

# 2SD669TA

Rev.E Mar.-2016

## 描述 / Descriptions

SOT-89 塑封封装 NPN 半导体三极管。Silicon NPN transistor in a SOT-89 Plastic Package.

## 特征 / Features

与 2SB649TA 互补。

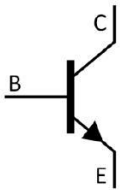
Complementary pair with 2SB649TA.

## 用途 / Applications

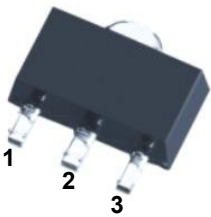
用于低频功率放大。

Low frequency power amplifier.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN1 : Base

PIN 2 : Collector

PIN 3 : Emitter

## 印章代码 / Marking

$h_{FE}$ Classifications Symbol	B	C	D
$h_{FE}$ Range	60~120	100~200	160~320
Marking	H669B*	H669C*	H669D*

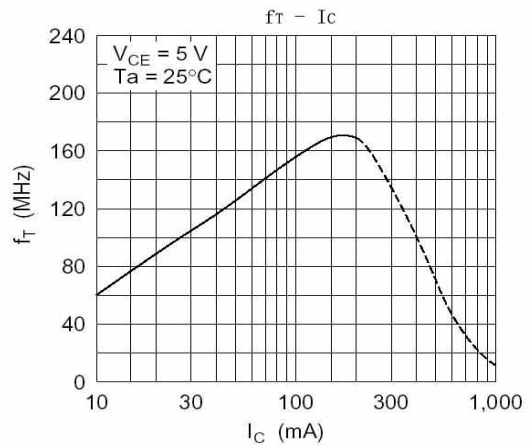
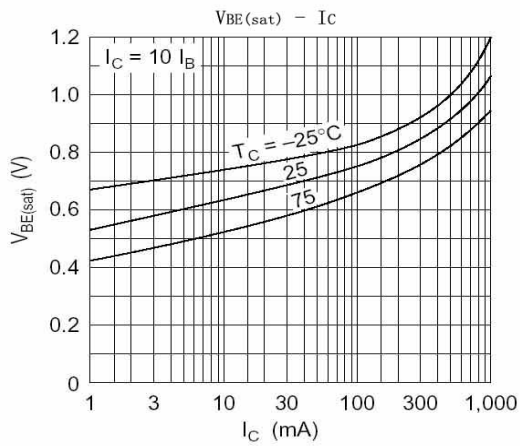
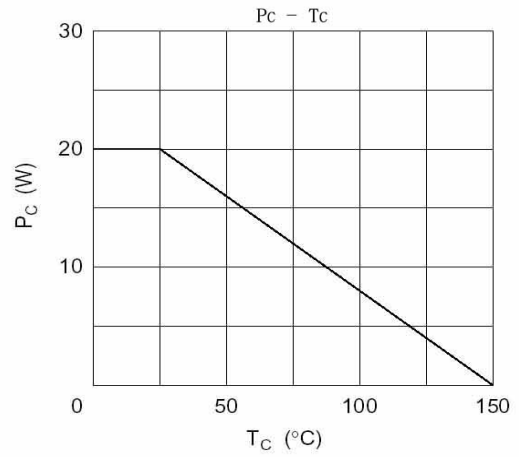
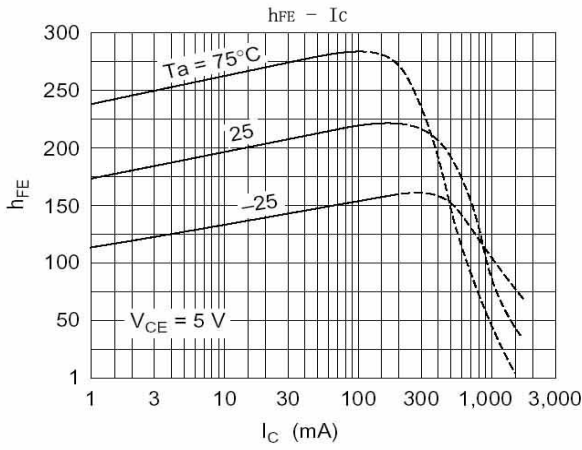
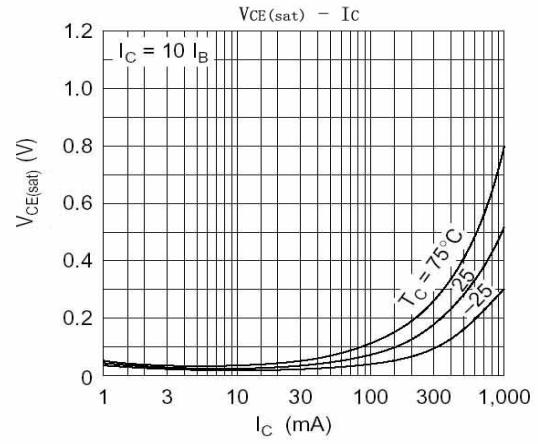
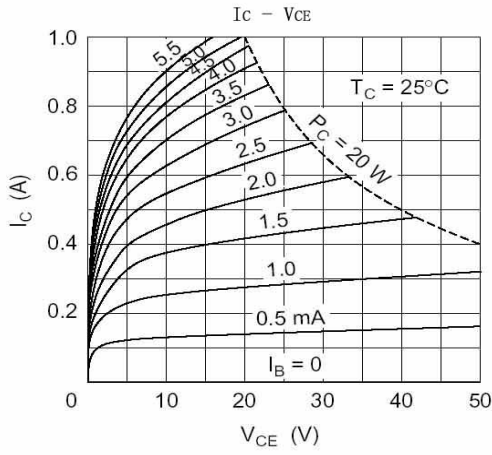
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	$V_{CBO}$	180	V
Collector to Emitter Voltage	$V_{CEO}$	160	V
Emitter to Base Voltage	$V_{EBO}$	5.0	V
Collector Current-Continuous	$I_C$	1.5	A
Collector Current-Continuous (Pluse)	$I_{CP}$	3.0	A
Collector Power Dissipation	$P_C$	500	mW
Collector Power Dissipation	$P_C(T_c=25^\circ\text{C})$	20	W
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
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=1.0\text{mA}$ $I_E=0$	180			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=10\text{mA}$ $R_{BE}=\infty$	160			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=1.0\text{mA}$ $I_C=0$	5.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=160\text{V}$ $I_E=0$			10	$\mu\text{A}$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0\text{V}$ $I_C=150\text{mA}$	60		320	
	$h_{FE(2)}$	$V_{CE}=5.0\text{V}$ $I_C=500\text{mA}$	30			
Base to Emitter Voltage	$V_{BE}$	$V_{CE}=5.0\text{V}$ $I_C=150\text{mA}$			1.5	V
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}$ $I_B=50\text{mA}$			1.0	V
Transition Frequency	$f_T$	$V_{CE}=5.0\text{V}$ $I_C=150\text{mA}$		140		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ $f=1.0\text{MHz}$ $I_E=0$		14		pF

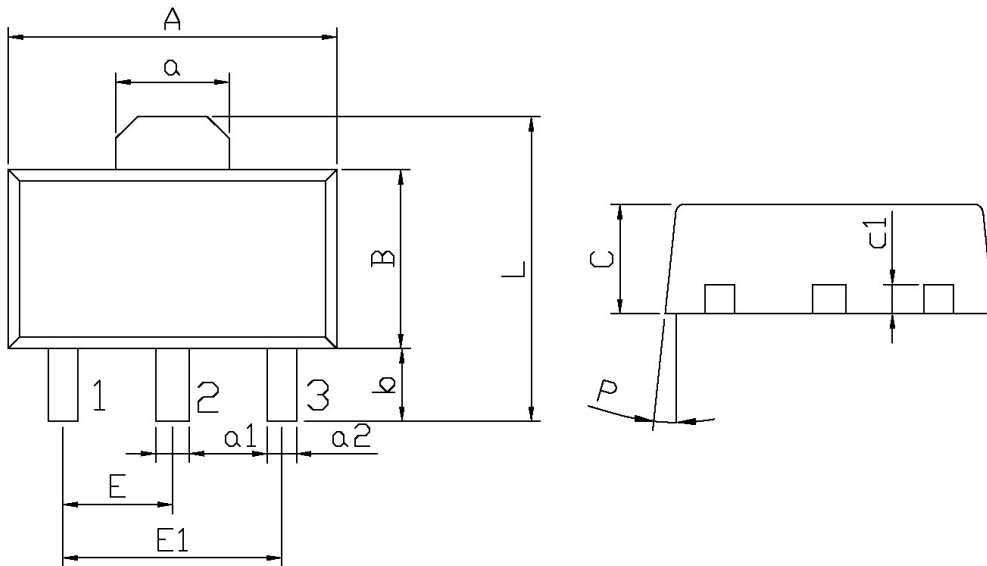
**电参数曲线图 / Electrical Characteristic Curve**



外形尺寸图 / Package Dimensions

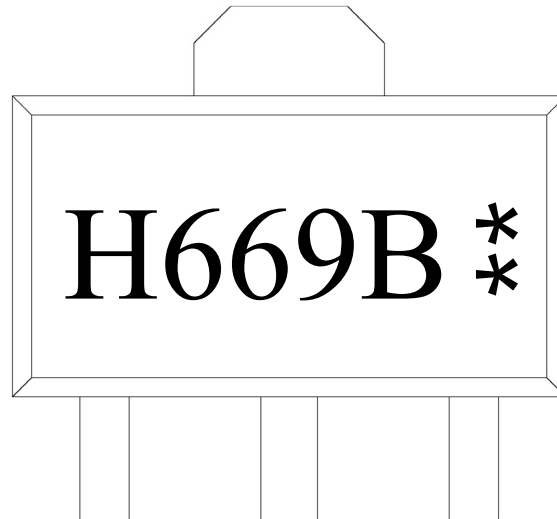
SOT-89

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.4	4.7	a1	0.36	0.56
B	2.35	2.65	a2	0.30	0.50
L	3.878	4.478	C	1.40	1.70
a	1.45	1.65	c1	0.35	0.50
E	1.40	1.60	P	6°	
E1	2.80	3.20			
b	0.80	1.20			

印章说明 / Marking Instructions



说明：

H： 为公司代码

669： 为型号代码

B： 为  $h_{FE}$  分档代码

\*\*： 为生产批号代码，随生产批号变化。

Note:

H: Company Code.

669: Product Type.

B:  $h_{FE}$  Classifications Symbol

\*\* : Lot No. Code, code change with Lot No.

**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 25~150°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:25~150°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-89	1,000	7	7,000	8	56,000	7" ×12	180×120×180	385×257×392

**使用说明 / Notices**