 Emitter PIN 3 Collector

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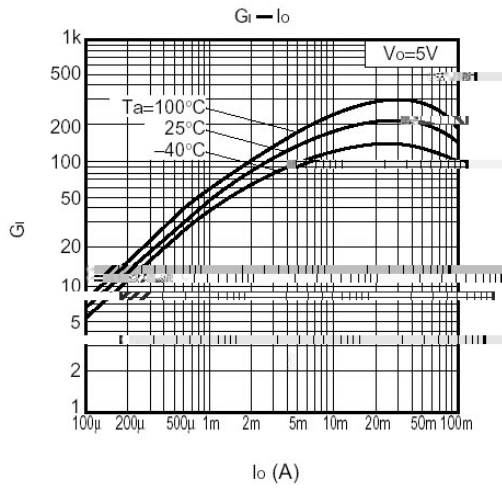
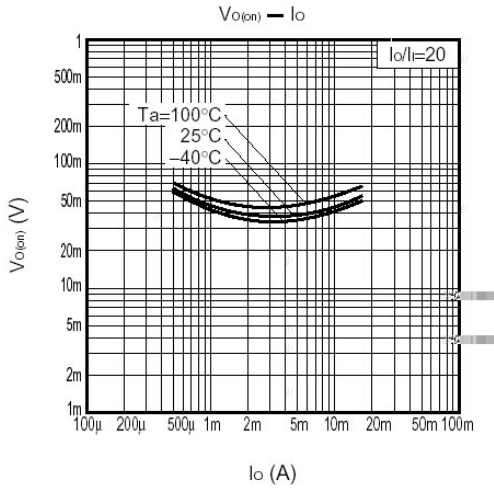
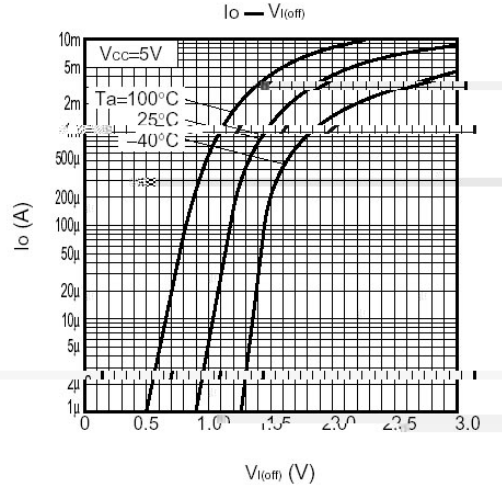
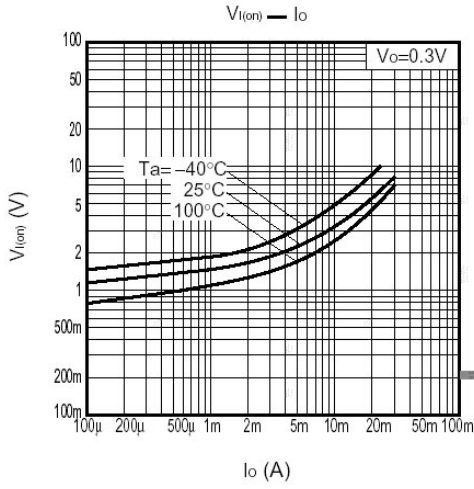
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Output Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	40	V
		-10	V
Output Current	I _C	100	mA
	I _O	30	mA
Collector Power Dissipation	P _C	200	mW
Junction Temperature	T _J	150	
Storage Temperature Range	T _{stg}	-55 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage	V _{I(off)}	V _{CC} =5.0V I _O =100μA			0.5	V
	V _{I(on)}	V _O =0.3V I _O =2.0mA	3.0			V
Output Voltage	V _{O(on)}	I _O =10 mA I _I =0.5mA			0.3	V
Input Current	I _I	V _I =5.0V			0.18	mA
Output Cut-off Current	I _{O(off)}	V _{CC} =50V V _I =0V			0.5	μA
DC Current Gain	G _I	V _O =5.0V I _O =5.0mA	68			
Transition Frequency	f _T	V _{CE} =10V I _E =-5.0mA f=100MHz		250		MHz
Resistance1	R ₁		32.9	47	61.1	K
Resistance Ratio	R ₂ /R ₁		0.8	1.0	1.2	

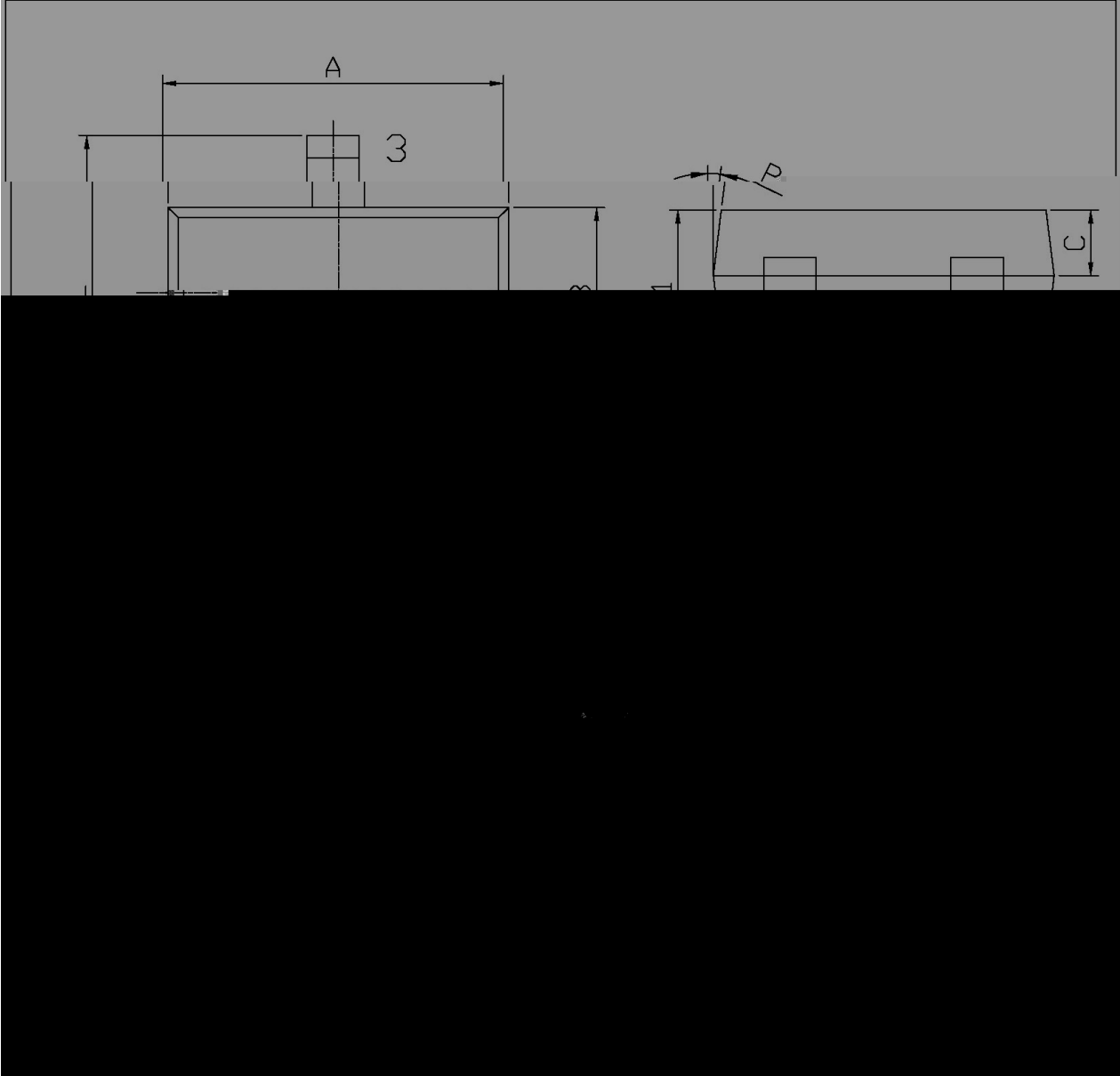
/ Electrical Characteristic Curve



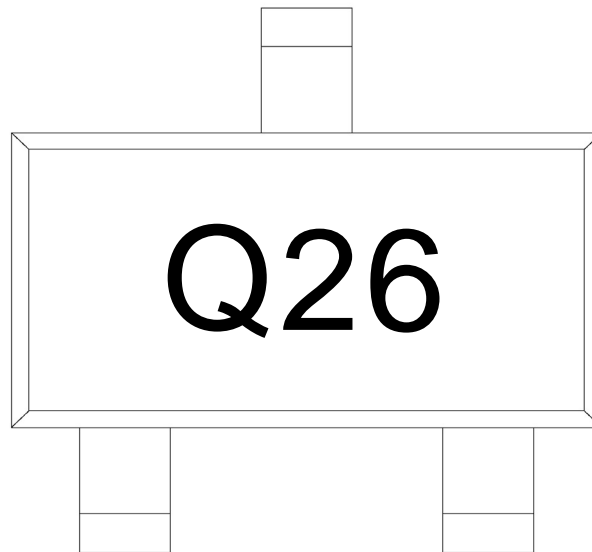
/ Package Dimensions

SOT-323

单位: mm



/ Marking Instructions



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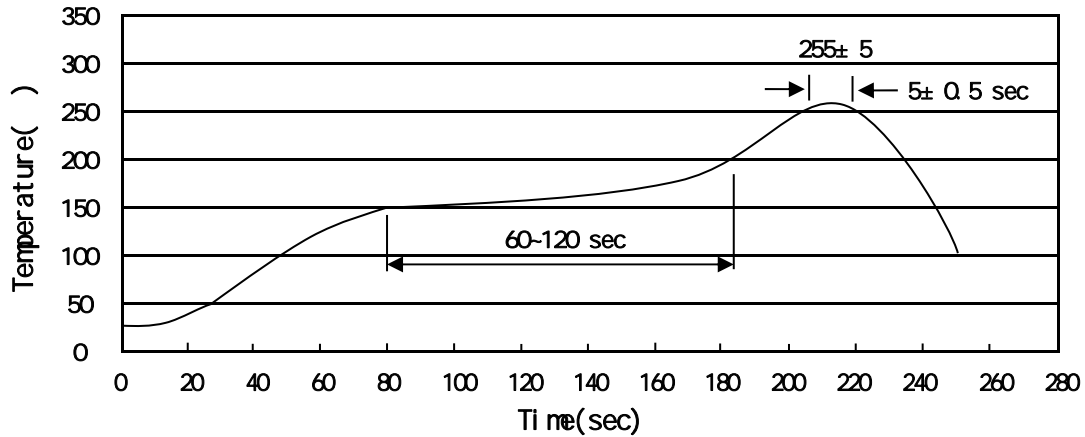
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Note:

Q: Automobile halogen-free product Code

26 Product Type Code

() / 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-323	3,000	10	30,000	6	180,000	7 x8	180x120x180	390x385x205

/ Notices