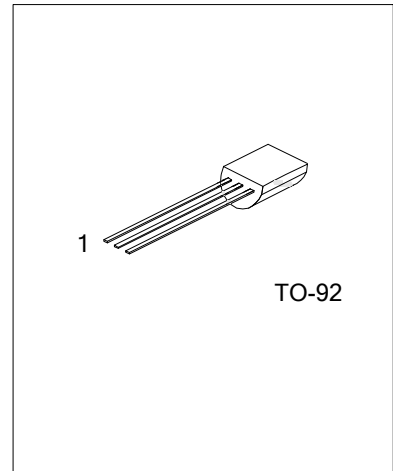




9013

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 h_{FE} linearity.
- * Complementary to UTC **9012**

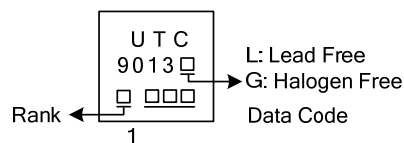
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
9013L-x-T92-B	9013G-x-T92-B	TO-92	E	B	C	Tape Box
9013L-x-T92-K	9013G-x-T92-K	TO-92	E	B	C	Bulk

Note: Pin assignment: E: Emitter B: Base C: Collector

<p>9013L-x-T92-B</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Free</p>	<p>(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) x: refer to Classification of h_{FE} (4) L: Lead Free, G: Halogen Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATING ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	500	mA
Collector dissipation	P_C	625	mW
Junction Temperature	T_J	125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

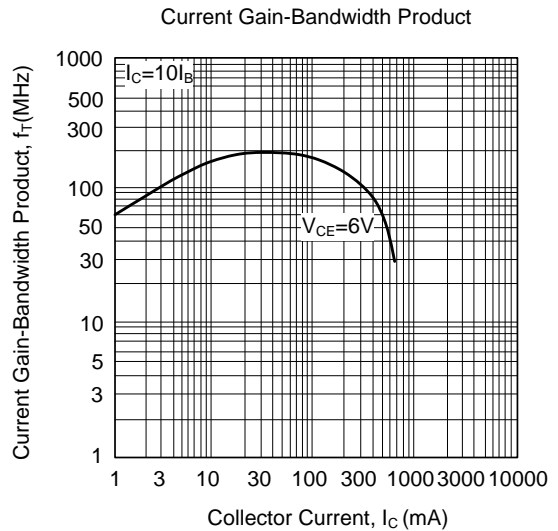
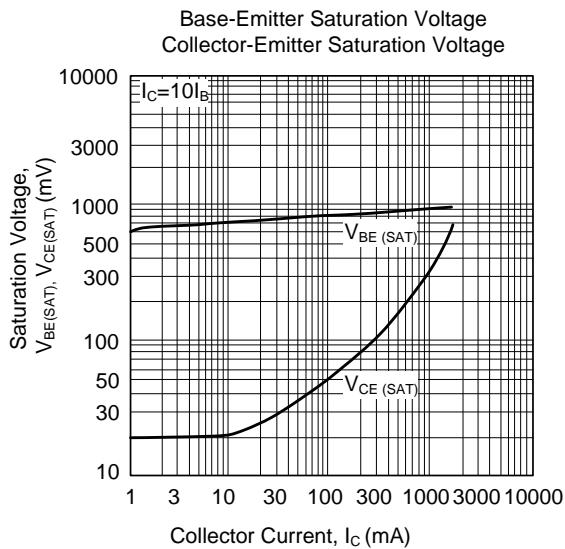
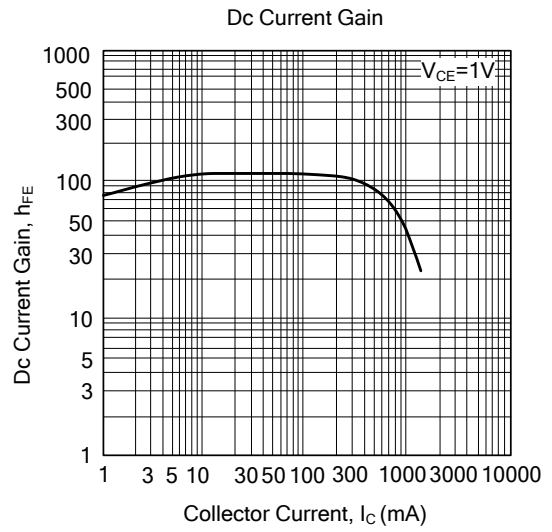
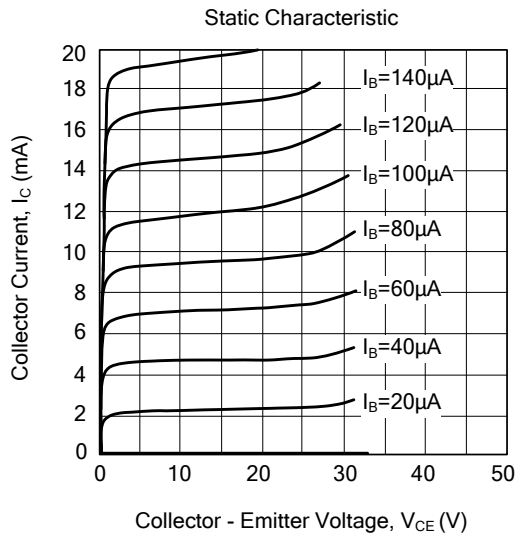
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV_{CBO}	$I_C=-100\mu\text{A}$, $I_E=0$	40			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C=1\text{mA}$, $I_B=0$	20			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E=100\mu\text{A}$, $I_C=0$	5			V
Collector cutoff current	I_{CBO}	$V_{CB}=25\text{V}$, $I_E=0$			100	nA
Emitter cutoff current	I_{EBO}	$V_{EB}=3\text{V}$, $I_C=0$			100	nA
DC current gain	h_{FE1}	$V_{CE}=1\text{V}$, $I_C=50\text{mA}$	64	120	300	
	h_{FE2}	$V_{CE}=1\text{V}$, $I_C=500\text{mA}$	40	120		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-500\text{mA}$, $I_B=-50\text{mA}$		0.16	0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-500\text{mA}$, $I_B=-50\text{mA}$		0.91	1.2	V
Base-emitter on voltage	$V_{BE(on)}$	$V_{CE}=1\text{V}$, $I_C=10\text{mA}$	0.6	0.67	0.7	V

■ CLASSIFICATION OF h_{FE1}

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

■ TYPICAL CHARACTERISTICS



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