描述 / Descriptions

SOT-363 塑封封装 NPN+PNP 半导体三极管。
Silicon NPN and PNP transistor in a SOT-363 Plastic Package.

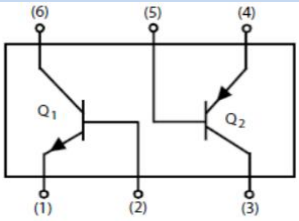
特征 / Features

高 h_{FE}，低 $V_{CE(sat)}$，无卤产品。
High DC Current Gain, Low Collector to Emitter Saturation Voltage, HF Product.

用途 / Applications

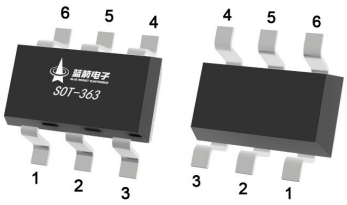
用于普通放大及开关。
General purpose amplifier and switching.

内部等效电路 / Equivalent Circuit



Q1: NPN Q2: PNP

引脚排列 / Pinning



PIN 1、4：Emitter PIN 2、5：Base PIN 3、6：Collector

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

See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25℃) (Q1:NPN)

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}	6.0	V
Collector Current	I_C	200	mA
Power Dissipation	P_D	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction and Storage Temperature	T_j, T_{stg}	-55～+150	℃

极限参数 / Absolute Maximum Ratings(Ta=25℃) (Q2:PNP)

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}	-6.0	V
Collector Current	I_C	-200	mA
Power Dissipation	P_D	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction and Storage Temperature	T_j, T_{stg}	-55～+150	℃

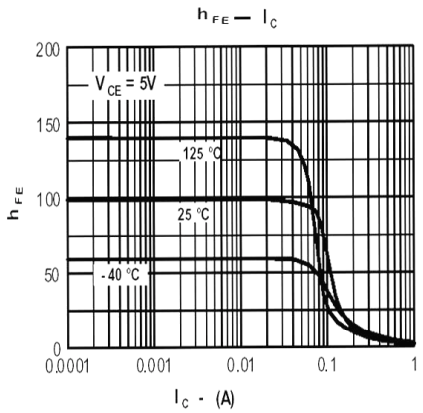
电性能参数 / Electrical Characteristics(Ta=25℃) (Q1:NPN)

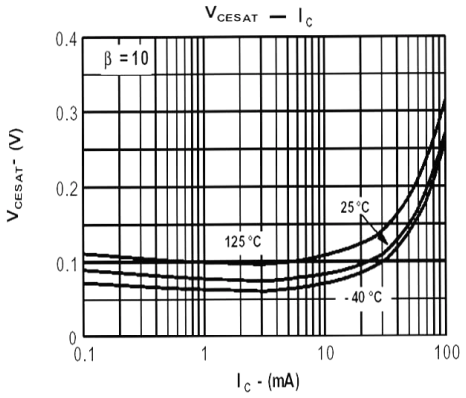
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=180V I_E=0			0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=6.0V I_C=0			0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=5.0V I_C=10mA	50	200	400	
	$h_{FE(2)}$	V_{CE}=5.0V I_C=50mA	20	160		
	$h_{FE(3)}$	V_{CE}=5.0V I_C=1.0mA	40	190		
Collector-Emitter Saturation Voltage	$V_{CE(sat)\ (1)}$	I_C=10mA I_B=1.0mA		0.06	0.15	V
	$V_{CE(sat)\ (2)}$	I_C=50mA I_B=5.0mA		0.09	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)\ (1)}$	I_C=10mA I_B=1.0mA		0.7	1.0	V
	$V_{BE(sat)\ (2)}$	I_C=50mA I_B=5.0mA		0.8	1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE}=5.0V I_C=10mA		0.68	0.75	V
Transition Frequency	f_T	V_{CE}=10V I_C=10mA	50	110		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V I_E=0 f=1.0MHz		2.2	5.0	pF
Turn-on Time	t_{on}	I_C=100mA I_{B1}=-I_{B2}=10mA		0.3		μs
Turn-off Time	t_{off}			0.4		μs
Storage Time	t_{stg}			0.2		μs

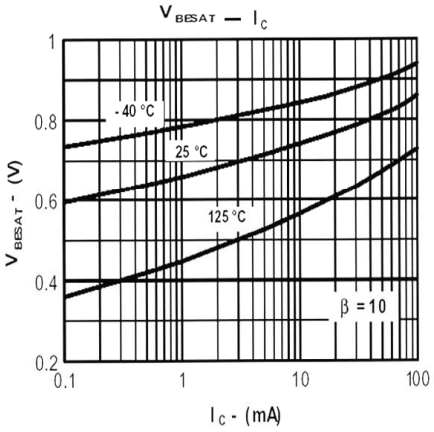
电性能参数 / Electrical Characteristics(Ta=25℃) (Q2:PNP)

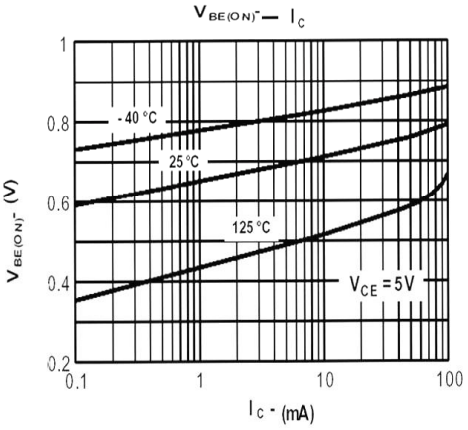
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=-180V I_E=0			-0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=-6.0V I_C=0			-0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=-5.0V I_C=-10mA	50	200	400	
	$h_{FE(2)}$	V_{CE}=-5.0V I_C=-50mA	20	70		
	$h_{FE(3)}$	V_{CE}=-5.0V I_C=-1.0mA	40	180		
Collector-Emitter Saturation Voltage	$V_{CE(sat)\ (1)}$	I_C=-10mA I_B=-1.0mA		-0.12	-0.4	V
	$V_{CE(sat)\ (2)}$	I_C=-50mA I_B=-5.0mA		-0.5	-0.8	V
Base-Emitter Saturation Voltage	$V_{BE(sat)\ (1)}$	I_C=-10mA I_B=-1.0mA		-0.75	-1.0	V
	$V_{BE(sat)\ (2)}$	I_C=-50mA I_B=-5.0mA		-0.8	-1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-5.0V I_C=-10mA		-0.7	-0.75	V
Transition Frequency	f_T	V_{CE}=-10V I_C=-10mA	50	80		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V I_E=0 f=10MHz		2.5	5.0	pF
Turn-on Time	t_{on}	I_C=-100mA $-I_{B1}=I_{B2}$=-10mA		0.1		μs
Storage Time	t_{off}			0.2		μs
Fall Time	t_{stg}			0.1		μs

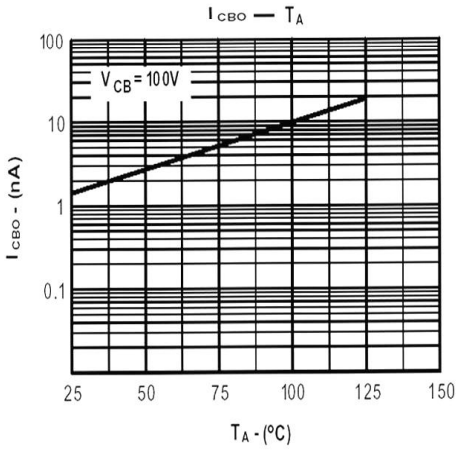
电参数曲线图 / Electrical Characteristic Curve (Q1:NPN)

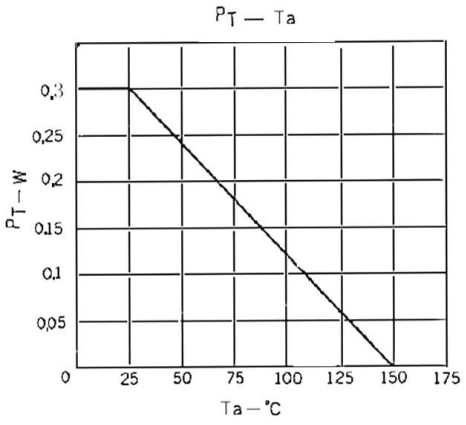




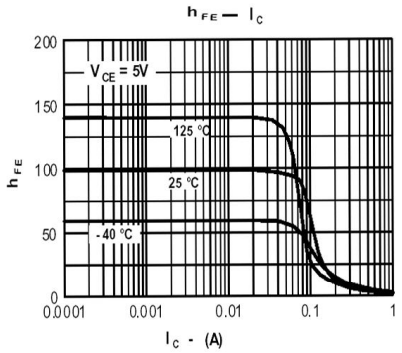


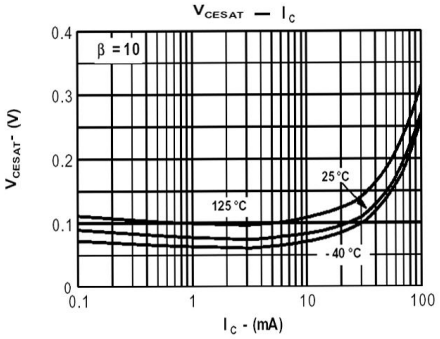


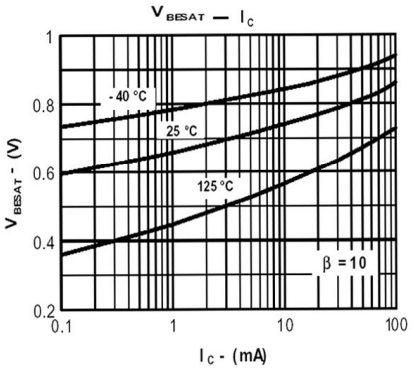


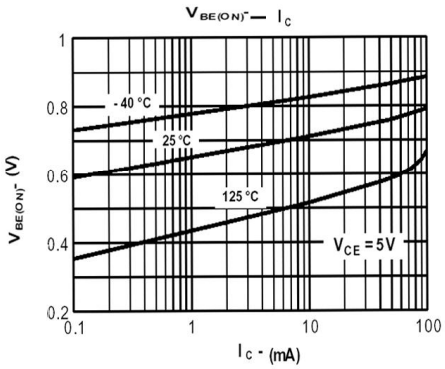


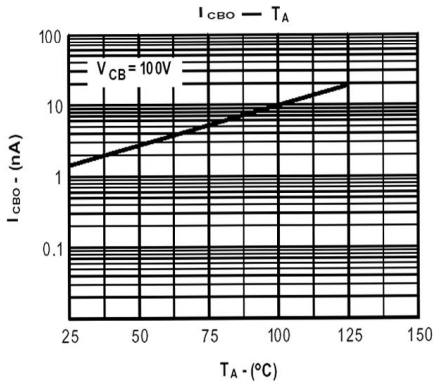
电参数曲线图 / Electrical Characteristic Curve (Q2:PNP)

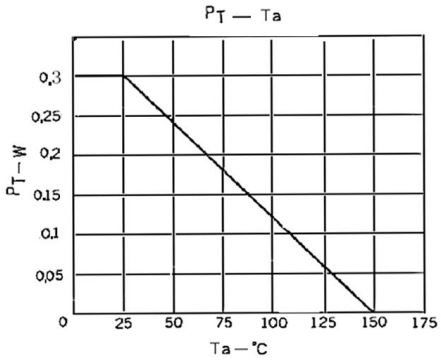






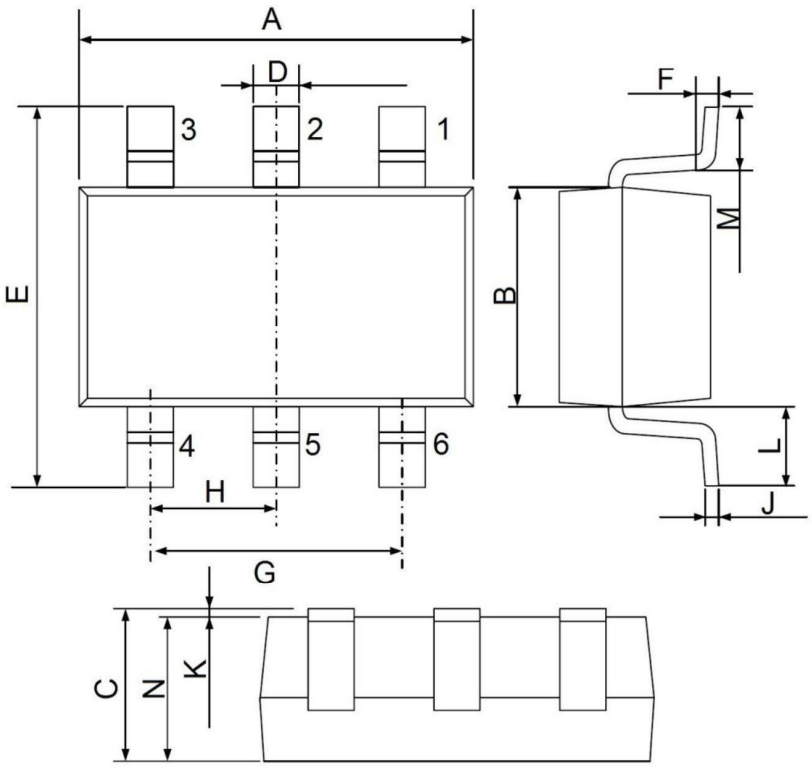






外形尺寸图 / Package Dimensions

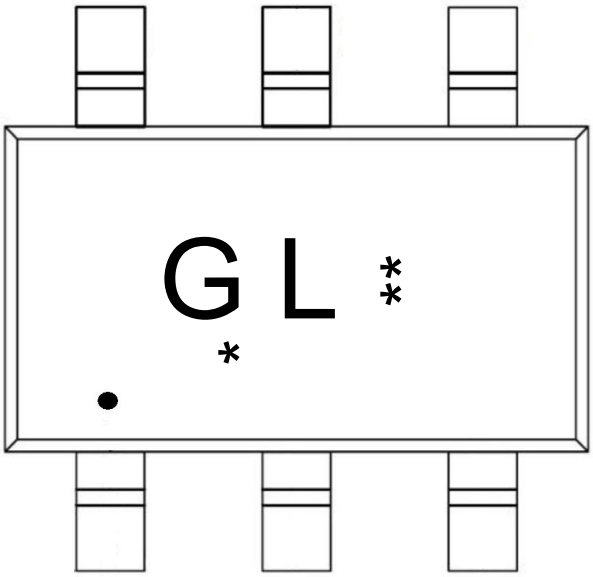
SOT-363-6L



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

GL : 为型号代码

***: 为生产批号代码，随生产批号变化

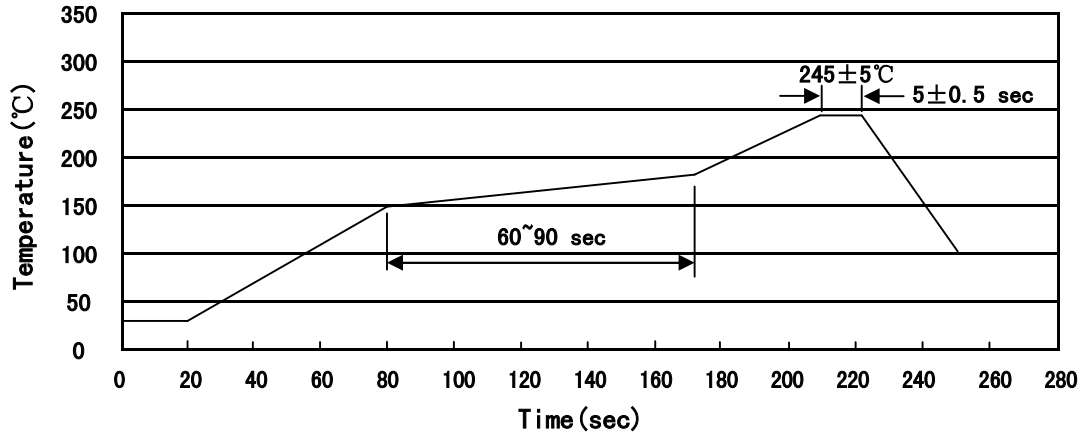
Note:

● : “1” Pin

GL : 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 150～180℃，时间 60～90sec;

2、峰值温度 245±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:150~180℃, Time:60~90sec.

2.Peak Temp.:245±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: 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-363	3,000	10	30,000	6	180,000	7″ ×8	180×120×180	390×385×205

使用说明 / Notices