

BRDTC114YKAQ

Rev.A Nov.-2024

描述 / Descriptions

SOT-23 塑封封装 硅 NPN 数字三极管。

Silicon NPN Digital transistor in a SOT-23 Plastic Package.

特征 / Features

内装偏置电阻，简化线路设计，减少元件和制造流程，符合 AEC-Q101 标准高可靠性要求，无卤产品。

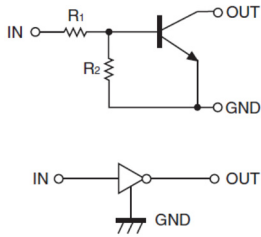
With built-in bias resistors, simplify circuit design, reduce a quantity of parts and manufacturing process, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途 / Applications

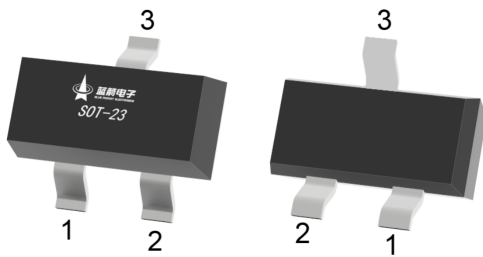
用于开关、反相电路、界面电路以及驱动电路中，满足汽车应用的严格要求。

Switching, inverter circuit, interface circuit and driver circuit applications, Meet the stringent requirements of automotive applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : IN PIN 2 : GND PIN 3 : OUT

放大及印章代码 / hFE Classifications & Marking

Marking	Q64
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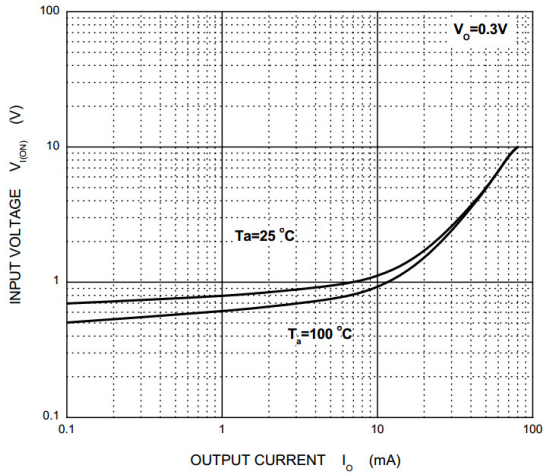
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-6~40	V
Output Current	I _O	70	mA
Peak Collector Current	I _{CM}	100	mA
Power Dissipation	P _D	200	mW
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55~150	°C

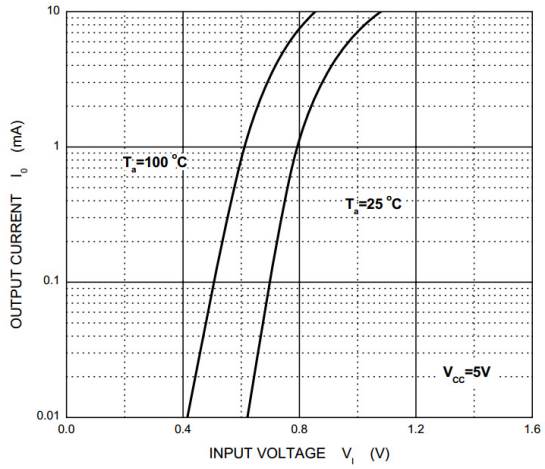
电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Input Voltage(OFF)	V _{I(off)}	V _{CC} =5.0V I _O =100μA	0.3			V
Input Voltage(ON)	V _{I(on)}	V _O =0.3V I _O =1mA			1.4	V
Output Voltage	V _{O(on)}	I _O =5mA I _I =0.25mA		0.1	0.3	V
Input Current	I _I	V _I =5.0V			0.88	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 _C =5.0mA f=100MHz		250		MHz
Resistance1	R ₁		7	10	13	KΩ
Resistance Ratio	R ₂ /R ₁		3.7	4.7	5.7	

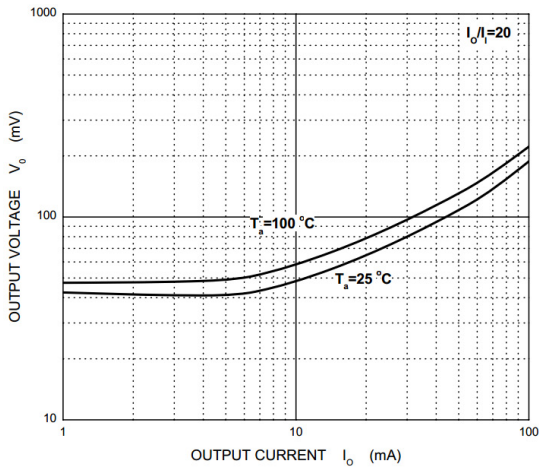
电参数曲线图 / Electrical Characteristic Curve



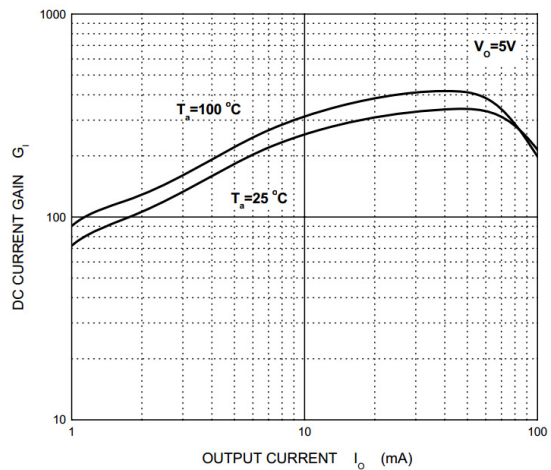
1. ON Characteristics



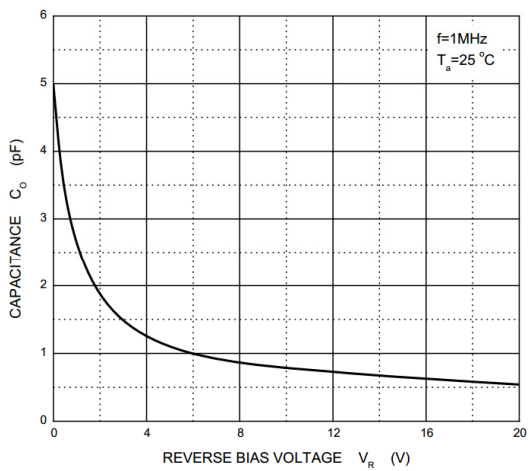
2. OFF Characteristics



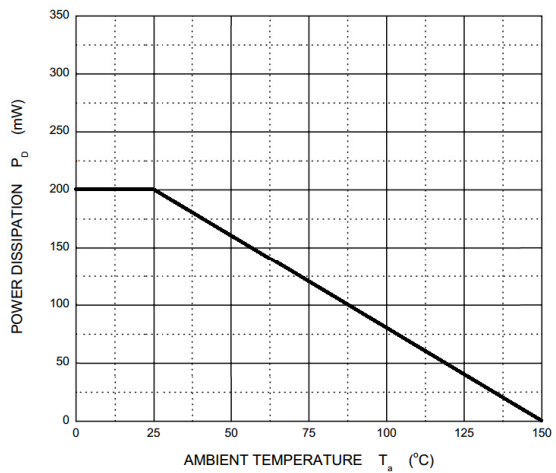
3. V_o — I_o



4. G_1 — I_o



5. C_o — V_R

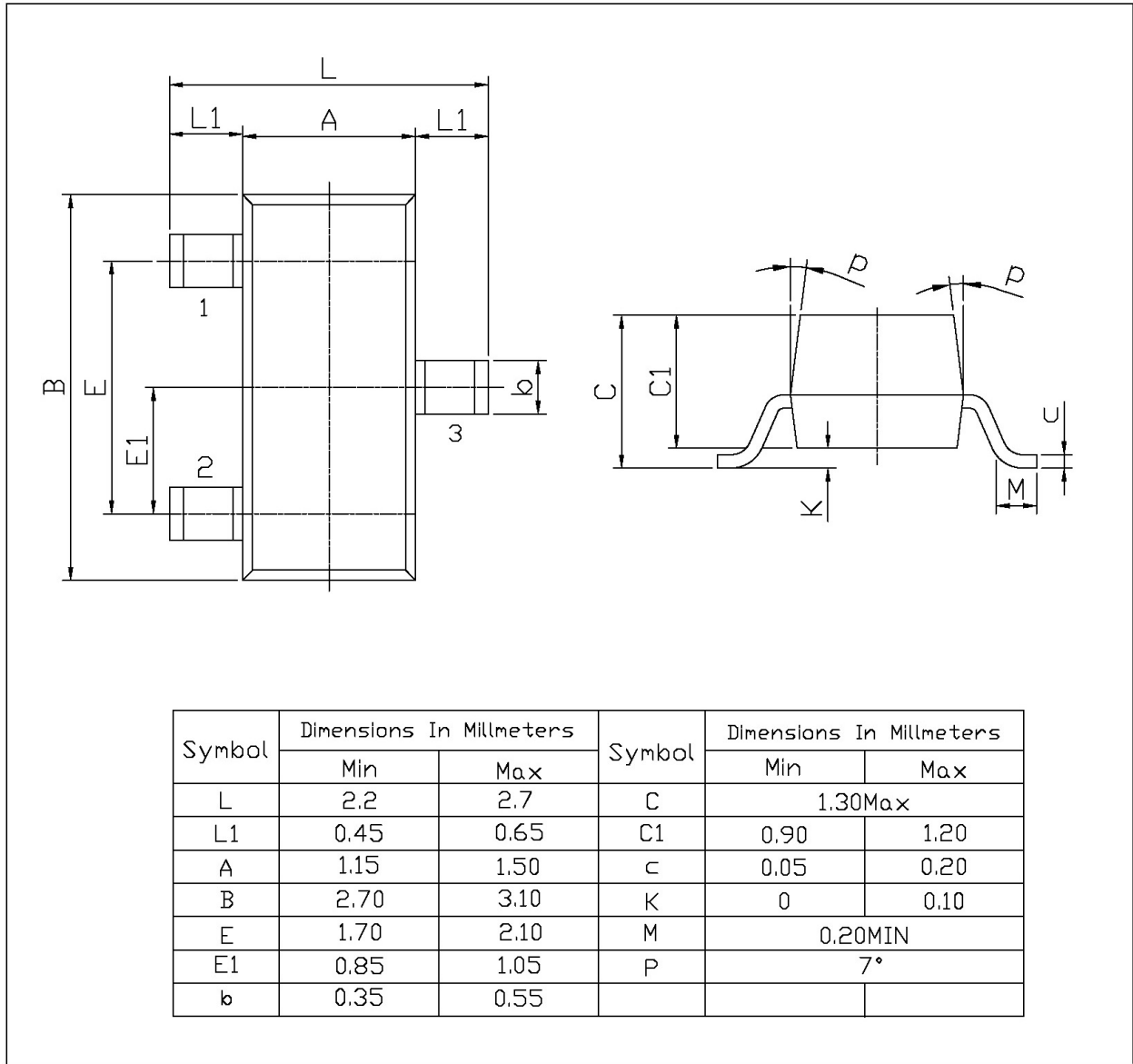


6. P_D — T_a

外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

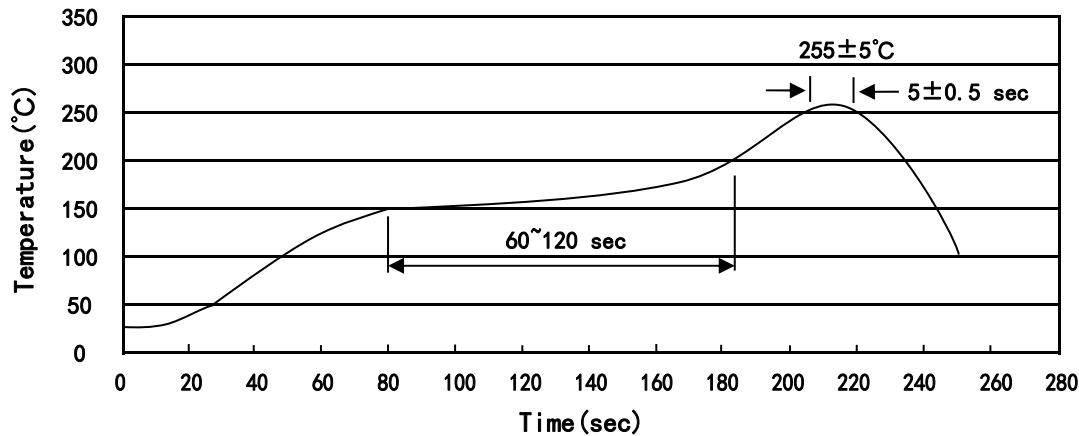
Q： 为汽车无卤产品标识

64： 为型号代码

Note:

Q: Automobile halogen-free product Code

64 : Product Type Code

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)


说明：

- 1、预热温度 150~200°C，时间 60~120sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:150~200°C, Time:60~120sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
- 3.Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

使用说明 / Notices