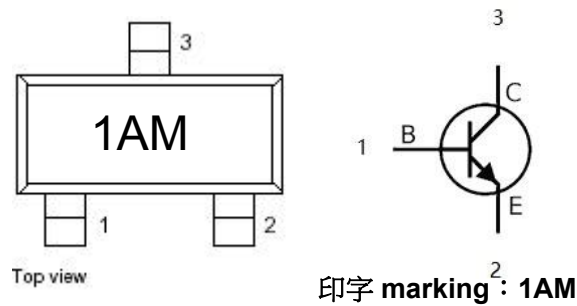


**一、Features 产品特性**

**MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ ) 最大额定值**

CHARACTERISTIC 特性参数	Symbol 符号	Rating 额定值	Unit 单位
Collector-Emitter Voltage 集电极-发射极电压	$V_{CE0}$	40	Vdc
Collector-Base Voltage 集电极-基极电压	$V_{CBO}$	60	Vdc
Emitter-Base Voltage 发射极-基极电压	$V_{EBO}$	5	Vdc
Collector Current—Continuous 集电极电流-连续	$I_c$	200	mAdc

**THERMAL CHARACTERISTICS 热特性**

CHARACTERISTIC 特性参数	Symbol 符号	Max 最大值	Unit 单位
Total Device Dissipation 总耗散功率 FR-5 Board(1) ( $T_A=25^\circ\text{C}$ 环境温度= $25^\circ\text{C}$ )	$P_D$	225	mW
Derate above $25^\circ\text{C}$ 超过 $25^\circ\text{C}$ 递减		1.8	mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient 热阻	$R_{JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate,(2) $T_A=25^\circ\text{C}$ 总耗散功率 氧化铝衬底	$P_D$	300	mW
Derate above $25^\circ\text{C}$ 超过 $25^\circ\text{C}$ 递减		2.4	mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient 热阻	$R_{JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature 结温和储存温度	$T_j,$ $T_{stg}$	150, -55 ~150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS 电特性**

( $T_A=25^\circ\text{C}$  unless otherwise noted 如无特殊说明, 温度为 $25^\circ\text{C}$ )

Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Collector Cutoff Current 集电极截止电流	$I_{CEX}$	$V_{CE}=30\text{Vdc},$ $V_{EB}=3.0\text{Vdc}$	—	—	50	nAdc
Base Cutoff Current 基极截止电流	$I_{BEX}$	$V_{CE}=30\text{Vdc},$ $V_{EB}=3.0\text{Vdc}$	—	—	50	nAdc

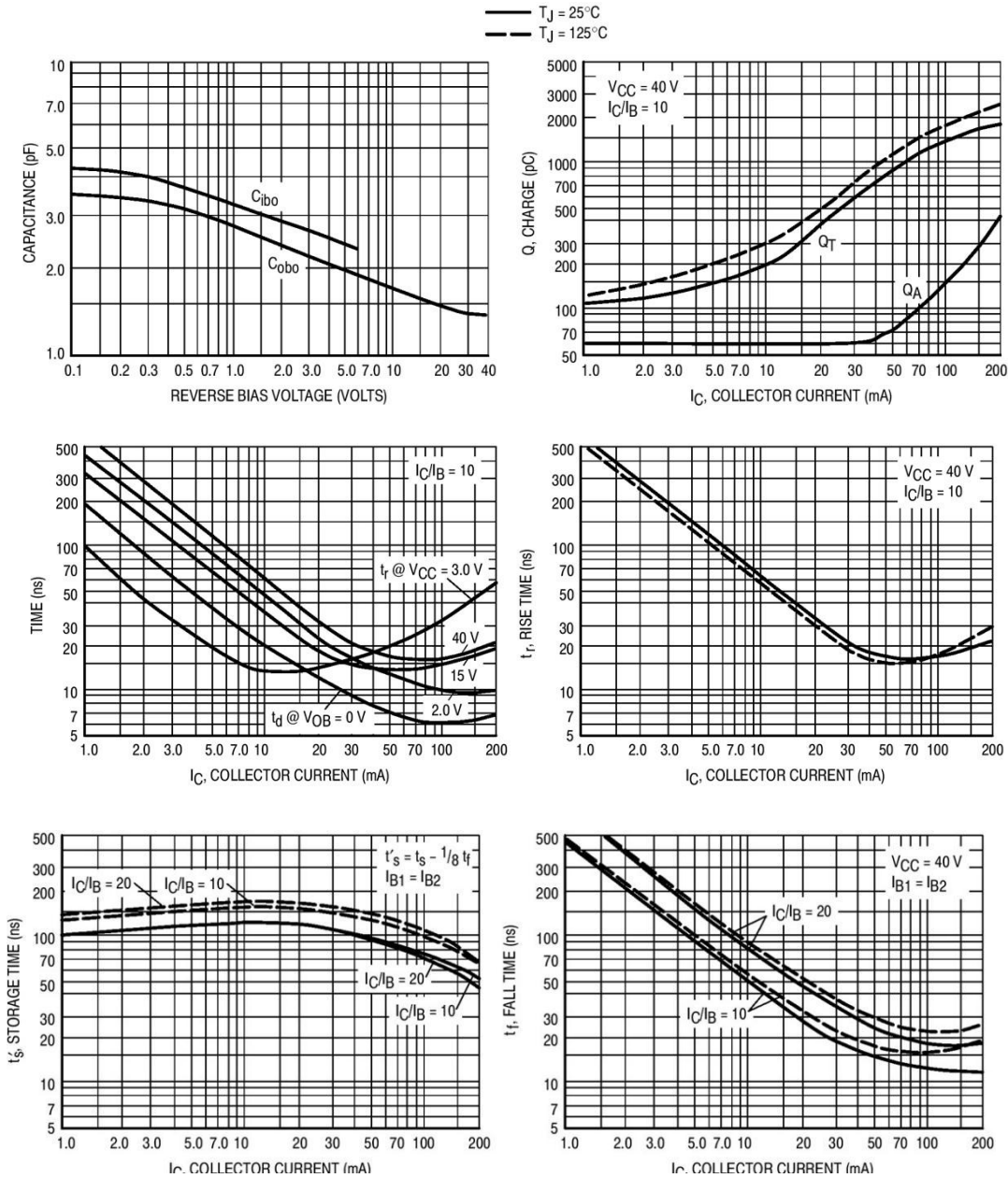
Collector-Emitter Breakdown Voltage(3) 集电极-发射极击穿电压	$V_{(BR)CEO}$	$I_C=1.0mA, I_B=0$	40	—	—	Vdc
Collector-Base Breakdown Voltage 集电极-基极击穿电压	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60	—	—	Vdc
Emitter-Base Breakdown Voltage 发射极-基极击穿电压	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5	—	—	Vdc
DC Current Gain 直流电流增益	$h_{FE}$	$I_C=0.1mA, V_{CE}=1.0Vdc$	40	—	—	—
		$I_C=1.0mA, V_{CE}=1.0Vdc$	70	—	—	
		$I_C=10mA, V_{CE}=1.0Vdc$	100	—	300	
		$I_C=50mA, V_{CE}=1.0Vdc$	60	—	—	
		$I_C=100mA, V_{CE}=1.0Vdc$	30	—	—	
Collector-Emitter Saturation Voltage(3)集电极发射极饱和压降	$V_{CE(sat)}$	$I_C=10mA, I_B=1.0mA$	—	—	0.2	Vdc
		$I_C=50mA, I_B=5.0mA$	—	—	0.3	
Base-Emitter Saturation Voltage 基极-发射极饱和压降	$V_{BE(sat)}$	$I_C=10mA, I_B=1.0mA$	0.65	—	0.85	Vdc
		$I_C=50mA, I_B=5.0mA$	—	—	0.95	
Current-Gain-Bandwidth Product 电流增益-带宽乘积	$f_T$	$I_C=10mA, V_{CE}=20Vdc, f=100MHz$	300	—	—	MHz
Output Capacitance 输出电容	$C_{obo}$	$V_{CB}=5.0Vdc, I_E=0, f=1.0MHz$	—	—	4.0	pF
Input Capacitance 输入电容	$C_{ibo}$	$V_{EB}=0.5Vdc, I_C=0, f=1.0MHz$	—	—	8.0	pF
Input Impedance 输入阻抗	$h_{ie}$	$V_{CE}=10Vdc, I_C=1.0mA, f=1.0KHz$	1.0	—	10	kΩ
Voltage Feedback Ratio 电压反馈系数	$h_{re}$	$V_{CE}=10Vdc, I_C=1.0mA, f=1.0KHz$	0.5	—	8.0	$\times 10^{-4}$
Small-Signal Current Gain 小信号电流增益	$h_{fe}$	$V_{CE}=10Vdc, I_C=1.0mA, f=1.0KHz$	100	—	400	
Output Admittance 输出导纳	$*h_{oe}$	$V_{CE}=10Vdc, I_C=1.0mA, f=1.0KHz$	1.0	—	40	μmhos
Noise Figure 噪声系数	NF	$V_{CE}=5.0Vdc, I_C=100\mu A, f=1.0KHz$	—	—	5.0	dB

SWITCHING CHARACTERISTICS 开关特性

Delay Time 延迟时间	$t_d$	$V_{CC}=3.0V_{dc}, V_{BE}=-0.5V_{dc}$	—	—	35	nS
Rise Time 上升时间	$t_r$	$I_C=10mAdc, I_{B1}=1.0mAdc$	—	—	35	
Storage Time 储存时间	$t_s$	$V_{CC}=3.0V_{dc}, I_C=10mAdc$	—	—	200	nS
Fall Time 下降时间	$t_f$	$I_{B1}=I_{B2}=1.0mAdc$	—	—	50	

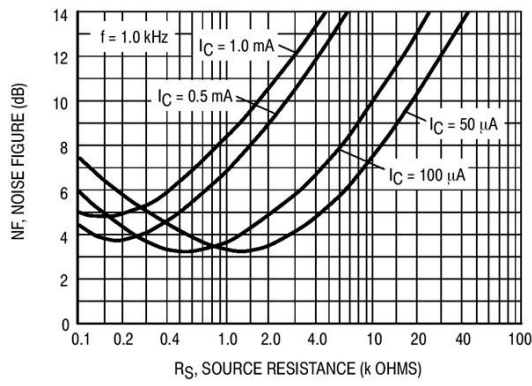
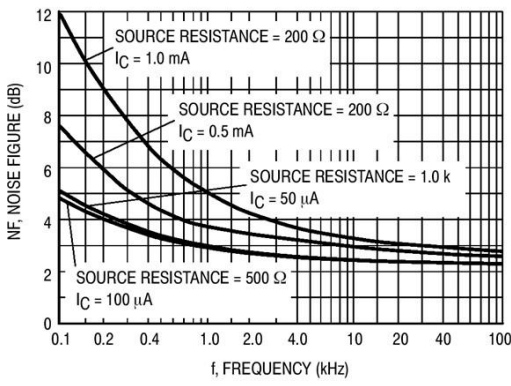
- FR-5=1.0×0.75×0.062in.
- Alumina=0.4×0.3×0.024in, 99.5%alumina.
- Pulse Width≤300μS; Duty Cycles≤2.0%.

Typical Characteristics



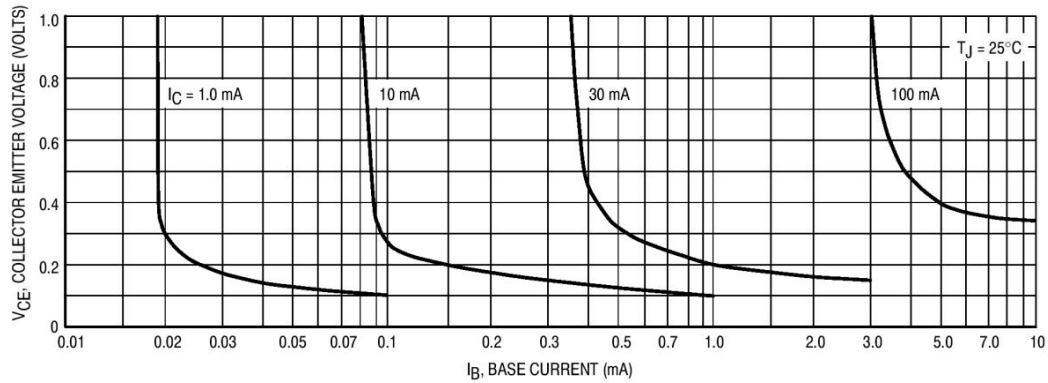
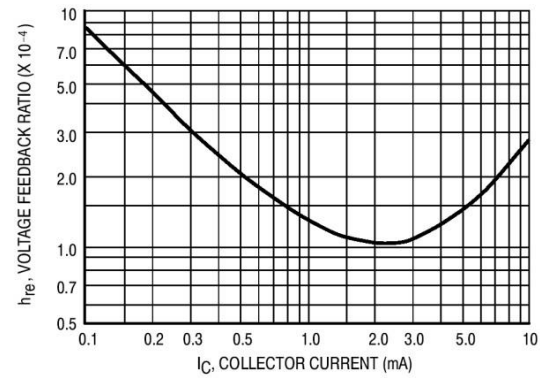
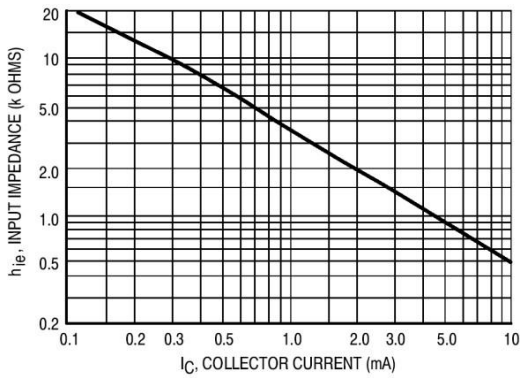
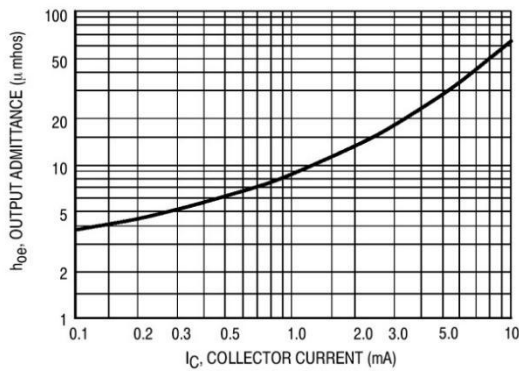
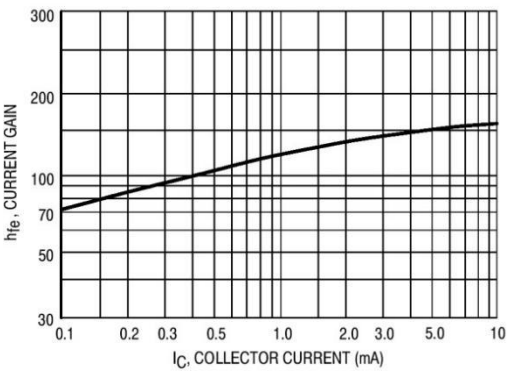
TYPICAL AUDIO SMALL-SIGNAL CHARACTERISTICS  
NOISE FIGURE VARIATIONS

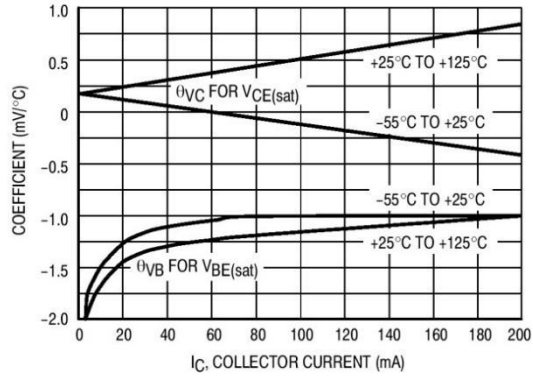
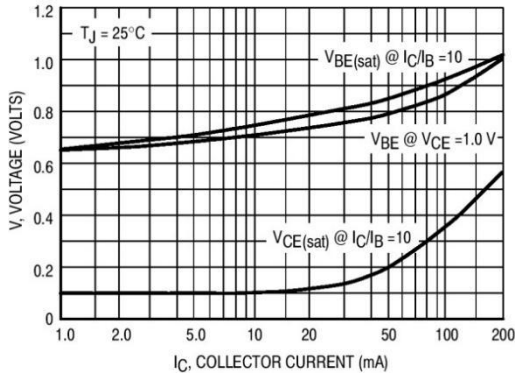
( $V_{CE} = 5.0$  Vdc,  $T_A = 25^\circ\text{C}$ , Bandwidth = 1.0 Hz)



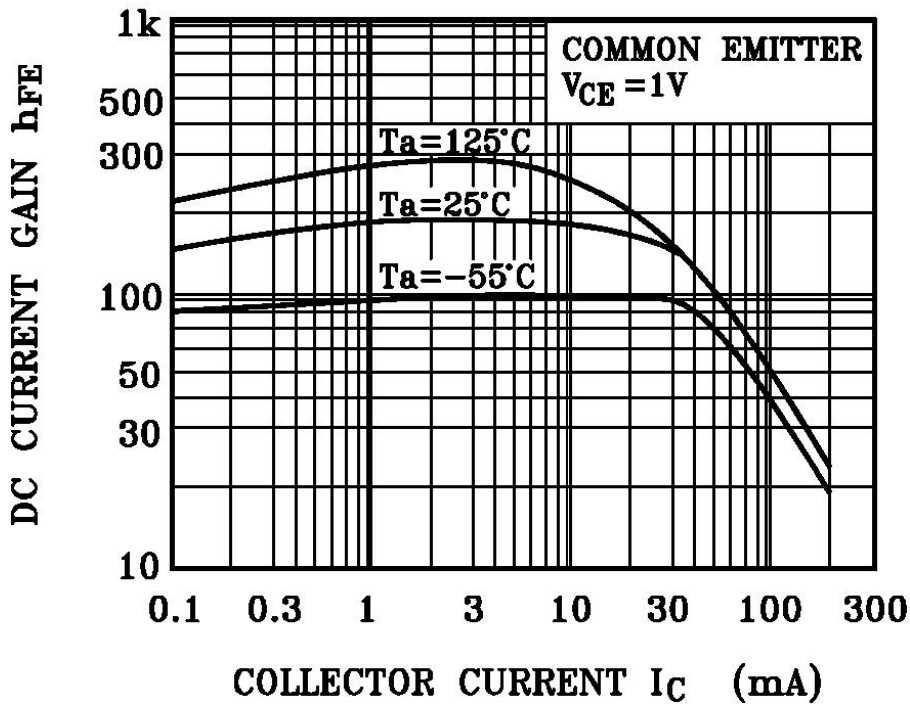
h PARAMETERS

( $V_{CE} = 10$  Vdc,  $f = 1.0$  kHz,  $T_A = 25^\circ\text{C}$ )

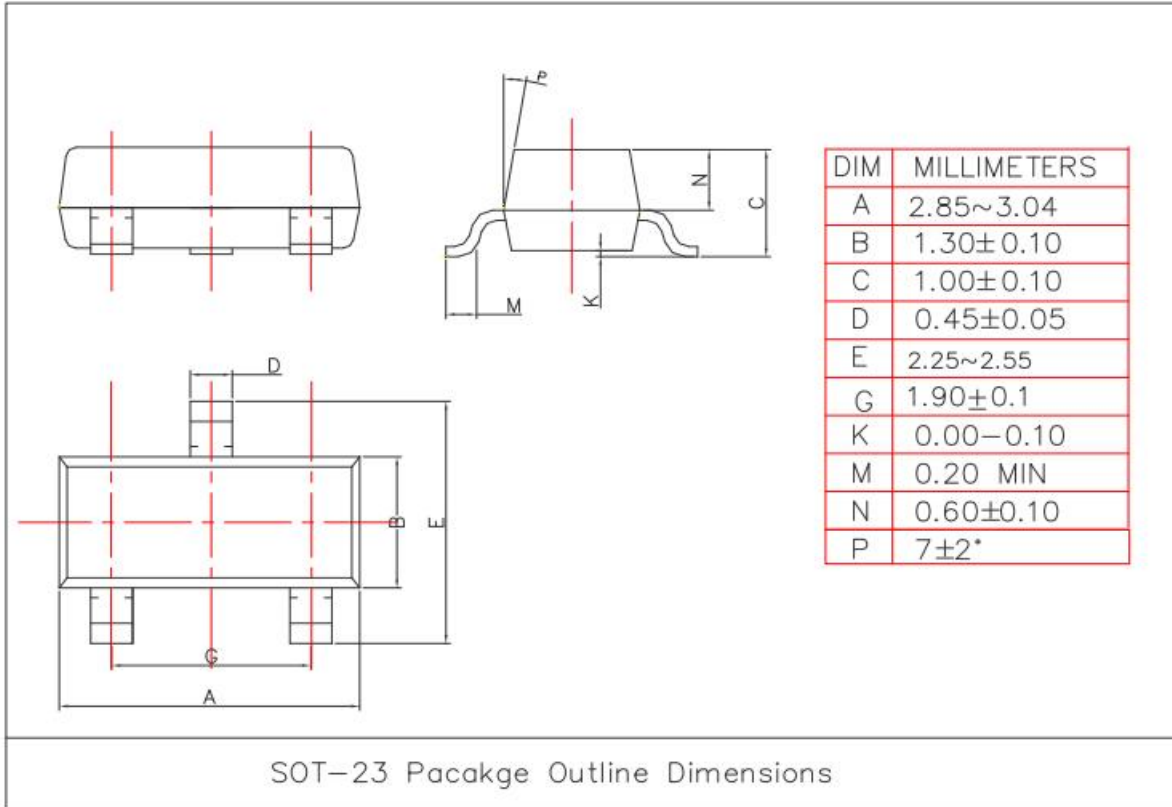




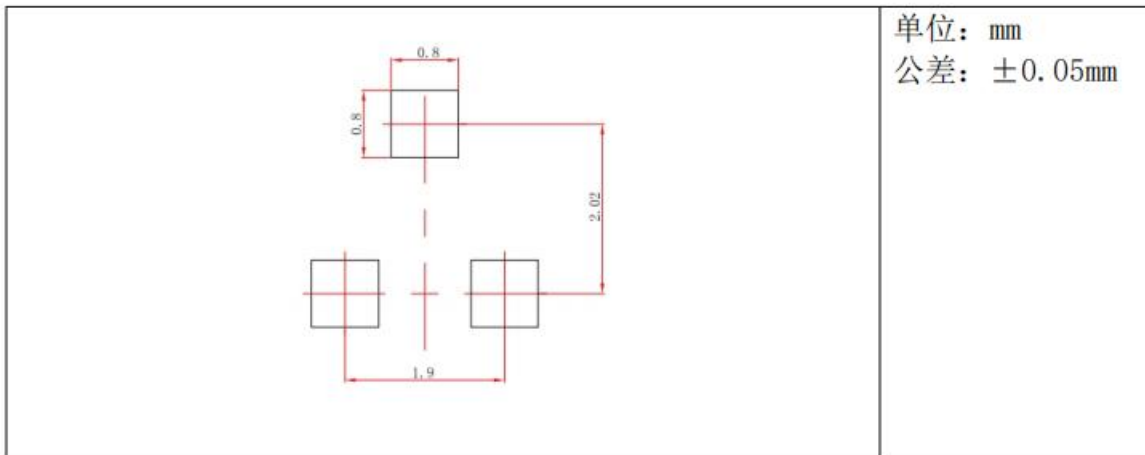
**h<sub>FE</sub> - I<sub>C</sub>**



二、SOT-23 外形尺寸 (SOT-23 DIMENSION)



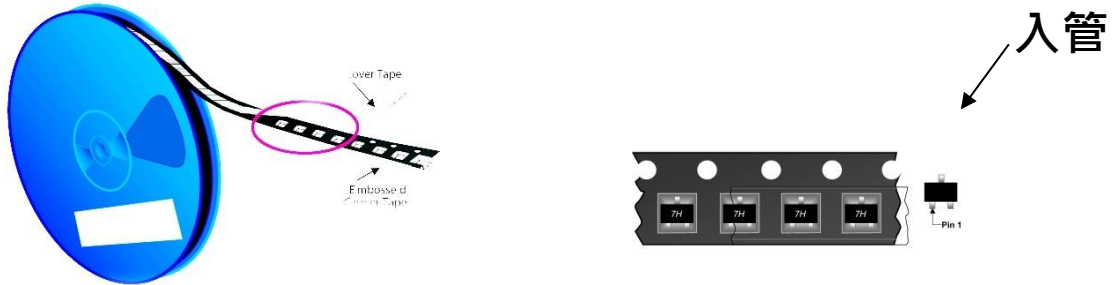
三、焊盘尺寸设计 SOT-23 Suggested Layout



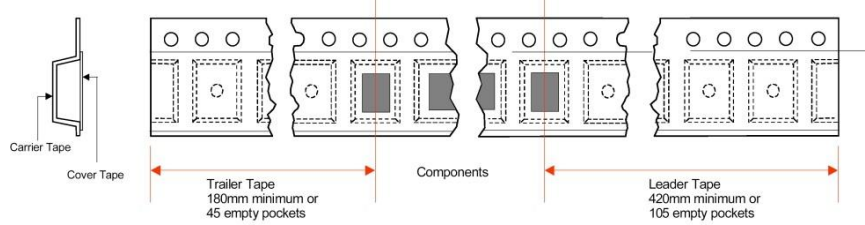


四、包装方式 Packings

封装形式	卷盘尺寸	只/卷	内盒尺寸	卷盘/内盒	只/内盒	外箱尺寸	内盒/外箱	只/外箱
SOT-23	7"	3000	190X190X135mm	10	30000	430 X 400 X 215mm	6	180K
			203X203X195mm	15	45000	440 X 440 X 230mm	4	180K



SOT-23 产品编带、包装图



SOT-23 带尾、带头空封数

