

BRDTC144EUAQ

Rev.A Apr.-2023

SOT-323

NPN

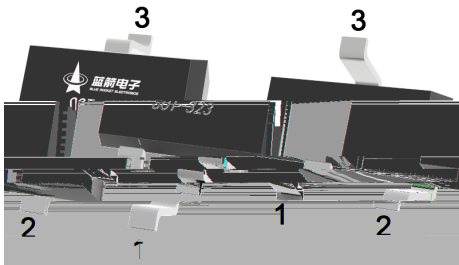
Silicon NPN Digital Transistor in a SOT-323 Plastic Package.

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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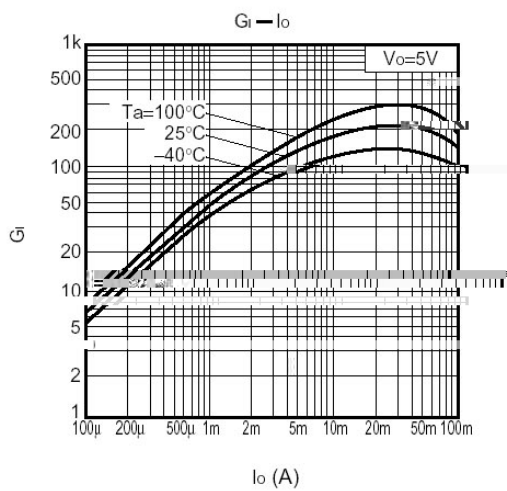
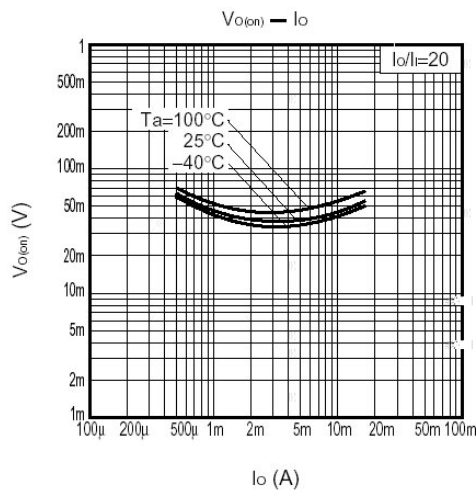
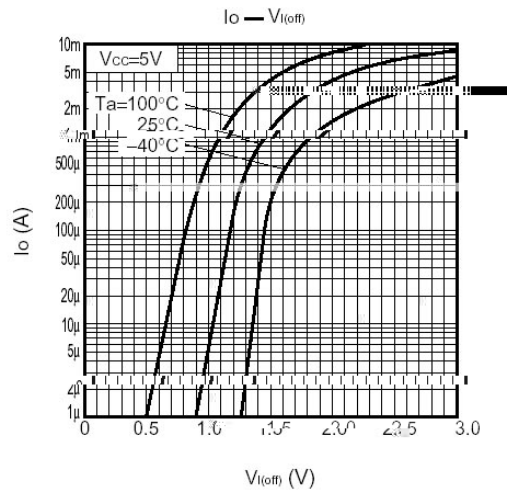
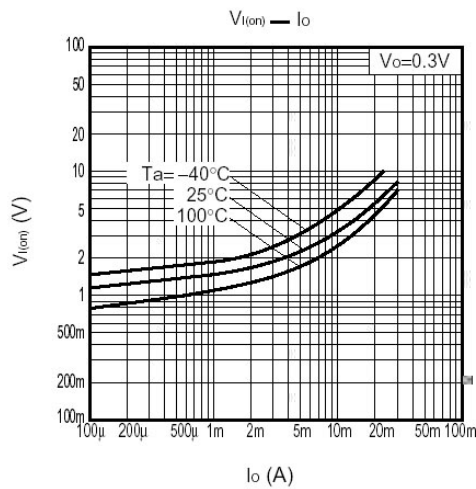
/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

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($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage	$V_{I(off)}$	$V_{CC}=5.0V$ $I_O=100\ \mu A$			0.5	V
	$V_{I(on)}$	$V_O=0.3V$ $I_O=2.0mA$	3.0			V
Output Voltage	$V_{O(on)}$	$I_O=10\ \mu A$ $I_I=0.5mA$			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	

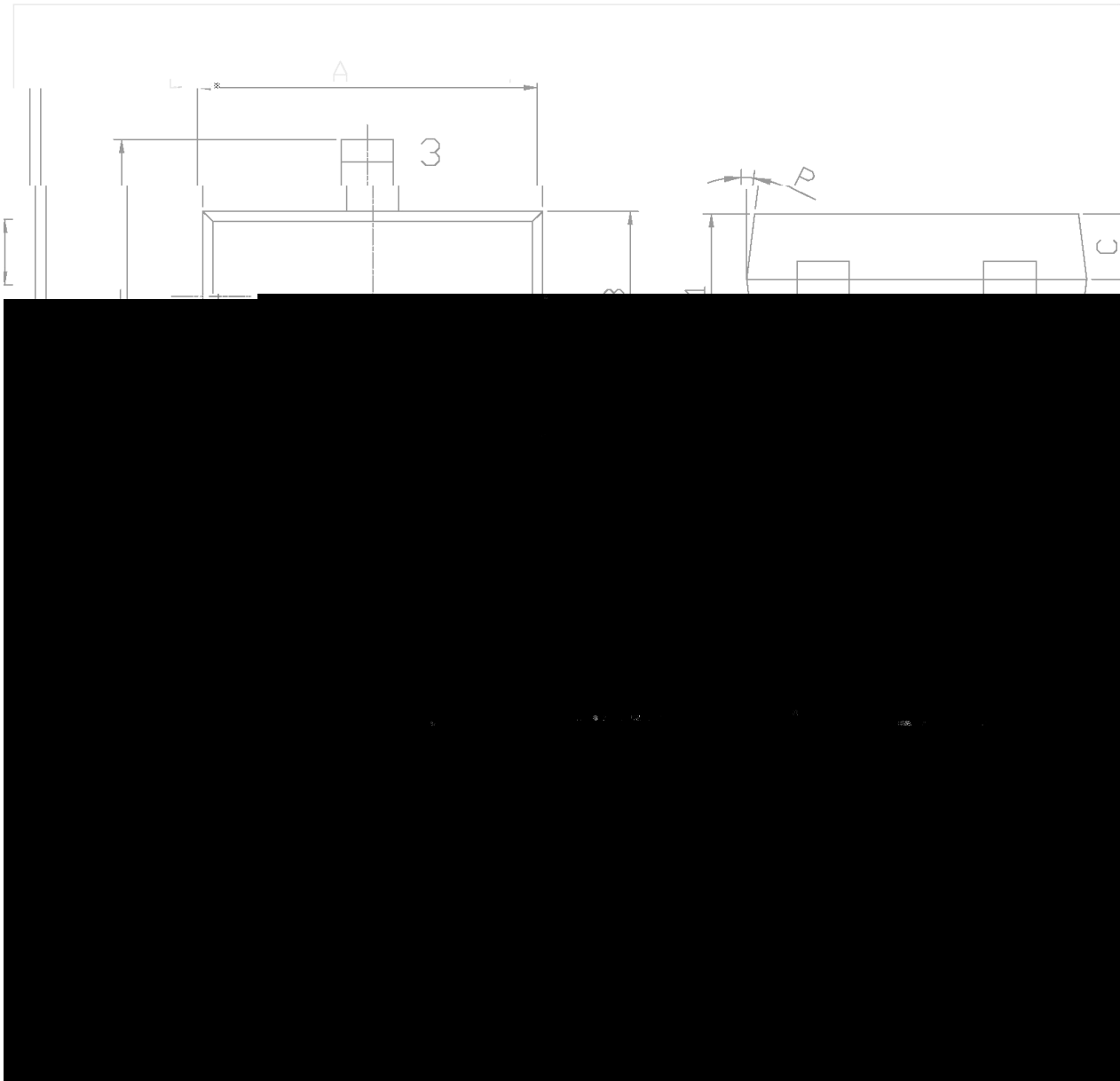
/ Electrical Characteristic Curve



/ Package Dimensions

CSOT-222

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/ Marking Instructions



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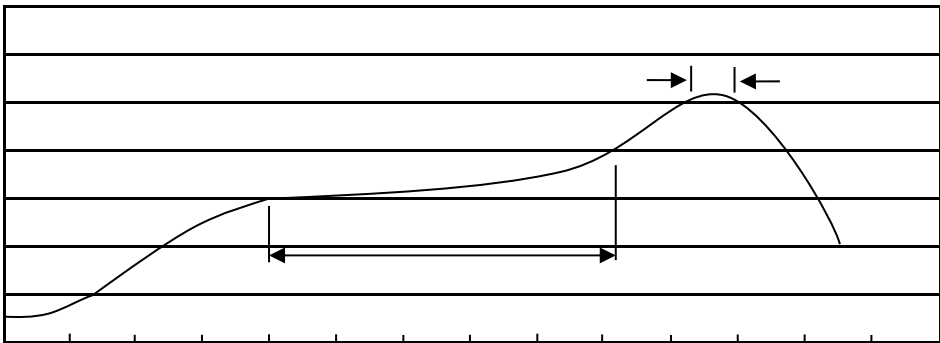
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Note:

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 ×8	180×120×180	390×385×205

/ Notices