

描述 / Descriptions

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

特征 / Features

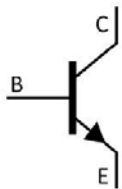
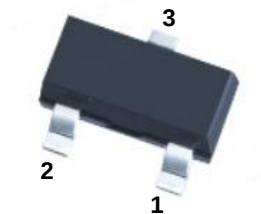
EB 击穿电压高,反向放大高(典型值 150) , 导通电阻低 ($I_B=5\text{mA}$ 时典型值为 1 欧姆)。

High V_{EBO} , high reverse h_{FE} (typ. 150, $V_{CE}=-2\text{V}$, $I_C=-2\text{mA}$), low on resistance ($R_{on}=1\Omega$, $I_B=5\text{mA}$).

用途 / Applications

用于静音和开关电路。

For muting and switching applications.

内部等效电路 / Equivalent Circuit**引脚排列 / Pinning**

PIN 1 : Emitter

PIN 2 : Base

PIN 3 : Collector

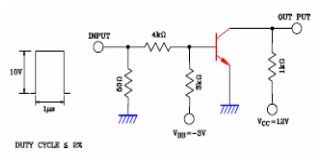
放大及印章代码 / h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	A	B
h_{FE} Range	200~700	350~1200
Marking	HMA	HMB

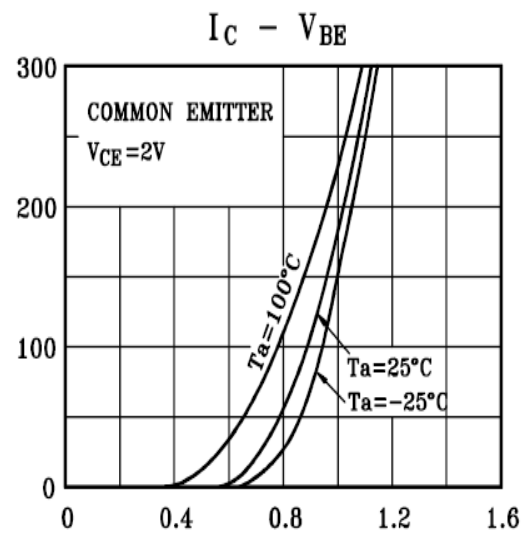
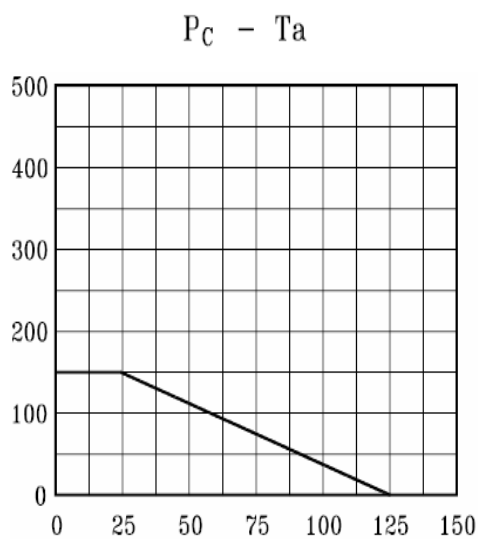
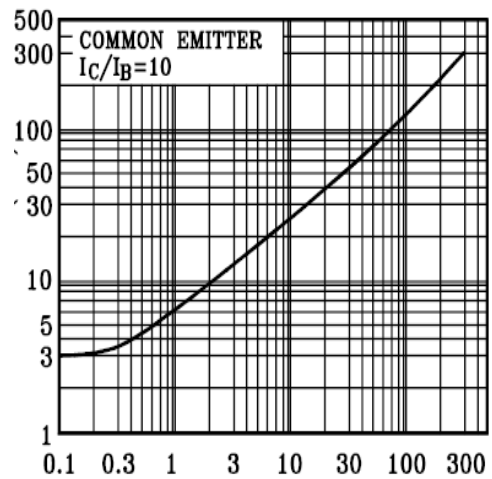
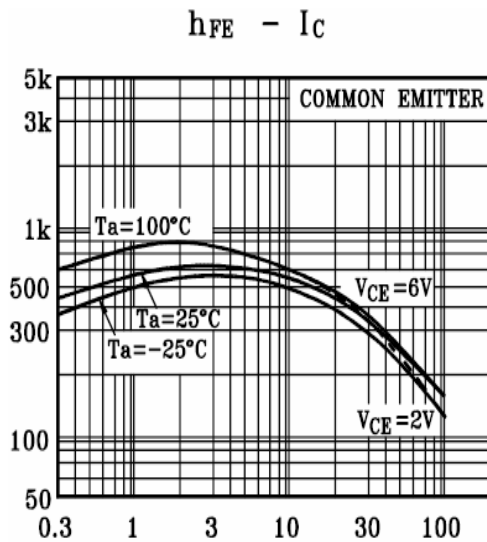
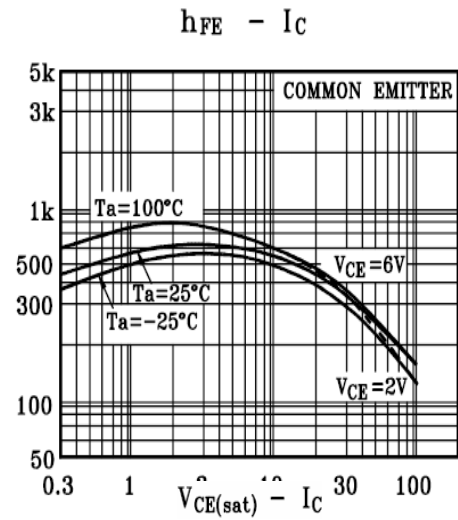
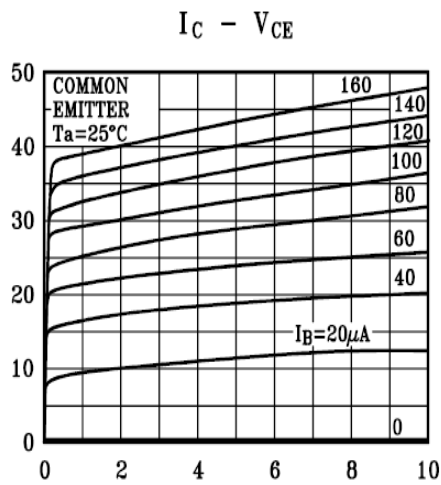
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	25	V
Collector Current	I_C	300	mA
Base Current	I_B	60	mA
Collector Power Dissipation	P_C	150	mW
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 Emitter Breakdown Voltage	V_{CBO}	$I_C=100\mu A$	50			V
Collector to Base Breakdown Voltage	V_{CEO}	$I_C=500\mu A$	20			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=100\mu A$	25			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50V \quad I_E=0$			0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=25V \quad I_C=0$			0.1	μA
Forward Current Transfer Ratio	h_{FE}	$V_{CE}=2.0V \quad I_C=4.0mA$	200		1200	
Base-Emitter Voltage	V_{BE}	$V_{CE}=2.0V \quad I_C=4.0mA$		0.61		V
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=30mA \quad I_B=3.0mA$		0.042	0.3	V
Transition Frequency	f_T	$V_{CE}=6.0V \quad I_C=4.0mA$		30		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V \quad f=1.0MHz$		4.8	7	pF
Turu-On Time	T_{on}			160		nS
Storage Time	T_{stg}			500		
Fall Time	t_f			130		

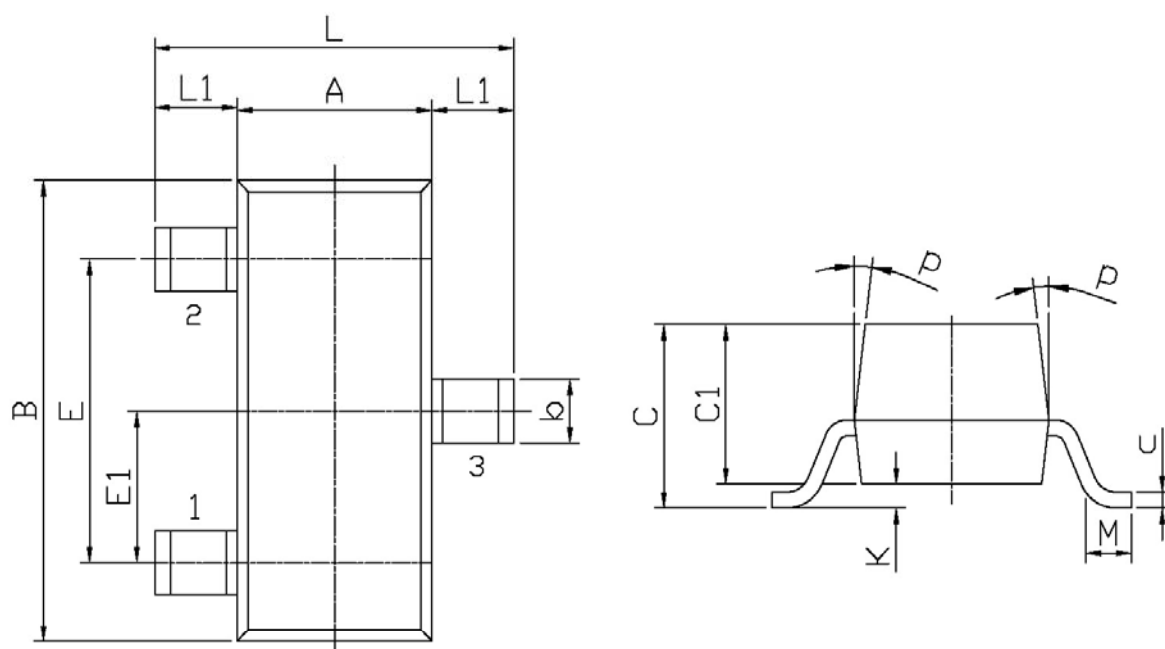
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

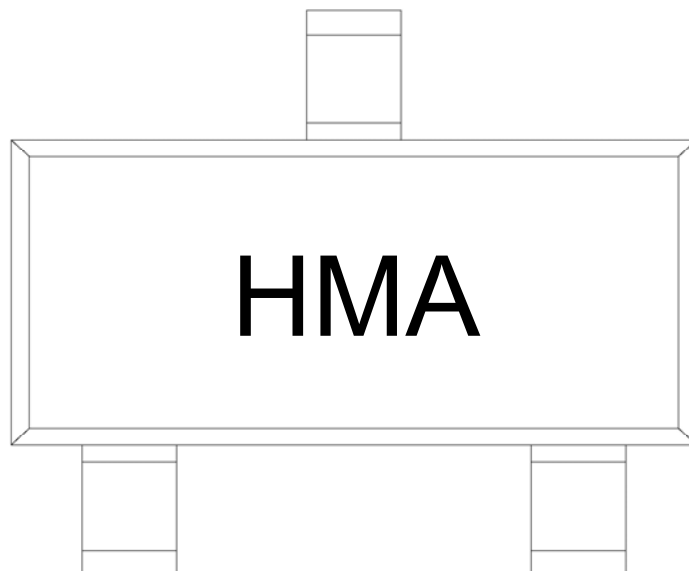
SOT-23

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	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：

H： 为公司代码

M： 为型号代码

A： 为 h_{FE} 档次代码

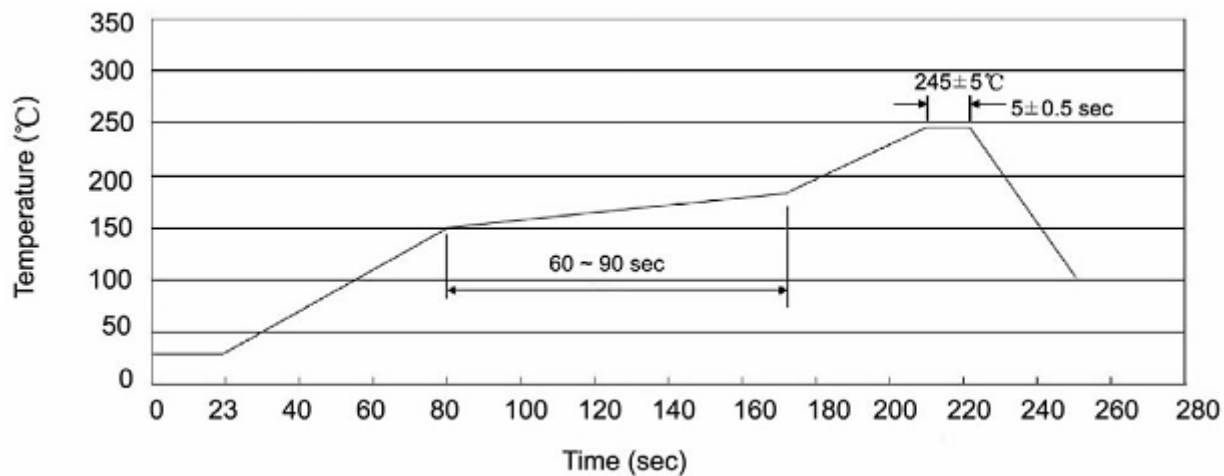
Note:

H： Company Code

M： Product Type

A： h_{FE} Classifications Symbol

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：270±5°C 时间：10±1 sec.

Temp.:270±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 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/盒	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	8	240,000	7" x8	180×120×180	385×257×392

使用说明 / Notices