

■ 描述 DESCRIPTIONS

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

■ 应用 APPLICATIONS

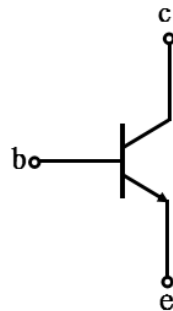
常规应用、开关电路。General purpose application,switching.

■ 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)

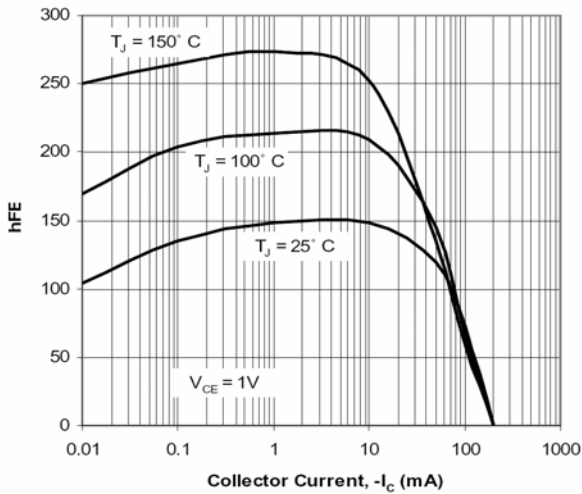
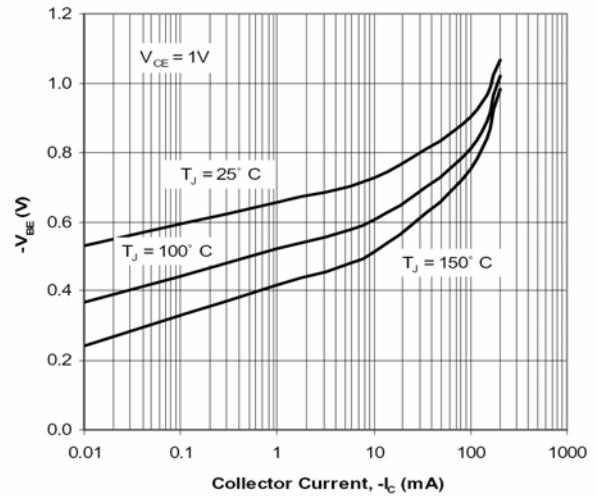
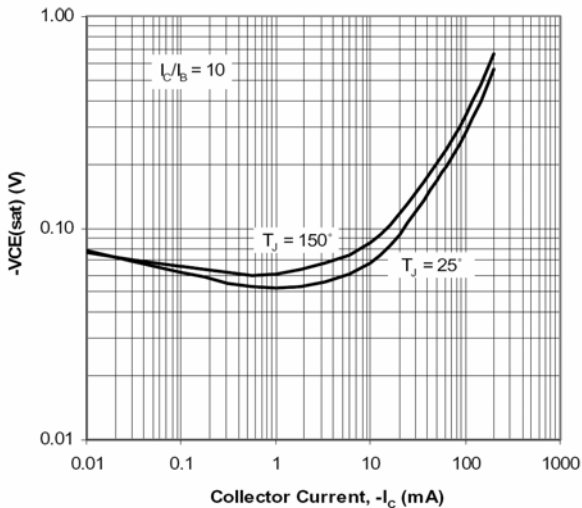
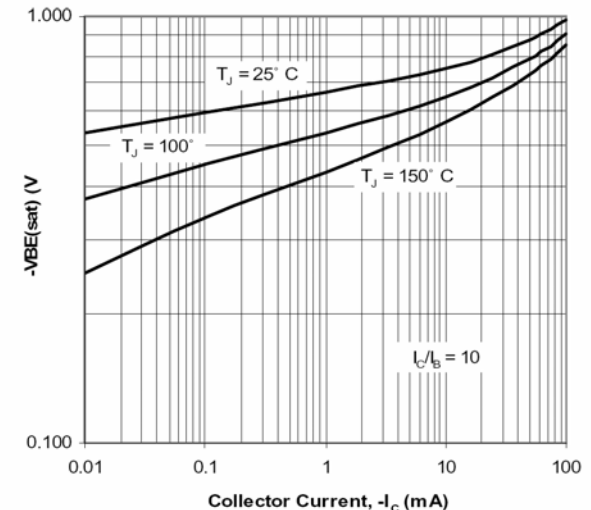
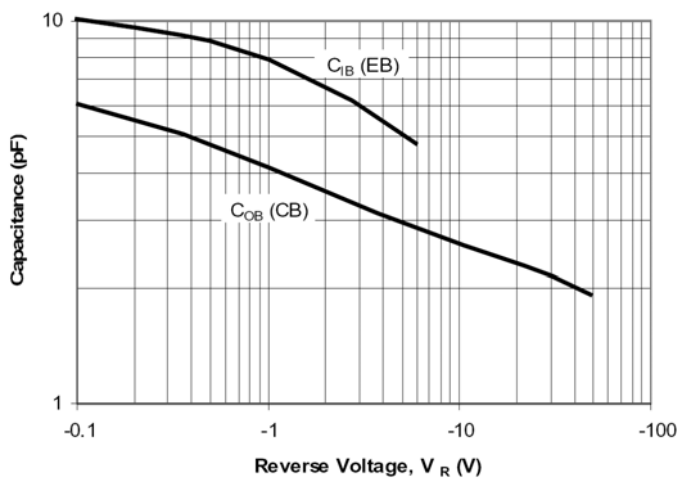
特性参数 CHARACTERISTIC	符号 SYMBOL	额定值 RATING	单位 UNIT
集电极-基极电压 Collector-Base Voltage	V_{CBO}	60	V
集电极-发射极电压 Collector-Emitter Voltage	V_{CEO}	40	V
发射极-基极电压 Emitter-Base Voltage	V_{EBO}	6	V
集电极电流 Collector Current	I_C	200	mA
集电极电流-峰值 Collector Current - Peak	I_{CM}	800	mA
集电极耗散功率 Collector Power Dissipation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

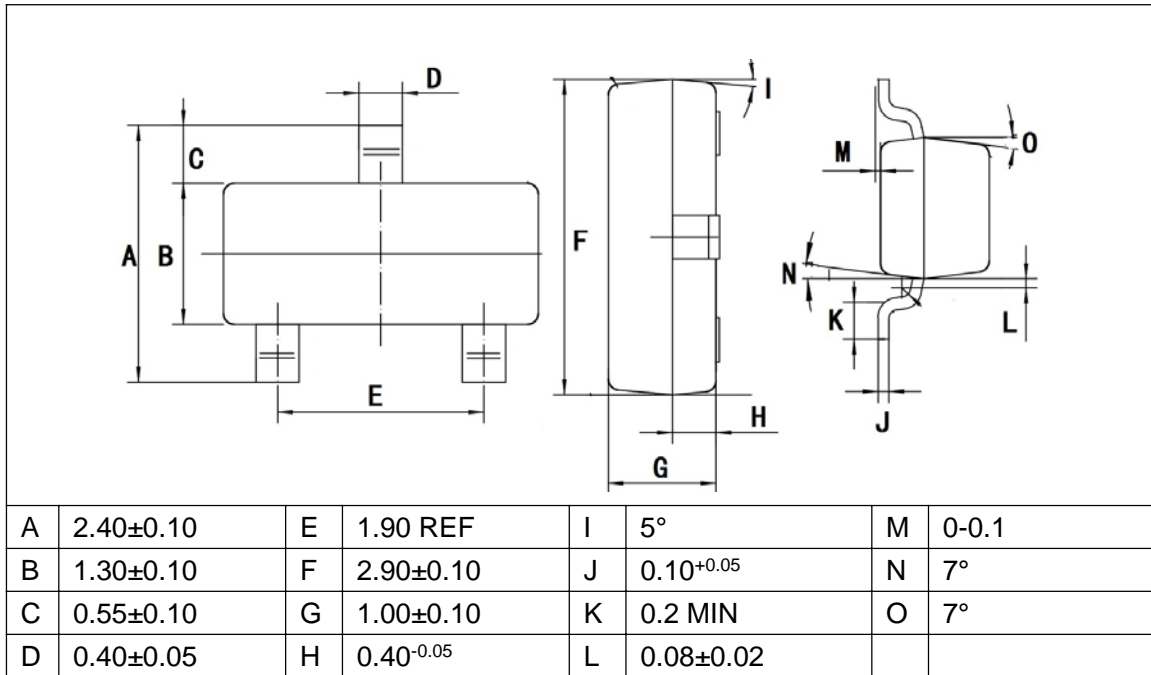
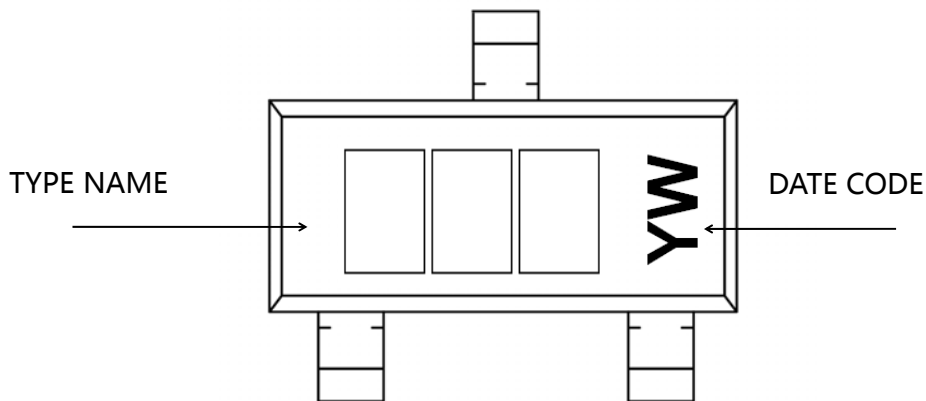
■ 电特性 ELECTRICAL CHARACTERISTICS

(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,			
下降时间 Fall Time	tf	IB1 = IB2 = 1.0 mA			50	

Note *: Pulse Test: Pulse Width < 300 us, Duty Cycle < 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