

## ■ 描述 DESCRIPTIONS

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

## ■ 应用 APPLICATIONS

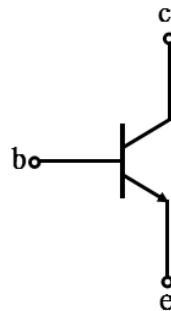
常规应用、开关电路。General purpose application,switching.

## ■ 引脚说明 PIN ASSIGNMENT



- 1 BASE
- 2 EMITTER
- 3 COLLECTOR

## ■ 内部等效电路 Equivalent Circuit



## ■ 型号构成 Name rule

基本名称 Name			辅助识别代码 Additional code			
第一部分 Part 1	第二部分 Part 2	第三部分 Part 3	第四部分 Part 4	第五部分 Part 5	第六部分 Part 6	第七部分 Part 7
品牌 Brand	产品类别 Type	产品型号 Model	分档 Value	分隔号 Separatrix	封装代码 Package	附加码 (备用) Extra-code
FH	S : 开关三极管	3904		“—”	M: SOT-23	E : ROHS G: 绿色封装 Green Package

**■ 额定值 ABSOLUTE MAXIMUM RATINGS (TC=25°C unless otherwise noted)**

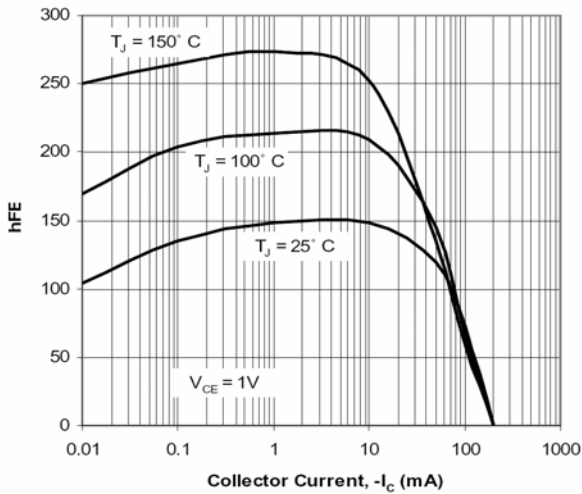
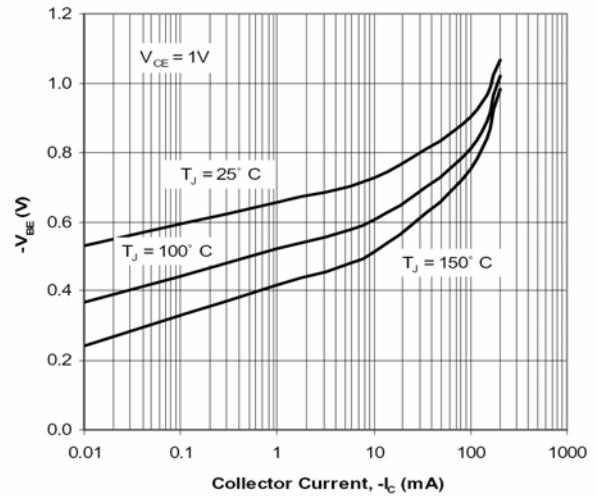
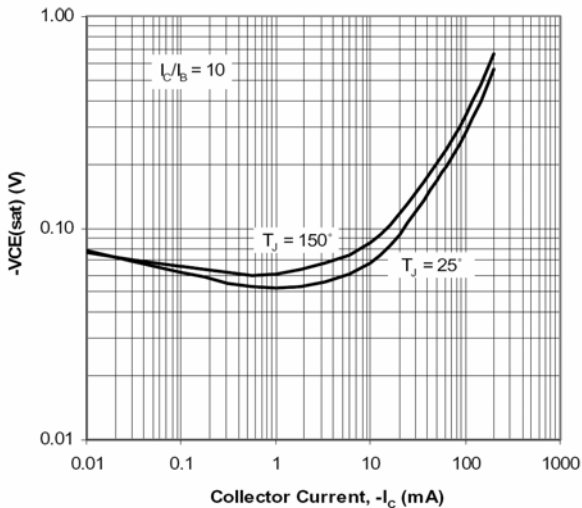
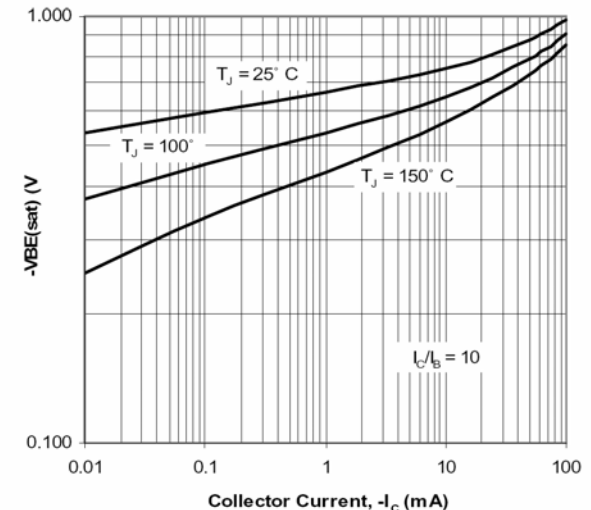
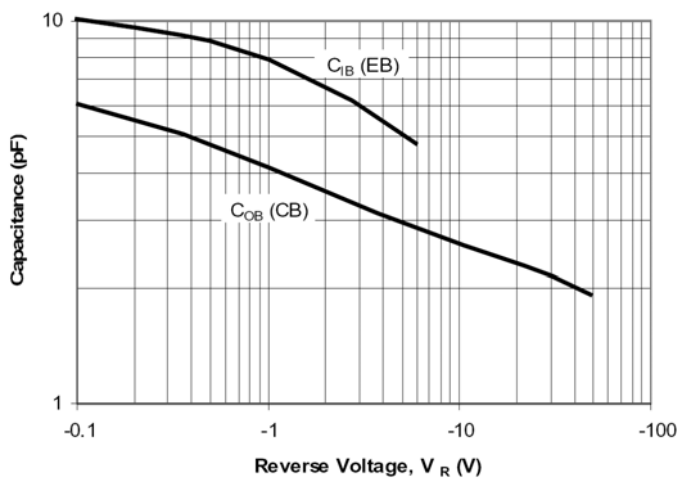
特性参数 CHARACTERISTIC	符号 SYMBOL	额定值 RATING	单位 UNIT
集电极-基极电压 Collector-Base Voltage	$V_{CBO}$	60	V
集电极-发射极电压 Collector-Emitter Voltage	$V_{CEO}$	40	V
发射极-基极电压 Emitter-Base Voltage	$V_{EBO}$	6	V
集电极电流 Collector Current	$I_C$	200	mA
集电极电流-峰值 Collector Current - Peak	$I_{CM}$	800	mA
集电极耗散功率 Collector Power Dissipation	$P_C$	225	mW
结温 Junction Temperature	$T_j$	150	°C
储存温度 Storage Temperature	$T_{stg}$	- 55~150	°C

**■ 电特性 ELECTRICAL CHARACTERISTICS**

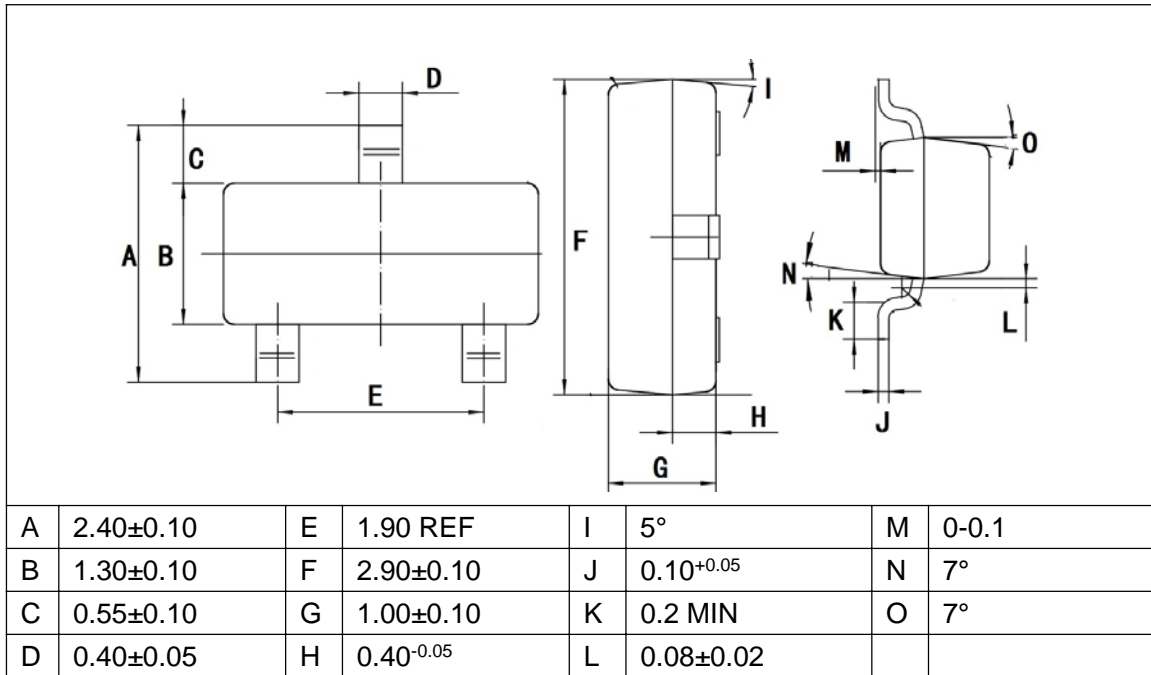
(TA=25°C unless otherwise noted 如无特殊说明, 温度为 25°C)

特性参数 CHARACTERISTIC	符号 SYMBOL	测试条件 TEST CONDITIONS	最小值 MIN.	典型值 TYP.	最大值 MAX.	单位 UNIT	
集电极-基极反向击穿电压 Collector-Base Voltage	BVCBO	Ic= 0.01mA, IE=0	60			V	
集电极-发射极反向击穿电压 Collector-Emitter Voltage	BVCEO	Ic= 1mA, IB=0	40			V	
发射极-基极反向击穿电压 Emitter-Base Breakdown Voltage	BVEBO	IE= 0.01mA, Ic=0	6			V	
基极截止电流 Base Cut-off Current	IBL	VCE= 30V, VEB=3V			0.05	μA	
集电极截止电流 Collector Cut-off Current	ICEX	VCE= 30V, VEB=3V			0.05	μA	
直流电流增益 DC Current Gain ( Note * )	HFE	IC = 0.1 mA, VCE = 1.0 V	40				
		IC = 1.0 mA, VCE = 1.0 V	70				
		IC = 10 mA, VCE = 1.0 V	100		300		
		IC = 50 mA, VCE = 1.0 V	60				
		IC = 100 mA, VCE = 1.0 V	30				
集电极-发射极饱和压降 Collector-Emitter Saturation Voltage ( Note * )	VCE(sat)	Ic= 10mA, IB= 1mA			0.2	V	
		Ic= 50mA, IB= 5mA			0.3		
基极-发射极饱和压降 Base-Emitter Saturation Voltage ( Note * )	VBE(sat)	Ic= 10mA, IB= 1mA	0.65		0.85	V	
		Ic= 50mA, IB= 5mA			0.95		
电流增益-带宽乘积 Gain Bandwidth Product	fT	Ic= 10mA, VCE= 20V	300			MHz	
共基极输出电容 Collector Output Capacitance	Cob	VCB= 5V, IE=0, f = 1MHz			4	PF	
噪声系数 Noise factor	NF	VCE=5V, IC= 0.1mA, f = 15.7KHz, Rg=1KΩ			5	dB	
延迟时间 Delay Time	td	VCC = 3.0 V, VBE = -0.5 V, IC = 10 mA, IB1 = 1.0 mA			35	ns	
上升时间 Rise Time	tr				35		
存储时间 Storage Time	ts		VCC = 3.0 V, IC = 10 mA,				200
下降时间 Fall Time	tf		IB1 = IB2 = 1.0 mA				50

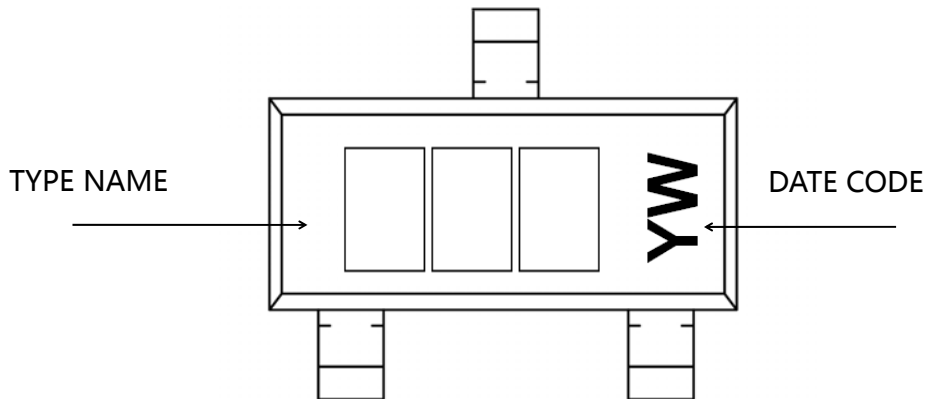
Note \*: Pulse Test: Pulse Width &lt; 300 us, Duty Cycle &lt; 2.0%.

**典型特性 TYPICAL CHARACTERISTICS**

**Fig. 1. Typical  $h_{FE}$  vs. Collector Current**

**Fig. 2. Typical  $V_{BE}$  vs. Collector Current**

**Fig. 3. Typical  $V_{CE(sat)}$  vs. Collector Current**

**Fig. 4. Typical  $V_{BE(sat)}$  vs. Collector Current**

**Fig. 5. Typical Capacitances vs. Reverse Voltage**

■ 外形尺寸 DIMENSION



■ 打标 DEVICE MARKING



TYPE	FHS3904-ME
$h_{FE}$	100~300
MARK	1AM

**■ 包装信息 PACKAGE INFORMATION**

材料名称 Material Name	颜色 Color	尺寸 Size	数量 Quantity	备注 Note
卷盘 Reel	蓝色 Blue	7 " *8mm	3K/Reel	
内盒 Inner Case	黄色 Yellow	185*185*140mm	30K/盒 ( 10 盘/盒 ) 30K/Case ( 10 Reel/ Case )	OHO2
外箱 Outer Box	黄色 Yellow	460*400*210mm	180K/箱 ( 6 盒/箱 ) 180K/Box ( 6 Case/Box )	OXO2
标签 Label	白色 White	68*40mm	—	贴卷盘、内盒、外箱 Label on reel、inner case、 outer box

单击下面可查看定价，库存，交付和生命周期等信息

[>>FH\(风华高科\)](#)