

## 描述 / Descriptions

SOT-363 塑封封装 PNP+NPN 半导体三极管。

Silicon PNP and NPN transistor in a SOT-363 Plastic Package.

## 特征 / Features

低电流，低电压，小封装，符合 AEC-Q101 标准高可靠性要求，无卤产品。

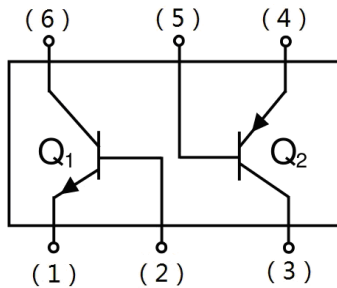
Low current ,Low voltage ,S-mini package, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

## 用途 / Applications

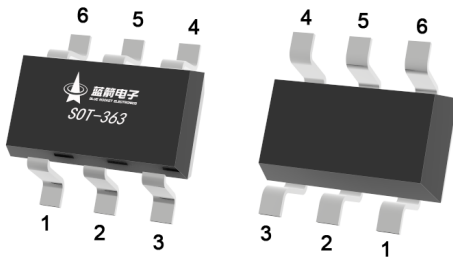
用于普通放大及开关，满足汽车应用的严格要求。

General purpose amplifier and switching, Meet the stringent requirements of automotive applications.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN 1、4 : Emitter

PIN 2、5 : Base

PIN 3、6 : Collector

## 放大及印章代码 / hFE Classifications & Marking

See Marking Instructions.

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

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V <sub>CB0</sub>	80	V
Collector to Emitter Voltage	V <sub>CE0</sub>	65	V
Emitter to Base Voltage	V <sub>EB0</sub>	6.0	V
Collector Current - Continuous	I <sub>c</sub>	100	mA
Collector Power Dissipation	P <sub>C</sub>	350	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ 150	°C

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

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V <sub>CB0</sub>	-80	V
Collector to Emitter Voltage	V <sub>CE0</sub>	-65	V
Emitter to Base Voltage	V <sub>EB0</sub>	-5.0	V
Collector Current - Continuous	I <sub>c</sub>	-100	mA
Collector Power Dissipation	P <sub>C</sub>	350	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ 150	°C

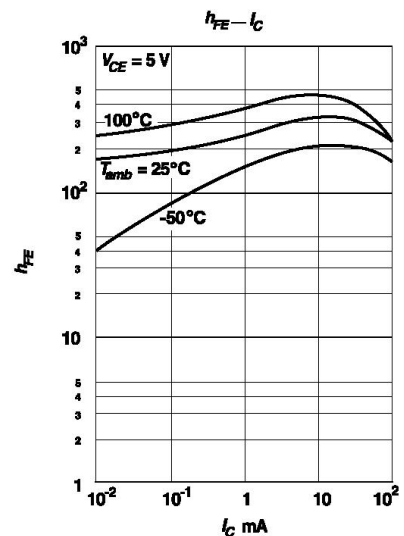
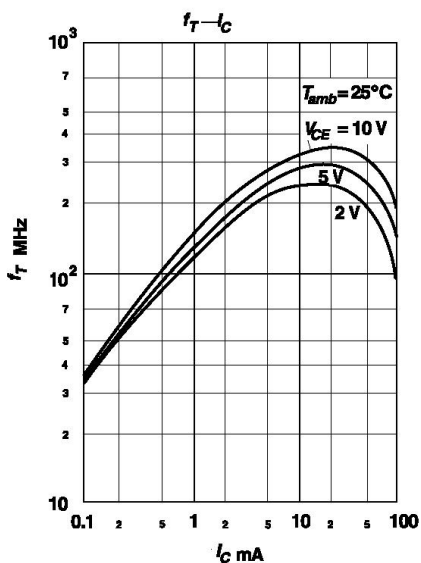
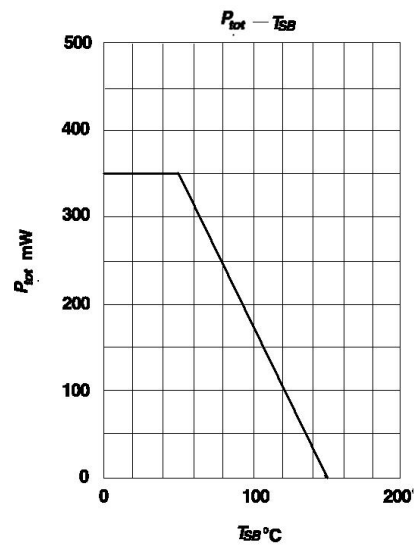
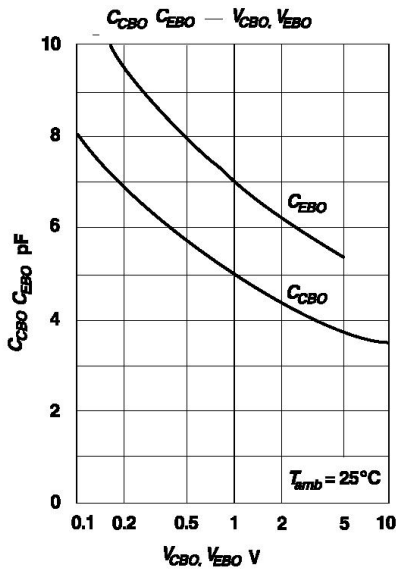
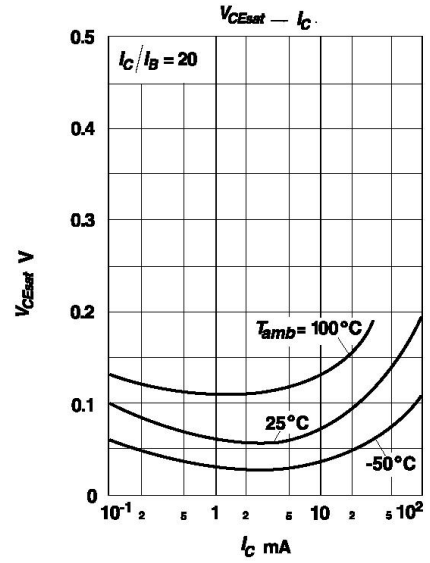
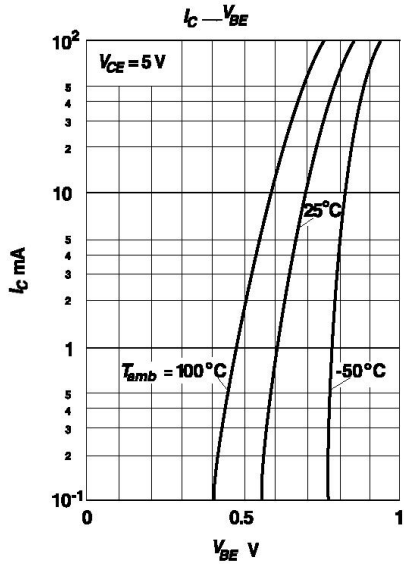
## 电性能参数 / Electrical Characteristics(Ta=25°C) (NPN)

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 Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =50V I <sub>E</sub> =0			15	nA
		V <sub>CB</sub> =30V I <sub>E</sub> =0 T <sub>J</sub> =150°C			5	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =6.0V I <sub>C</sub> =0			100	nA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =5.0V I <sub>C</sub> =2.0mA	200	300	450	
		V <sub>CE</sub> =5.0V I <sub>C</sub> =10μA		280		
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA I <sub>B</sub> =0.5mA		55	100	mV
		I <sub>C</sub> =100mA I <sub>B</sub> =5.0mA		200	300	mV
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10mA I <sub>B</sub> =0.5mA		755	850	mV
		I <sub>C</sub> =100mA I <sub>B</sub> =5.0mA		1000		mV
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =5.0V I <sub>C</sub> =2.0mA	580	650	700	mV
		V <sub>CE</sub> =5.0V I <sub>C</sub> =10mA			770	mV
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =5.0V I <sub>C</sub> =10mA f=100MHz	100			MHz
Collector Capacitance	C <sub>c</sub>	V <sub>CB</sub> =10V f=1.0MHz I <sub>E</sub> =I <sub>E</sub> =0A		1.9		pF
Emitter Capacitance	C <sub>e</sub>	V <sub>EB</sub> =0.5V f=1.0MHz I <sub>E</sub> =I <sub>E</sub> =0A		11		pF
Noise figure	NF	V <sub>CE</sub> =5.0V I <sub>C</sub> =0.2mA R <sub>S</sub> =2kΩ f=10Hzto15.7kHz		1.9		dB
		V <sub>CE</sub> =5.0V I <sub>C</sub> =0.2mA R <sub>S</sub> =2kΩ f=1.0kHz B=200Hz		3.1		dB

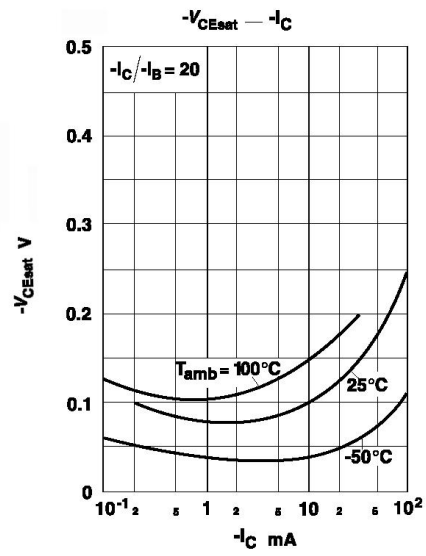
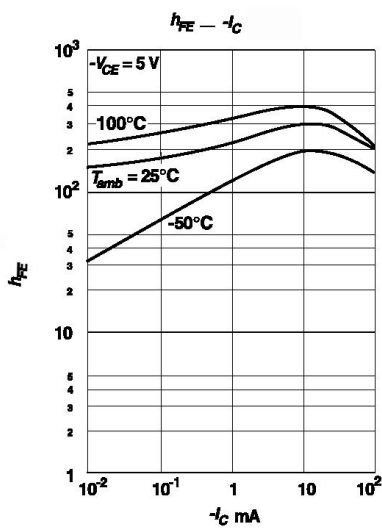
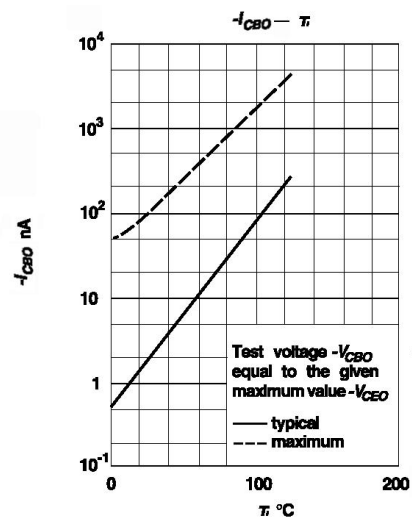
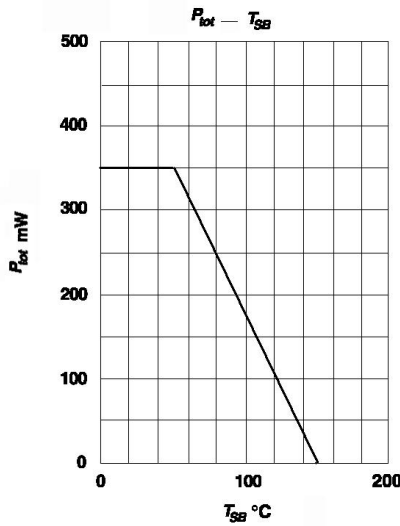
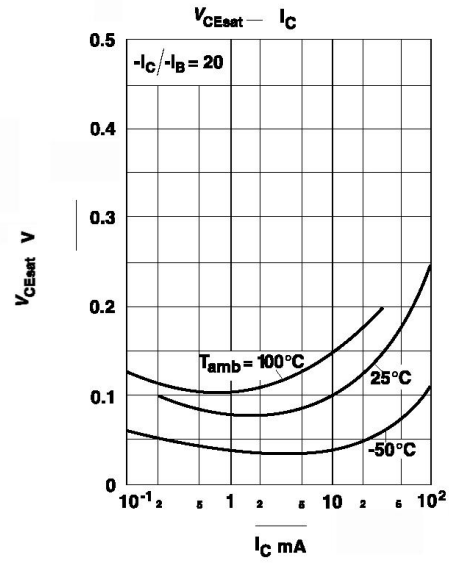
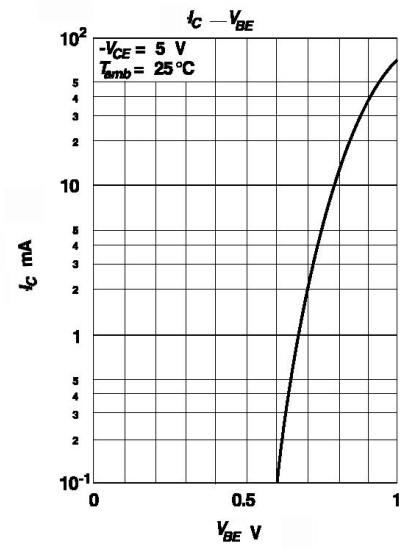
## 电性能参数 / Electrical Characteristics(Ta=25°C) (PNP)

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 Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V I <sub>E</sub> =0			-15	nA
		V <sub>CB</sub> =-30V I <sub>E</sub> =0 T <sub>J</sub> =150°C			-5.0	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-6.0V I <sub>C</sub> =0			-100	nA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-5.0V I <sub>C</sub> =-2.0mA	200	290	450	
		V <sub>CE</sub> =-5.0V I <sub>C</sub> =-10μA		270		
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-10mA I <sub>B</sub> =-0.5mA		-55	-100	mV
		I <sub>C</sub> =-100mA I <sub>B</sub> =-5.0mA		-200	-300	mV
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-10mA I <sub>B</sub> =-0.5mA		-755	-850	mV
		I <sub>C</sub> =-100mA I <sub>B</sub> =-5.0mA		-900		mV
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =-5.0V I <sub>C</sub> =-2.0mA	-600	-650	-750	mV
		V <sub>CE</sub> =-5.0V I <sub>C</sub> =-10mA			-820	mV
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-5.0V I <sub>C</sub> =-10mA f=100MHz	100			MHz
Collector Capacitance	C <sub>c</sub>	V <sub>CB</sub> =-10V f=1.0MHz I <sub>E</sub> =I <sub>e</sub> =0A		2.3		pF
Emitter Capacitance	C <sub>e</sub>	V <sub>EB</sub> =-0.5V f=1.0MHz I <sub>E</sub> =I <sub>e</sub> =0A		10		pF
Noise figure	NF	V <sub>CE</sub> =-5.0V I <sub>C</sub> =-0.2mA R <sub>S</sub> =2kΩ f=10Hzto15.7kHz		1.6		dB
		V <sub>CE</sub> =-5.0V I <sub>C</sub> =-0.2mA R <sub>S</sub> =2kΩ f=1.0kHz B=200Hz		2.9		dB

电参数曲线图 / Electrical Characteristic Curve (NPN)

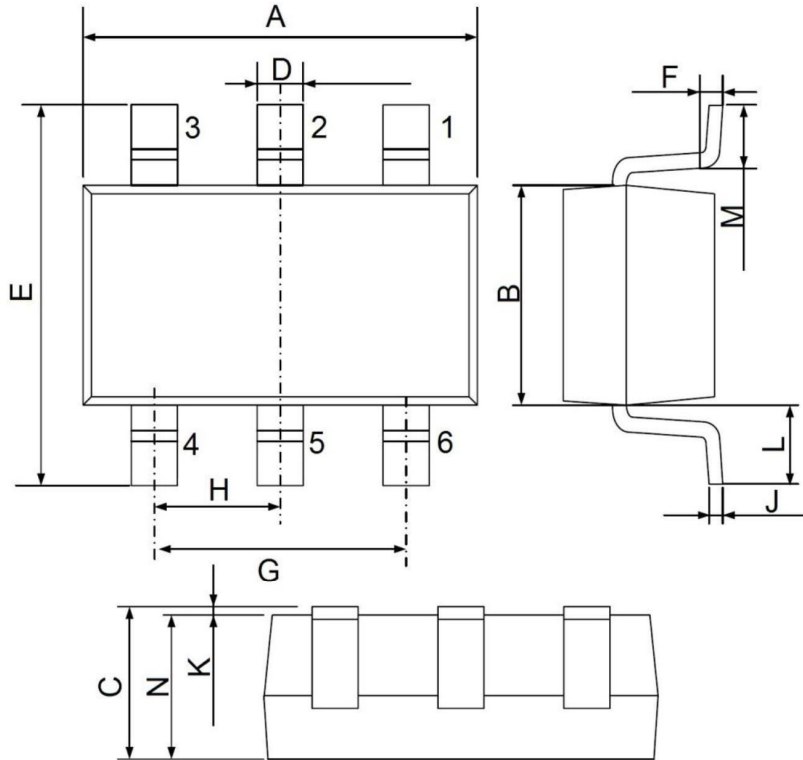


电参数曲线图 / Electrical Characteristic Curve (PNP)



外形尺寸图 / Package Dimensions

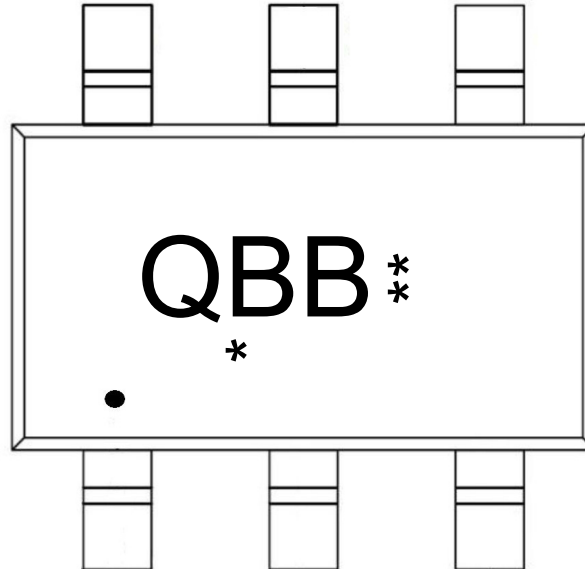
**SOT-363-6L**



UNIT: mm

DIM	MIN	MAX
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	1.95	2.25
F	0.20 Typ.	
G	1.20	1.40
H	0.65 Typ.	
J	0.08	0.15
K	0.00	0.10
L	0.525 Ref.	
M	0.26	0.46
N	0.90	1.10

印章说明 / Marking Instructions



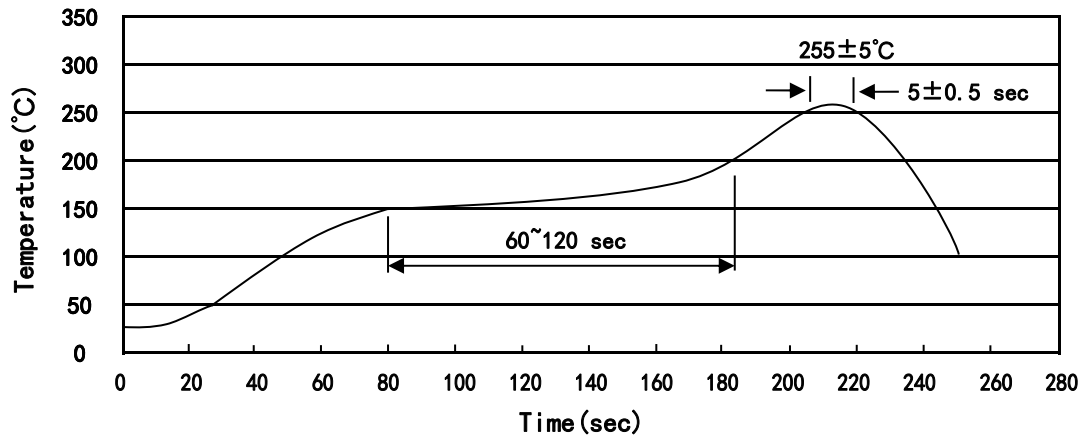
说明：

- ： 为“1”脚
- Q： 为汽车无卤产品标识
- BB： 为型号代码
- \*\*\*： 为生产批号代码，随生产批号变化

Note:

- ： “1” Pin
- Q: Automobile halogen-free product Code
- BB： Product Type Code
- \*\*\*: 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 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 <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-363	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**