

# 8050

### FEATURES

Power dissipation

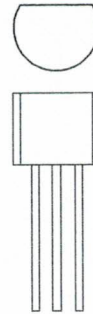
$$P_{CM} : 0.625 \text{ W ( } T_{amb}=25^{\circ}\text{C )}$$

Collector current

$$I_{CM} : 0.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 40 \text{ V}$$



### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified )

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100 \mu\text{A}$ , $I_E = 0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 0.1 \text{ mA}$ , $I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100 \mu\text{A}$ , $I_C = 0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 40 \text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE} = 20 \text{ V}$ , $I_B = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5 \text{ V}$ , $I_C = 0$			0.1	$\mu\text{A}$
DC current gain(note)	$H_{FE(1)}$	$V_{CE} = 1 \text{ V}$ , $I_C = 50\text{mA}$	85		300	
	$H_{FE(2)}$	$V_{CE} = 1 \text{ V}$ , $I_C = 500\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}$ , $I_B = 50 \text{ mA}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}$ , $I_B = 50 \text{ mA}$			1.2	V
Base-emitter voltage	$V_{BE}$	$I_E = 100\text{mA}$			1.4	V
Transition frequency	$f_T$	$V_{CE} = 6 \text{ V}$ , $I_C = 20\text{mA}$ $f = 30\text{MHz}$	150			MHz

### CLASSIFICATION OF $H_{FE(1)}$

Rank	B	C	D
Range	85-160	120-200	160-300

# 8550

## FEATURES

Power dissipation

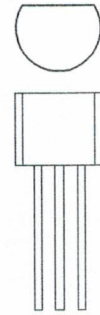
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Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 0.1 \text{ mA}$ , $I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100 \mu\text{A}$ , $I_C = 0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 40 \text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE} = 20 \text{ V}$ , $I_B = 0$			0.2	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 3 \text{ V}$ , $I_C = 0$			0.1	$\mu\text{A}$
DC current gain(note)	$H_{FE(1)}$	$V_{CE} = 1 \text{ V}$ , $I_C = 50 \text{ mA}$	85		300	
	$H_{FE(2)}$	$V_{CE} = 1 \text{ V}$ , $I_C = 500 \text{ mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500 \text{ mA}$ , $I_B = 50 \text{ mA}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500 \text{ mA}$ , $I_B = 50 \text{ mA}$			1.2	V
Base-emitter voltage	$V_{BE}$	$I_E = 100 \text{ mA}$			1.4	V
Transition frequency	$f_T$	$V_{CE} = 6 \text{ V}$ , $I_C = 20 \text{ mA}$ $f = 30 \text{ MHz}$	150			MHz

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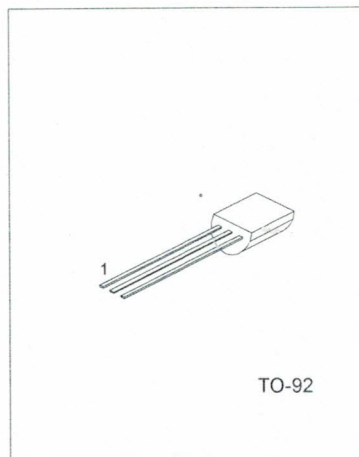
UTC 9012

PNP EPITAXIAL SILICON TRANSISTOR

1W OUTPUT AMPLIFIER OF  
POTABLE RADIOS IN CLASS B  
PUSH-PULL OPERATION

FEATURES

- \*High total power dissipation. (625mW)
- \*High collector current. (-500mA)
- \*Excellent hFE linearity
- \*Complementary to UTC 9013



TO-92

1:EMITTER 2:BASE 3:COLLECTOR

ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V <sub>CB0</sub>	-40	V
Collector-emitter voltage	V <sub>CEO</sub>	-20	V
Emitter-base voltage	V <sub>EB0</sub>	-5	V
Collector current	I <sub>c</sub>	-500	mA
Collector dissipation	P <sub>c</sub>	625	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

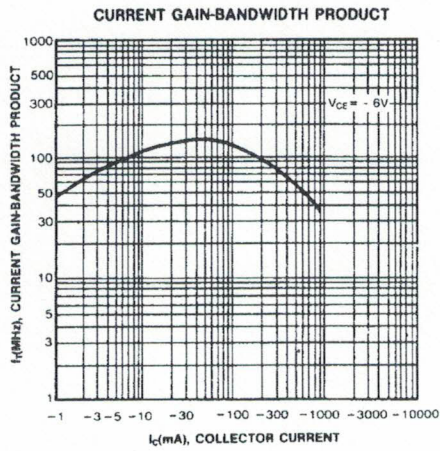
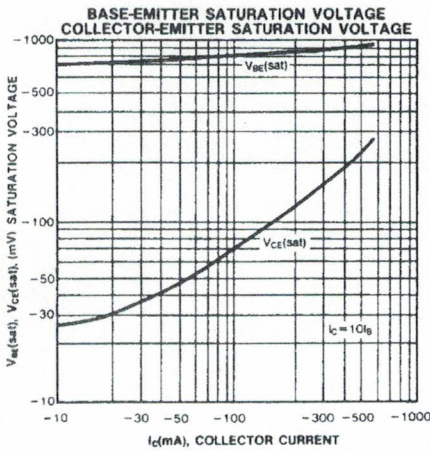
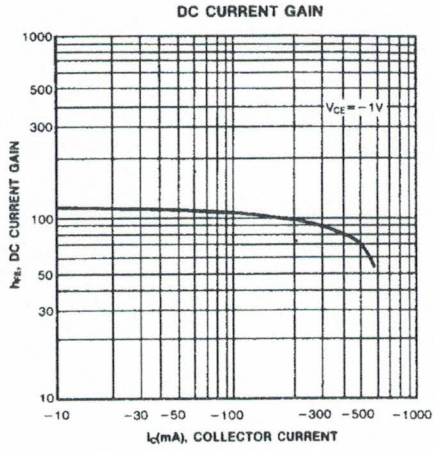
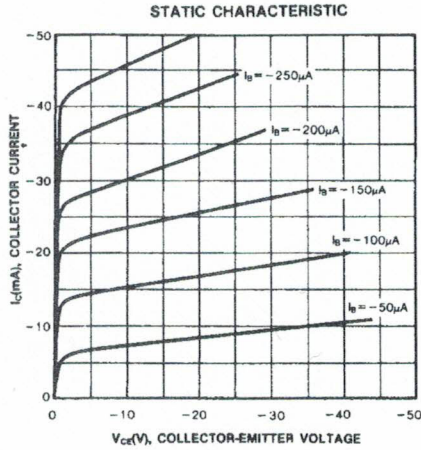
ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV <sub>CB0</sub>	I <sub>c</sub> =-100μA, I <sub>E</sub> =0	-40			V
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	I <sub>c</sub> =-1mA, I <sub>B</sub> =0	-20			V
Emitter-base breakdown voltage	BV <sub>EB0</sub>	I <sub>E</sub> =-100μA, I <sub>c</sub> =0	-5			V
Collector cutoff current	I <sub>CB0</sub>	V <sub>CB</sub> =-25V, I <sub>E</sub> =0			-100	nA
Emitter cutoff current	I <sub>EB0</sub>	V <sub>EB</sub> =-3V, I <sub>c</sub> =0			-100	nA
DC current gain	hFE1	V <sub>CE</sub> =-1V, I <sub>c</sub> =-50mA	64	120	300	
	hFE2	V <sub>CE</sub> =-1V, I <sub>c</sub> =-500mA	40	90		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> =-500mA, I <sub>B</sub> =-50mA		-0.18	-0.6	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>c</sub> =-500mA, I <sub>B</sub> =-50mA		-0.95	-1.2	V
Base-emitter on voltage	V <sub>BE(on)</sub>	V <sub>CE</sub> =-1V, I <sub>c</sub> =-10mA	-0.6	-0.67	-0.7	V

CLASSIFICATION OF hFE1

RANK	D	E	F	G	H	I
RANGE	64-91	78-112	96-135	112-166	144-202	190-300





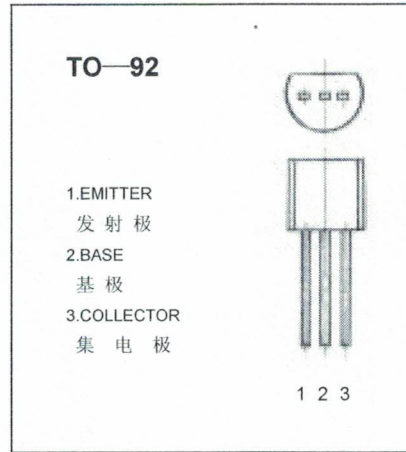
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# 9013

## FEATURES

特 征

- Power dissipation (最大耗散功率)  
 $P_{CM} : 0.625 \text{ W (} T_{amb}=25^{\circ}\text{C)}$
- Collector current (最大集电极电流)  
 $I_{CM} : 0.5 \text{ A}$
- Collector-base voltage (集电极--基极击穿电压)  
 $V_{(BR)CBO} : 45 \text{ V}$



## ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

电 特 性 (环境温度 除非另有规定)

Parameter 参 数	Symbol 符 号	Test conditions 测 试 条 件	MIN 最小值	TYP 典型值	MAX 最大值	UNIT 单 位
Collector-base breakdown voltage 集电极--基极击穿电压	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	45			V
Collector-emitter breakdown voltage 集电极--发射极击穿电压	$V_{(BR)CEO}$	$I_C=0.1\text{mA}, I_B=0$	25			V
Emitter-base breakdown voltage 发射极--基极击穿电压	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current 集电极--基极截止电流	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$			0.1	$\mu\text{A}$
Collector cut-off current 集电极--发射极截止电流	$I_{CEO}$	$V_{CE}=20\text{V}, I_B=0$			0.1	$\mu\text{A}$
Emitter cut-off current 发射极--基极截止电流	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain(note) 直 流 电 流 增 益	$H_{FE(1)}$	$V_{CE}=1\text{V}, I_C=50\text{mA}$	64		300	
	$H_{FE(2)}$	$V_{CE}=1\text{V}, I_C=500\text{mA}$	40			
Collector-emitter saturation voltage 集电极--发射极饱和压降	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.6	V
Base-emitter saturation voltage 基极--发射极饱和压降	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.2	V
Base-emitter voltage 基极--发射极正向电压	$V_{BE}$	$I_E=100\text{mA}$			1.4	V
Transition frequency 特 征 频 率	$f_T$	$V_{CE}=6\text{V}, I_C=20\text{mA}$ $f=30\text{MHz}$	150			MHz

## CLASSIFICATION OF $H_{FE(1)}$ (分类)

Rank 档 次	D	E	F	G	H	I
Range 范 围	64-91	78-112	96-135	112-166	144-220	190-300