

BR2SD667(A)TQ

Rev.A Apr.-2023

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 BR2SB647(A)TQ 互补，符合 AEC-Q101 标准高可靠性要求，无卤产品。

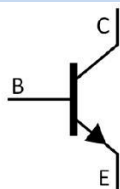
Complementary pair with BR2SB647(A)TQ, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途 / Applications

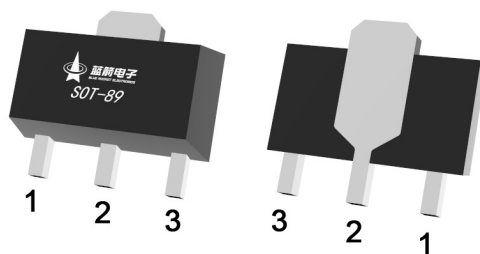
用于低频功率放大，满足汽车应用的严格要求。

Low frequency power amplifier, Meet the stringent requirements of automotive applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : Base

PIN 2 : Collector

PIN 3 : Emitter

放大及印章代码 / h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	B	C	D
h_{FE} Range	60~120	100~200	160~320
Marking	Q67B * *	Q67C * *	Q67D * *

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

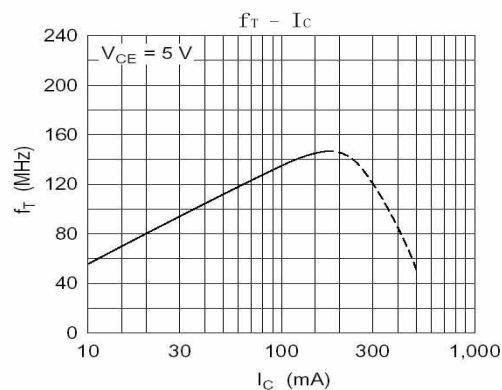
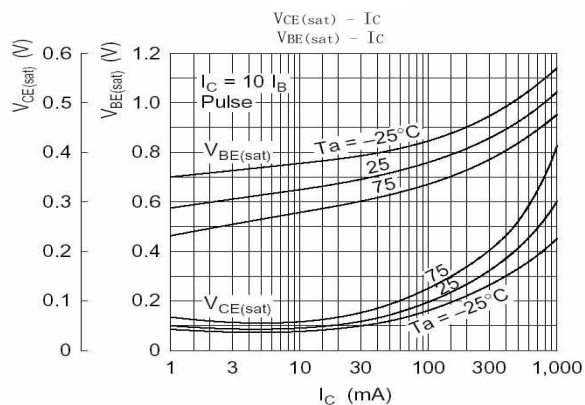
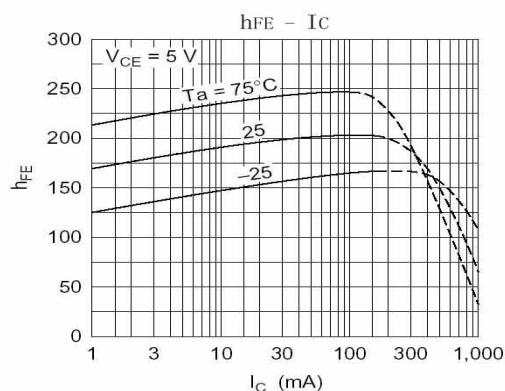
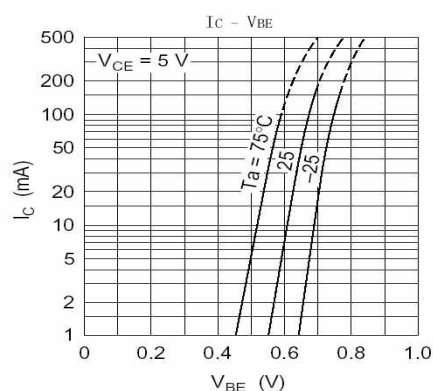
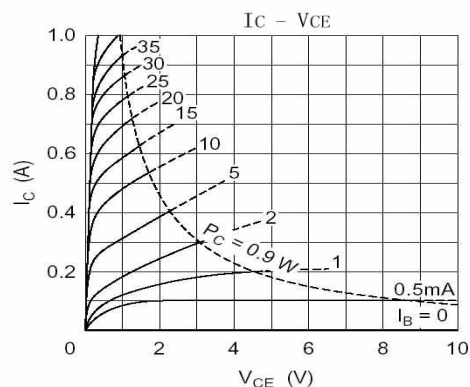
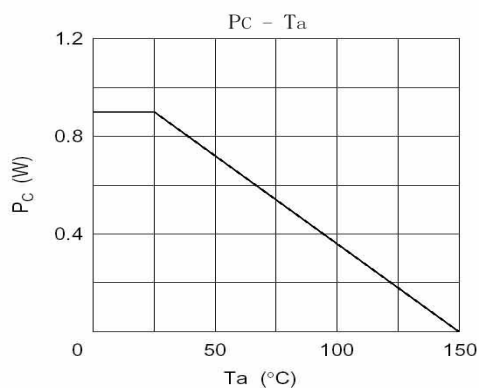
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	120	V
Collector to Emitter Voltage	V_{CEO}	BR2SD667TQ 80	V
		BR2SD667ATQ 100	
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current (DC)	I_C	1.0	A
Collector Current (Pulse)	I_{CP}	2.0	A
Collector Power Dissipation	P_C	500	mW
Collector Power Dissipation*	* P_C	1.0	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

*:mounted on ceramic substrate(250mm²×0.8t).*装于 250mm²×0.8t 的陶瓷上。

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}	$I_C=10\mu A$ $I_E=0$	120			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $I_B=0$	80			V
			100			
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\mu A$ $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=100V$ $I_E=0$			10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0V$ $I_C=150mA$	60		320	
	$h_{FE(2)}$	$V_{CE}=5.0V$ $I_C=500mA$	30			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA$ $I_B=50mA$			1.0	V
Base to Emitter Saturation Voltage	V_{BE}	$V_{CE}=5.0V$ $I_C=150mA$			1.5	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=150mA$		140		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		12		pF

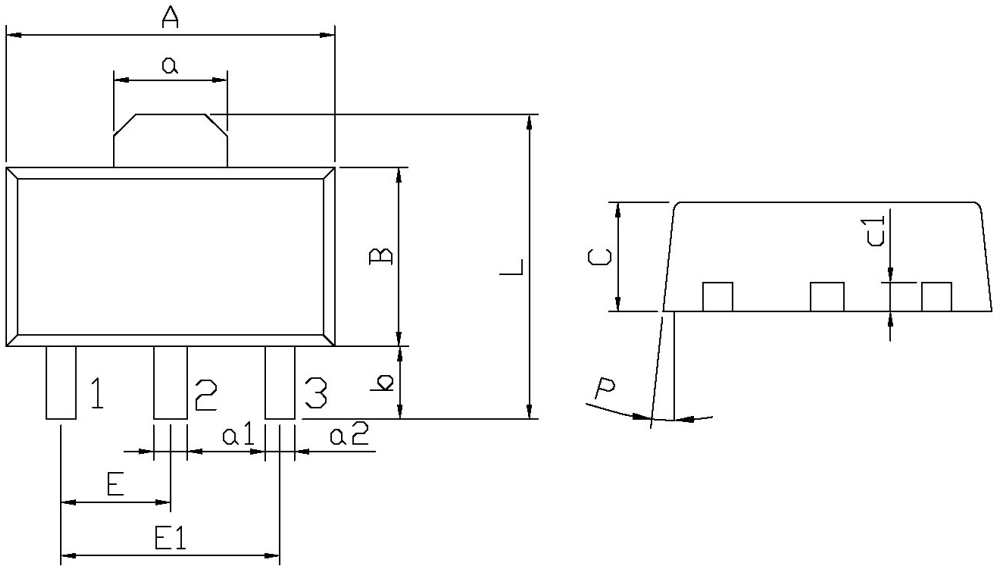
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

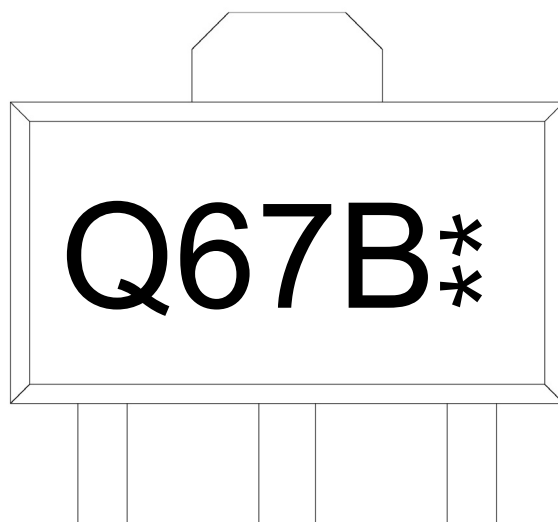
SOT-89

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



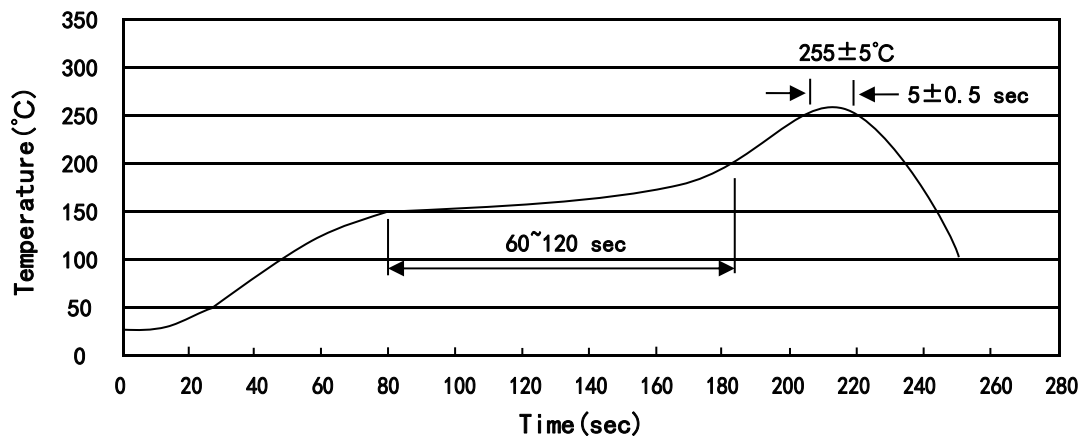
说明：

Q：为汽车无卤产品标识
67：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:

Q: Automobile halogen-free product Code
67: Product Type
B: h_{FE} Classifications Symbol
**: Lot No. Code, code change with Lot No

波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)



- 说明 :
- 1、预热温度 150 ~ 200℃ , 时间 60 ~ 120sec;
- 2、峰值温度 255±5℃ , 时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10℃/sec.
- Note:
- 1.Preheating:150~200℃, Time:60~120sec.
- 2.Peak Temp.:255±5℃, Duration:5±0.5sec.
3. Cooling Speed: 2~10℃/sec.

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

温度 : 260±5℃ 时间 : 10±1 sec. Temp.:260±5℃ 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: mm³)		
	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	6	42,000	7" ×12	180×120×180	390×385×205

使用说明 / Notices