MMBT4403

Rev.G May.-2023

DATA SHEET

描述 / Descriptions

SOT-23 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-23 Plastic Package.

特征 / Features

集电极电流可达 500mA。

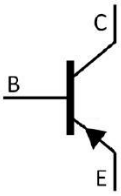
Collector currents up to 500 mA.

用途 / Applications

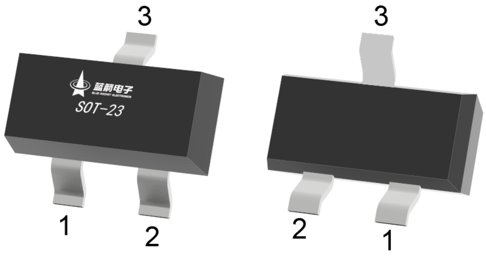
用于普通放大及开关电路。

General purpose amplifier and switch requiring.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1：Base   PIN 2：Emitter   PIN 3：Collector

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

h_{FE} Range	100～300
Marking	2TH

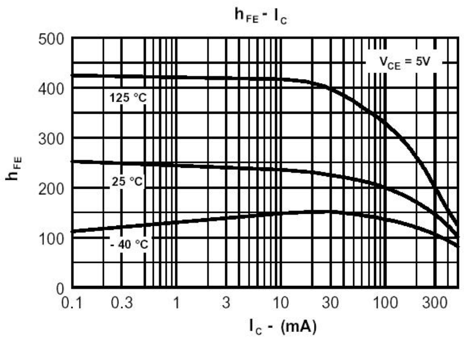
极限参数 / Absolute Maximum Ratings(Ta=25℃)

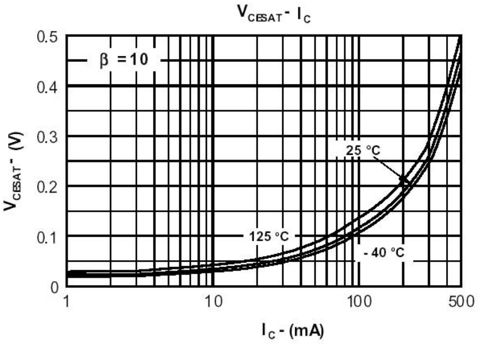
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	-40	V
Collector to Emitter Voltage	V_{CEO}	-40	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-600	mA
Collector Power Dissipation	P_C	350	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

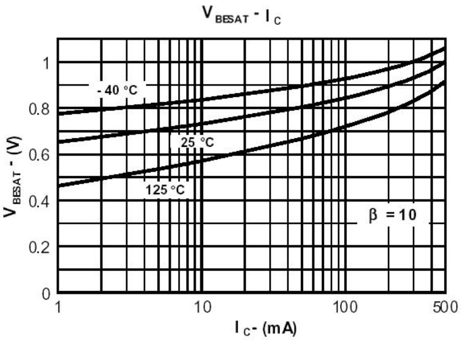
电性能参数 / Electrical Characteristics(Ta=25℃)

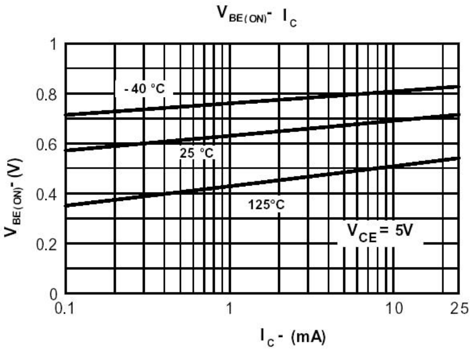
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=-0.1mA I_E=0	-40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=-1.0mA I_B=0	-40			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=-0.1mA I_C=0	-5.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-40V I_E=0			-50	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=-5.0V I_C=0			-50	nA
DC Current Gain	$h_{FE(1)}$	V_{CE}=-2.0V I_C=-150mA	100		300	
	$h_{FE(2)}$	V_{CE}=-1.0V I_C=-0.1mA	30			
	$h_{FE(3)}$	V_{CE}=-1.0V I_C=-1.0mA	60			
	$h_{FE(4)}$	V_{CE}=-1.0V I_C=-10mA	100			
	$h_{FE(5)}$	V_{CE}=-2.0V I_C=-500mA	20			
Collector-Emitter Saturation voltage	$V_{CE(sat)\ (1)}$	I_C=-150mA I_B=-15mA			-0.4	V
	$V_{CE(sat)\ (2)}$	I_C=-500mA I_B=-50mA			-0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)\ (1)}$	I_C=-150mA I_B=-15mA	-0.75		-0.95	V
	$V_{BE(sat)\ (2)}$	I_C=-500mA I_B=-50mA			-1.3	V
Transition Frequency	f_T	V_{CE}=-10V I_C=-20mA f=100MHz	200			MHz
Delay Time	t_d	V_{CC}=-30V I_C=-150mA I_{B1}=-15mA			15	ns
Rise Time	t_r				20	ns
Storage Time	t_s	V_{CC}=-30V I_C=-150mA I_{B1}=I_{B2}=-15mA			225	ns
Fall Time	t_f				30	ns

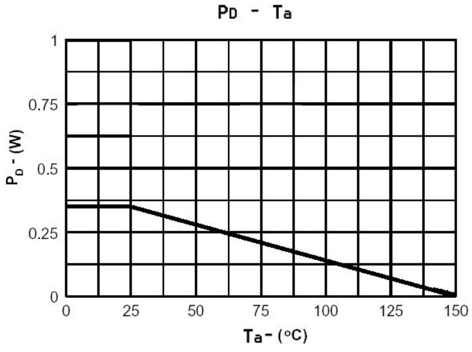
电参数曲线图 / Electrical Characteristic Curve

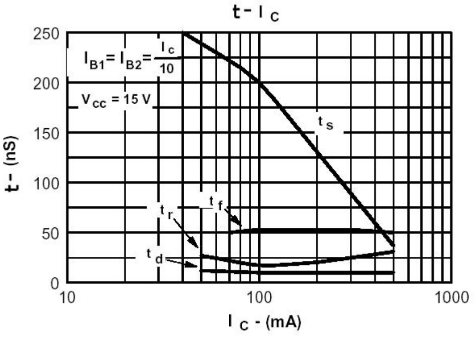






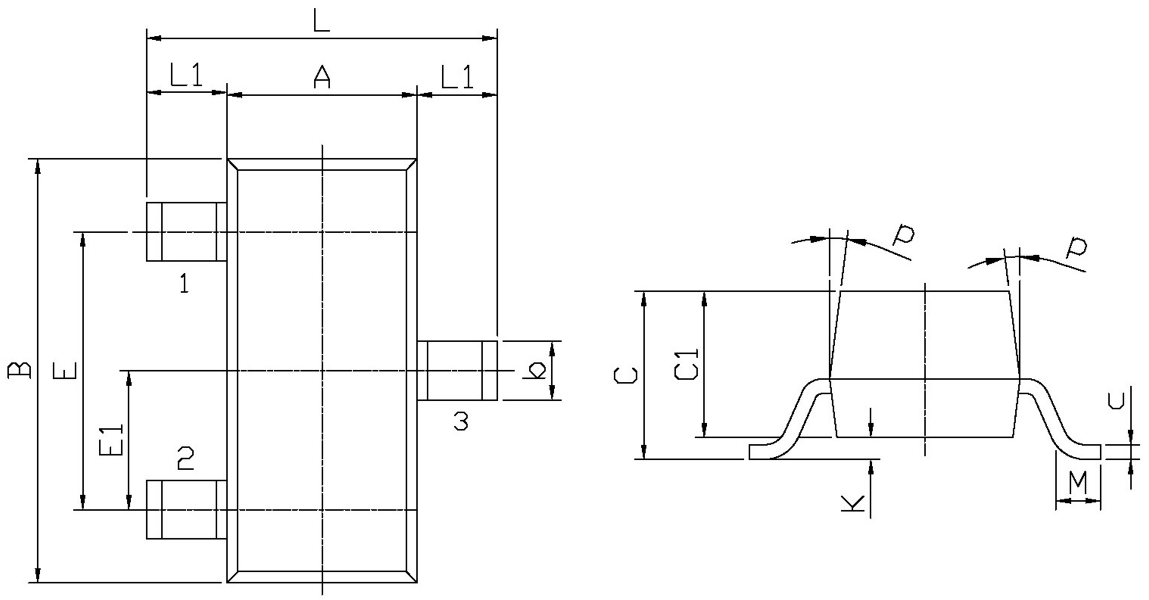






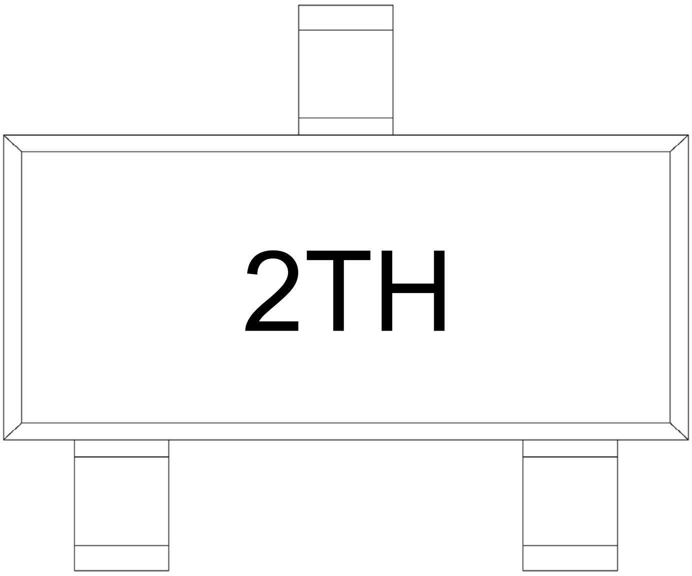
外形尺寸图 / Package Dimensions

SOT-23 单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

印章说明 / Marking Instructions



说明：

2T： 为型号代码

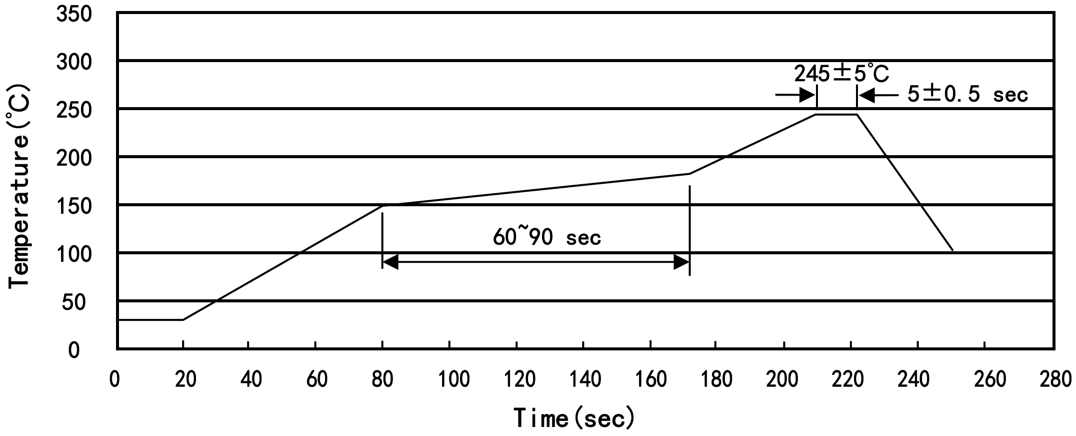
H： 为公司代码

Note:

2T： Product Type Code

H： Company Code

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：	Note:
1、预热温度 150～180℃，时间 60～90sec;	1.Preheating:150~180℃, Time:60~90sec.
2、峰值温度 245±5℃，时间持续为 5±0.5sec;	2.Peak Temp.:245±5℃, Duration:5±0.5sec.
3、焊接制程冷却速度为 2～10℃/sec.	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-23	3,000	10	30,000	6	180,000	7″ ×8	180×120×180	390×385×205

使用说明 / Notices