

# BRDTC144EUAQ

Rev.A Apr.-2023

SOT-323

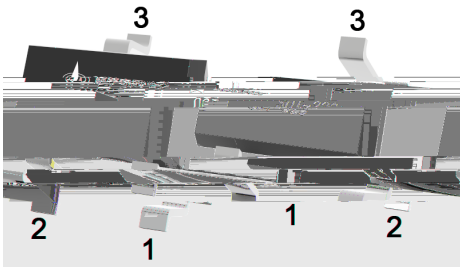
NPN

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

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

## / h

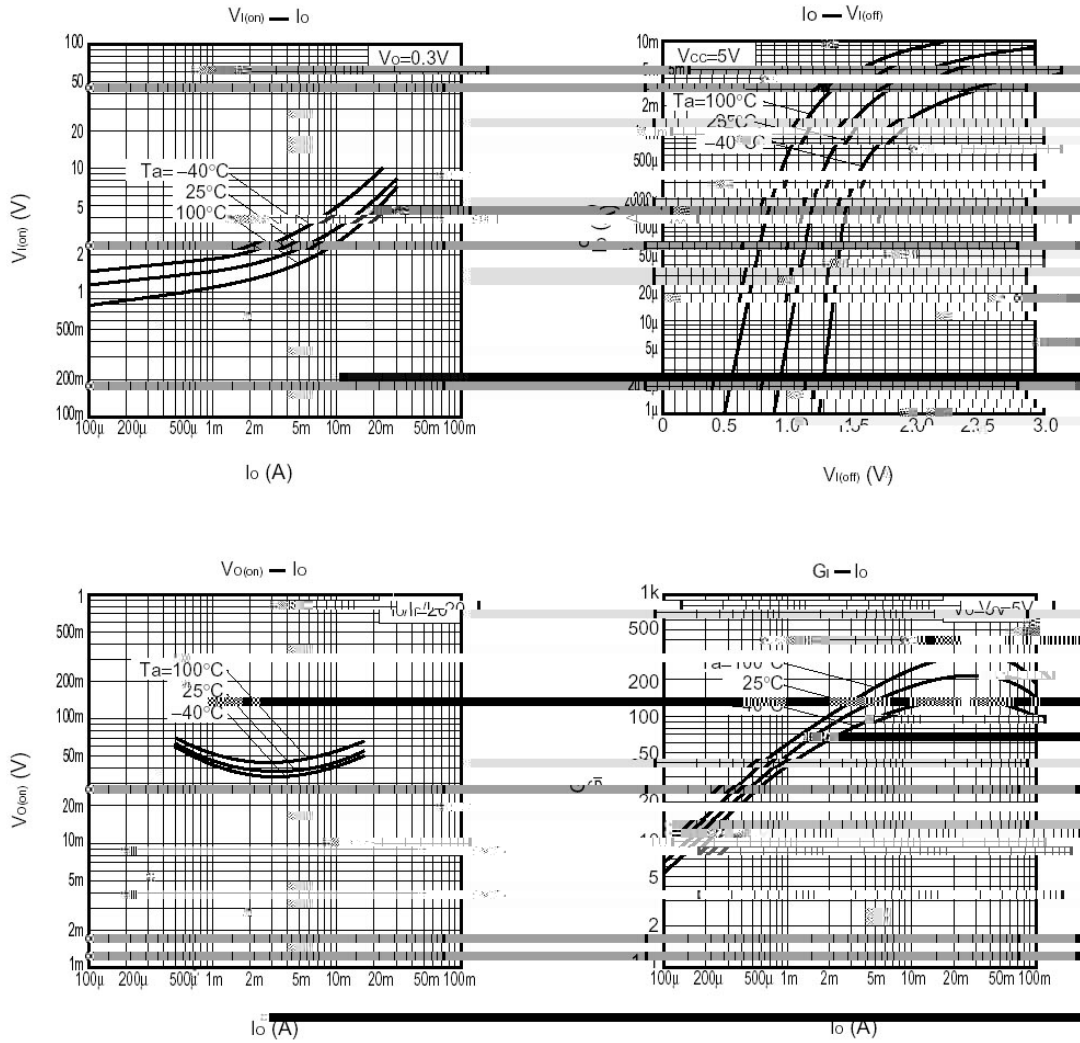
## / Absolute Maximum Ratings(Ta=25 )

Parameter	Symbol	Rating	Unit
Output Voltage	V <sub>CC</sub>	50	V
Input Voltage	V <sub>IN</sub>	40	V
		-10	V
Output Current	I <sub>C</sub>	100	mA
	I <sub>O</sub>	30	mA
Collector Power Dissipation	P <sub>C</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	
Storage Temperature Range	T <sub>stg</sub>	-55 150	

## / Electrical Characteristics(Ta=25 )

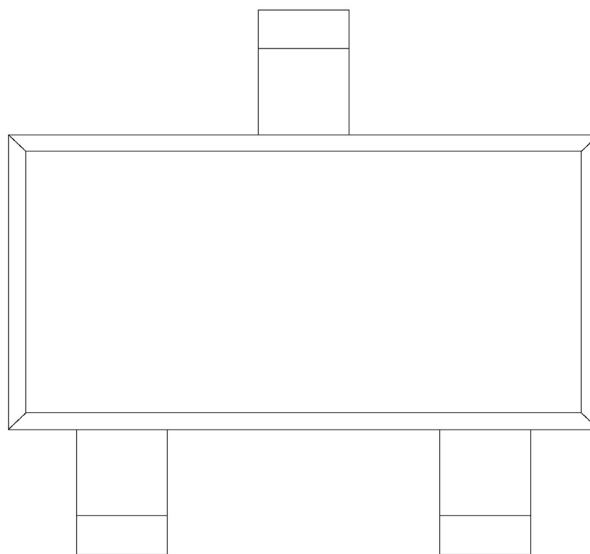
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage	V <sub>I(off)</sub>	V <sub>CC</sub> =5.0V I <sub>O</sub> =100μA			0.5	V
	V <sub>I(on)</sub>	V <sub>O</sub> =0.3V I <sub>O</sub> =2.0mA	3.0			V
Output Voltage	V <sub>O(on)</sub>	I <sub>O</sub> =10 mA I <sub>I</sub> =0.5mA			0.3	V
Input Current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

**/ Electrical Characteristic Curve**





/ Marking Instructions



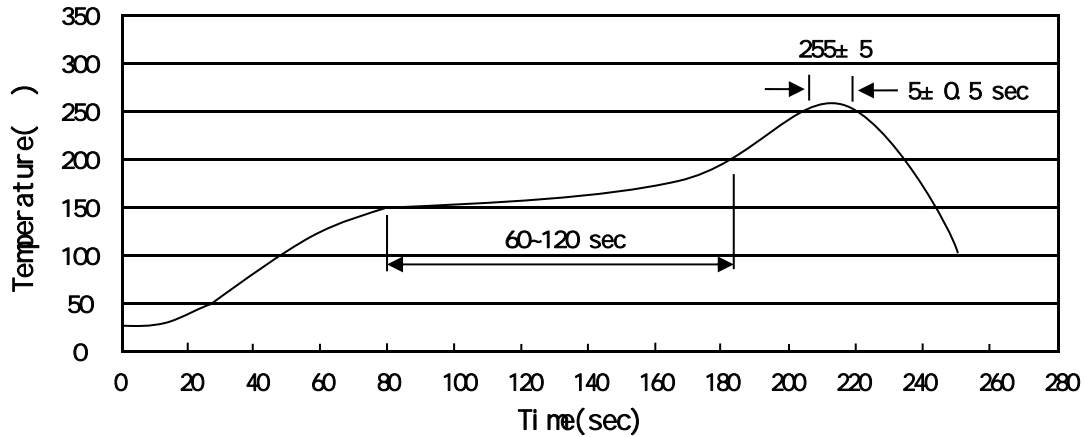
26

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 <sup>3</sup> )		
SOT-323	3,000	10	30,000	6	180,000	7 x8	180x120x180	390x385x205

/ Notices