

# DTC114YKA

Rev.G 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，无卤产品。

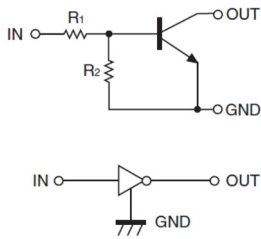
With built-in bias resistors, simplify circuit design, reduce a quantity of parts and manufacturing process, HF Product.

## 用途 / Applications

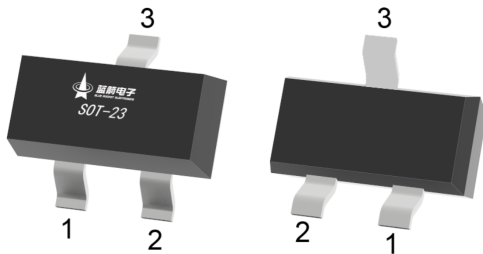
用于开关、反相电路、界面电路以及驱动电路中。

Switching, inverter circuit, interface circuit and driver circuit 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	H64
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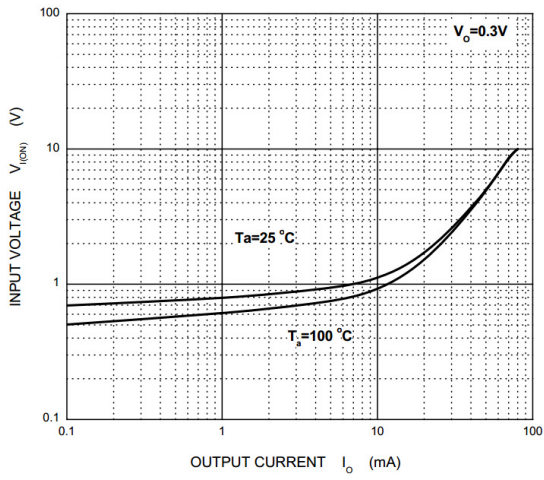
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Supply Voltage	V <sub>CC</sub>	50	V
Input Voltage	V <sub>IN</sub>	-6~40	V
Output Current	I <sub>O</sub>	70	mA
Peak Collector Current	I <sub>CM</sub>	100	mA
Power Dissipation	P <sub>D</sub>	200	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

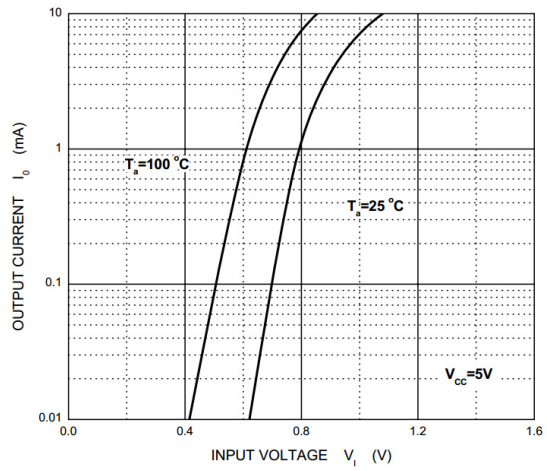
**电性能参数 / Electrical Characteristics(Ta=25°C)**

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 <sub>I(off)</sub>	V <sub>CC</sub> =5.0V I <sub>O</sub> =100μA	0.3			V
Input Voltage(ON)	V <sub>I(on)</sub>	V <sub>O</sub> =0.3V I <sub>O</sub> =1mA			1.4	V
Output Voltage	V <sub>O(on)</sub>	I <sub>O</sub> =5mA I <sub>I</sub> =0.25mA		0.1	0.3	V
Input Current	I <sub>I</sub>	V <sub>I</sub> =5.0V			0.88	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>C</sub> =5.0mA f=100MHz		250		MHz
Resistance1	R <sub>1</sub>		7	10	13	KΩ
Resistance Ratio	R <sub>2</sub> /R <sub>1</sub>		3.7	4.7	5.7	

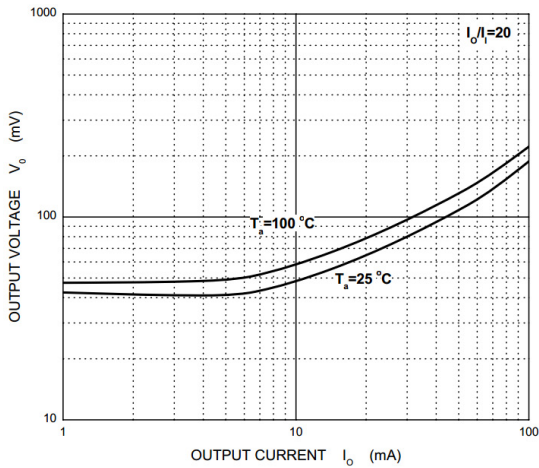
电参数曲线图 / Electrical Characteristic Curve



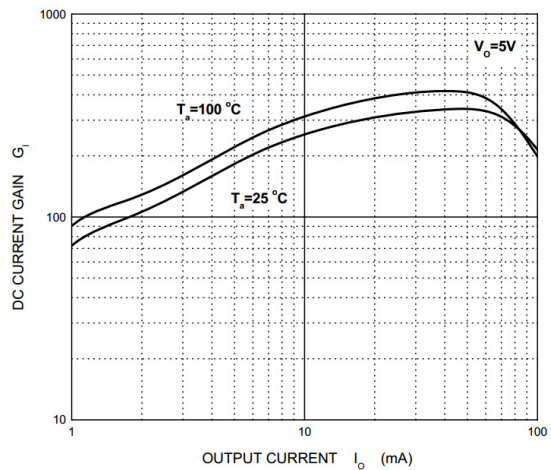
1. ON Characteristics



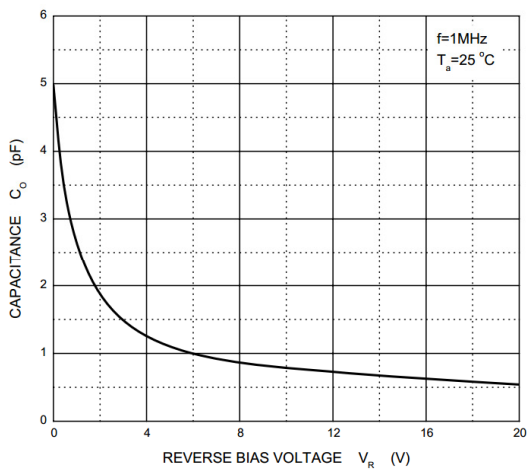
2. OFF Characteristics



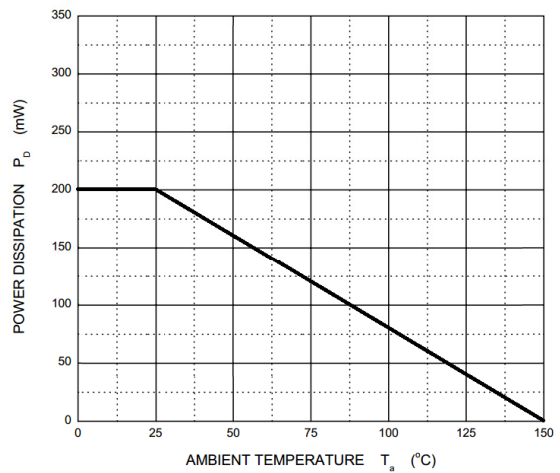
3.  $V_o$  —  $I_o$



4.  $G_1$  —  $I_o$



5.  $C_o$  —  $V_R$

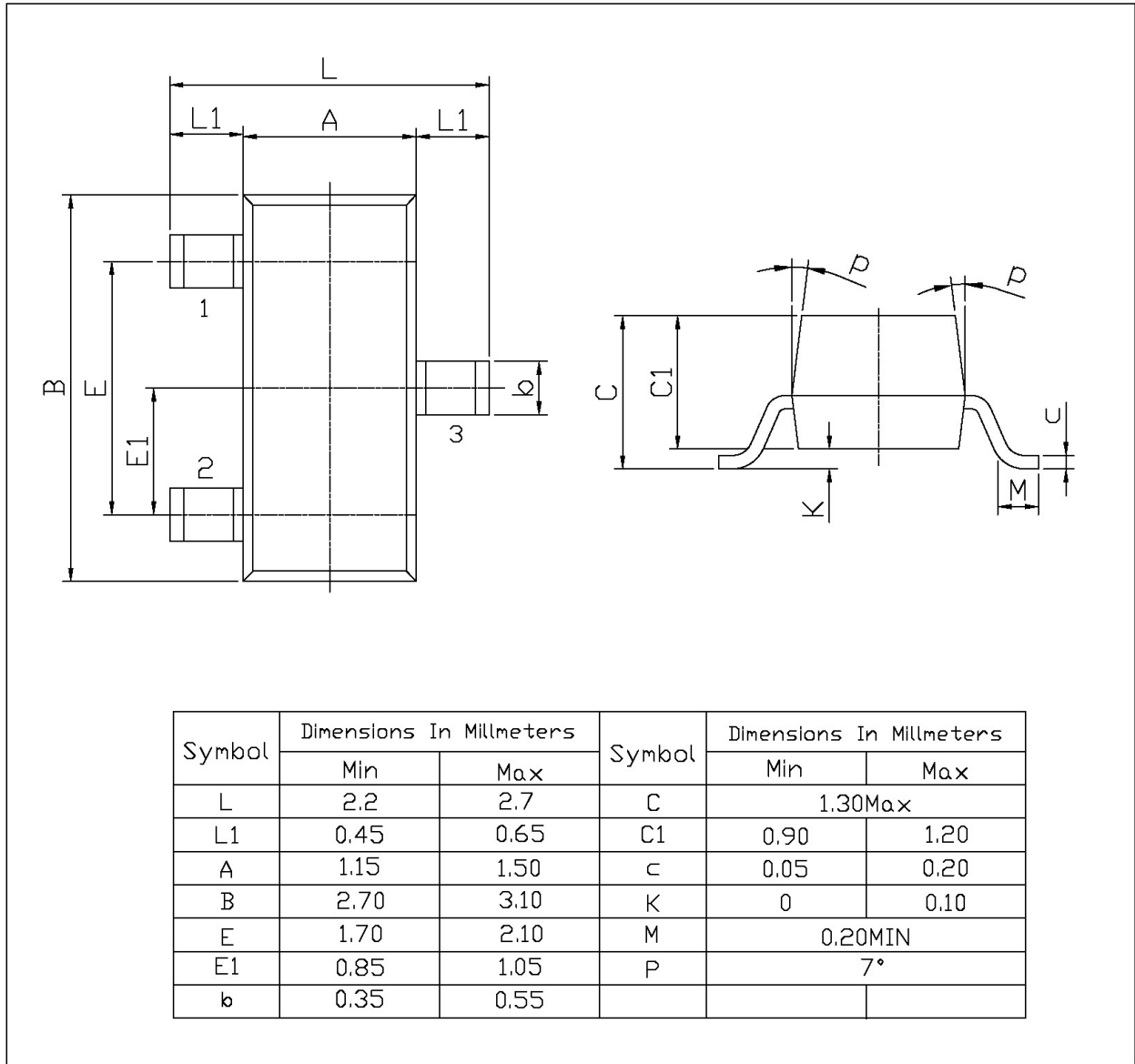


6.  $P_D$  —  $T_a$

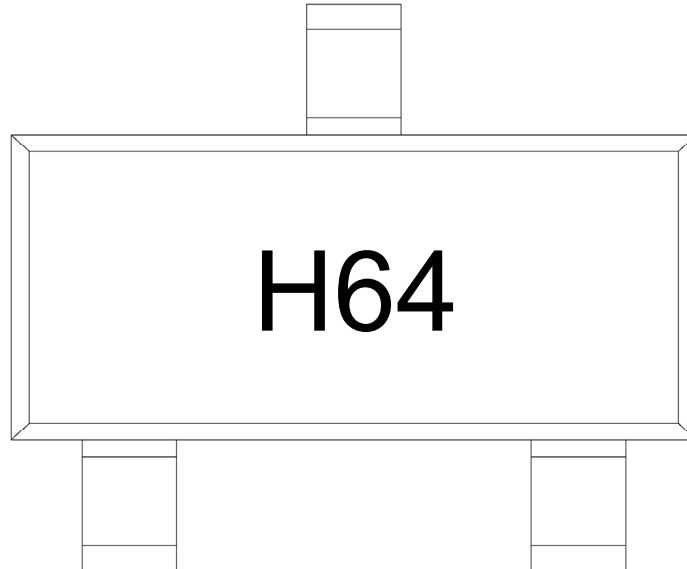
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

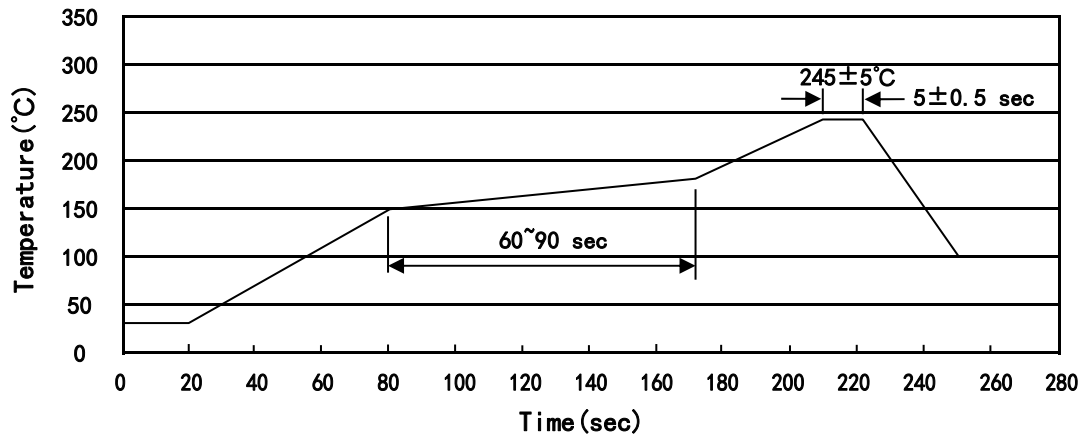
64： 为型号代码

Note:

H： Company 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 150~180°C，时间 60~90sec;
- 2、峰值温度 245±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:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±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 <sup>3</sup> )		
	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