

## 帶阻三極管 Resistive Transistors

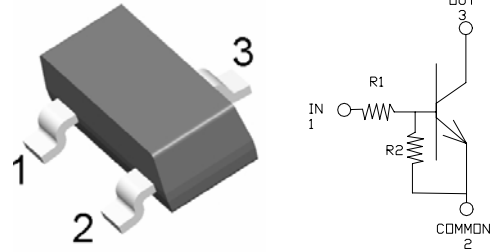
### Resistive Transistors 帶阻三極管

### NPN Silicon (FHRC116~FHRC122)

#### DESCRIPTION & FEATURES 概述及特点

With Built-in Bias Resistors 内部基极带阻  
 Simplify Circuit Design 简单的回路设计  
 Reduce a Quantity of Parts and Manufacturing Process  
 简化了外部元件及贴片过程

#### SOT-23



#### PIN ASSIGNMENT 引脚说明

PIN NAME 管脚符号	PIN NUMBER 引脚序号	FUNCTION 功能
	SOT-23	
IN	1	Input
COMMON	2	Common
OUT	3	Output

#### MAXIMUM RATINGS(T<sub>a</sub>=25°C) 最大额定值

CHARACTERISTIC 特性参数	Symbol 符号	Rating 额定值	Unit 单位
Output Voltage 输出电压	V <sub>O</sub>	50	V
Input Voltage 输入电压	V <sub>I</sub>	FHRC116	10~-5
		FHRC117	12~-10
		FHRC118	12~-5
		FHRC119	20~-7
		FHRC120	30~-10
		FHRC121	40~-15
		FHRC122	40~-10
Output Current 输出电流	I <sub>O</sub>	100	mA
Power Dissipation 耗散功率	P <sub>D</sub>	200	mW
Junction Temperature 结温	T <sub>J</sub>	150	°C
Storage Temperature Range 储存温度	T <sub>STG</sub>	-55~150	°C

#### DEVICE MARKING 打标

TYPE 型号	FHRC116	FHRC117	FHRC118	FHRC119
MARK 打标	N2	N4	N5	43
TYPE 型号	FHRC120	FHRC121	FHRC122	
MARK 打标	N7	N8	N9	

#### ELECTRICAL CHARACTERISTICS 电特性

(T<sub>A</sub>=25°C unless otherwise noted 如无特殊说明, 温度为 25°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
Output Cutoff Current 输出截止电流	I <sub>O(OFF)</sub>	V <sub>O</sub> =50V, V <sub>I</sub> =0	-	-	500	nA
Transition Frequency 特征频率	f <sub>T</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =10mA	-	200	-	MHz
Output Voltage 输出电压	V <sub>O(ON)</sub>	I <sub>O</sub> =10mA, I <sub>I</sub> =0.5mA	FHRC116	-	0.3	V
			FHRC117	-	0.1	
			FHRC118	-	-	
			FHRC119	-	0.1	
			FHRC120	-	0.1	
			FHRC121	-	0.1	
		FHRC122	I <sub>O</sub> =5mA, I <sub>I</sub> =0.25mA	-	0.1	
Input Voltage (OFF) 输入电压(OFF)	V <sub>I(OFF)</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =0.1mA	FHRC116	0.3	0.63	V
			FHRC117	0.5	1.15	
			FHRC118	0.3	0.67	
			FHRC119	0.3	0.82	
			FHRC120	0.8	1.68	

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	FHRC121			1	3.09	-	
	FHRC122			0.5	1.17	-	
Input Voltage (ON) 输入电压(ON)	FHRC116	$V_{I(ON)}$	$V_O=0.3V, I_O=20mA$	-	0.98	3.0	V
	FHRC117		$V_O=0.3V, I_O=20mA$	-	1.83	3	
	FHRC118		$V_O=0.3V, I_O=20mA$	-	1.22	3	
	FHRC119		$V_O=0.3V, I_O=20mA$	-	1.76	2.5	
	FHRC120		$V_O=0.3V, I_O=2mA$	-	2.0	3.0	
	FHRC121		$V_O=0.3V, I_O=2mA$	-	3.9	5	
	FHRC122		$V_O=0.3V, I_O=1mA$	-	1.64	3	
Input Current 输入电流	FHRC116	$I_i$	$V_i=5V$	-	-	7.2	mA
	FHRC117			-	-	3.8	
	FHRC118			-	-	3.8	
	FHRC119			-	-	1.8	
	FHRC120			-	-	0.88	
	FHRC121			-	-	0.16	
	FHRC122			-	-	0.15	
DC Current Gain 直流电流增益	FHRC116	$G_i$	$V_o=5V, I_o=5mA$	33	-	-	-
	FHRC117		$V_o=5V, I_o=20mA$	20	-	-	
	FHRC118		$V_o=5V, I_o=10mA$	33	-	-	
	FHRC119		$V_o=5V, I_o=10mA$	30	-	-	
	FHRC120		$V_o=5V, I_o=10mA$	24	-	-	
	FHRC121		$V_o=5V, I_o=5mA$	33	-	-	
	FHRC122		$V_o=5V, I_o=5mA$	62	-	-	
Input Resistance 输入电阻	FHRC116	R1		0.7	1	1.3	k $\Omega$
	FHRC117			1.54	2.2	2.86	
	FHRC118			1.54	2.2	2.86	
	FHRC119			3.29	4.7	6.11	
	FHRC120			7	10	13	
	FHRC121			32.9	47	61.1	
	FHRC122			70	100	130	
Resistance Ratio 电阻比	FHRC116	R2/R1		8	10	12	-
	FHRC117			0.8	1	1.2	
	FHRC118			3.6	4.5	5.5	
	FHRC119			1.7	2.1	2.6	
	FHRC120			0.37	0.47	0.57	
	FHRC121			0.17	0.21	0.26	
	FHRC122			0.8	1	1.2	