

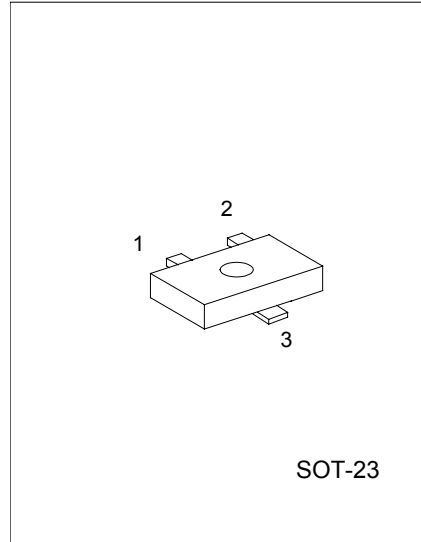
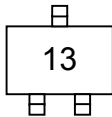
# UTC MMBT9013 NPN EPITAXIAL SILICON TRANSISTOR

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 MMBT9012

## MARKING



1: EMITTER 2: BASE 3: COLLECTOR

\*Pb-free plating product number: MMBT9013L

## 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>	225	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

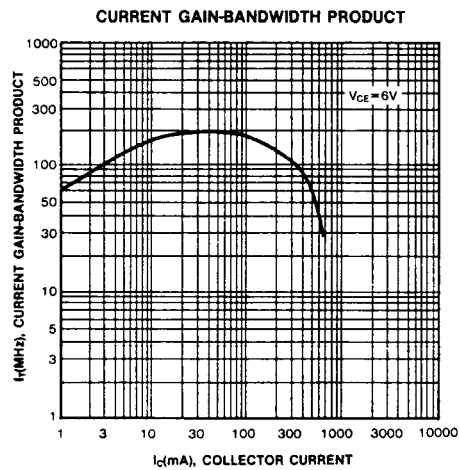
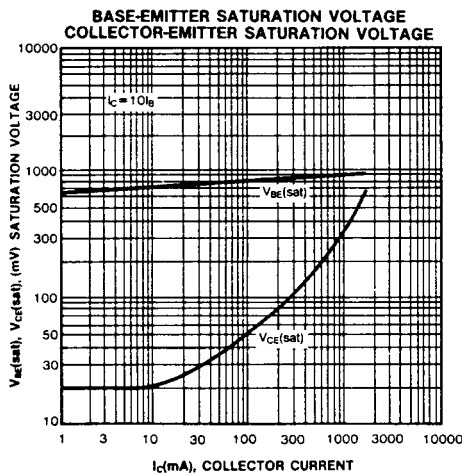
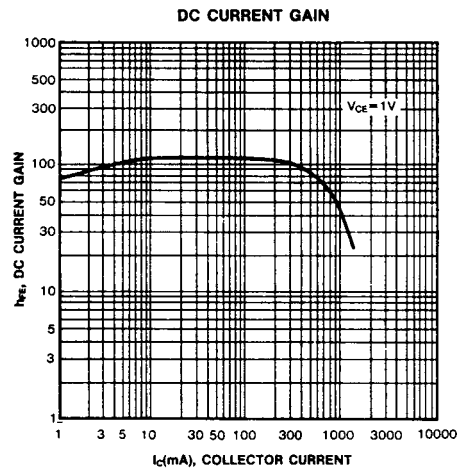
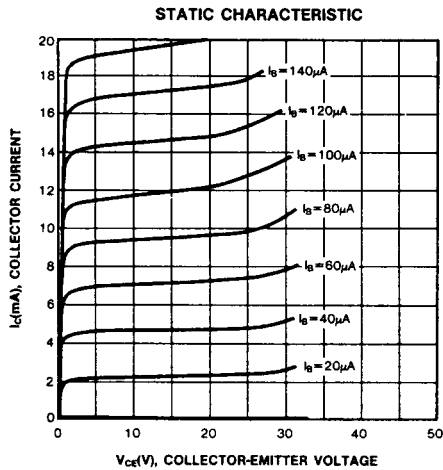
## ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

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	120		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> =500mA, I <sub>B</sub> =50mA		0.16	0.6	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>c</sub> =500mA, I <sub>B</sub> =50mA		0.91	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

# UTC MMBT9013 NPN EPITAXIAL SILICON TRANSISTOR

## CLASSIFICATION OF hFE1

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



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.