



UNISONIC TECHNOLOGIES CO., LTD

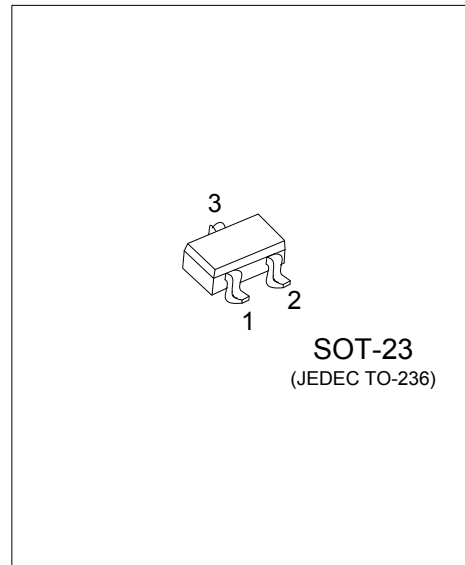
MMBT9012

PNP 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 MMBT9013



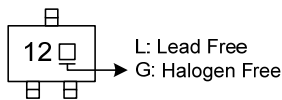
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT9012L-x-AE3-R	MMBT9012G-x-AE3-R	SOT-23	B	E	C	Tape Reel

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

<p>MMBT9012G-x-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23 (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



MMBT9012

PNP SILICON TRANSISTOR

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

PARAMETER	SYMBOL	RATING	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	225	mW
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

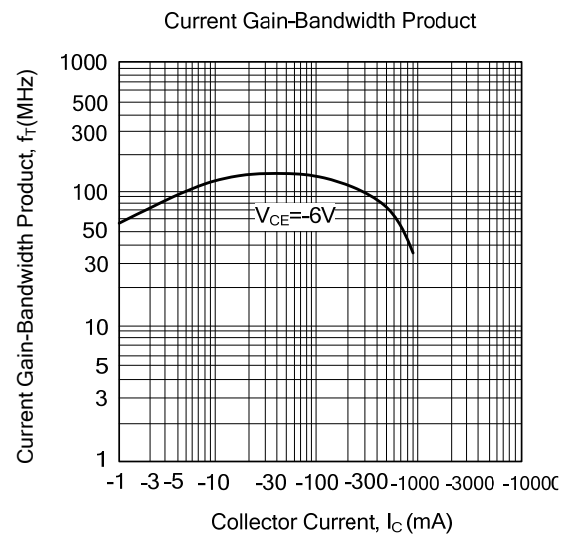
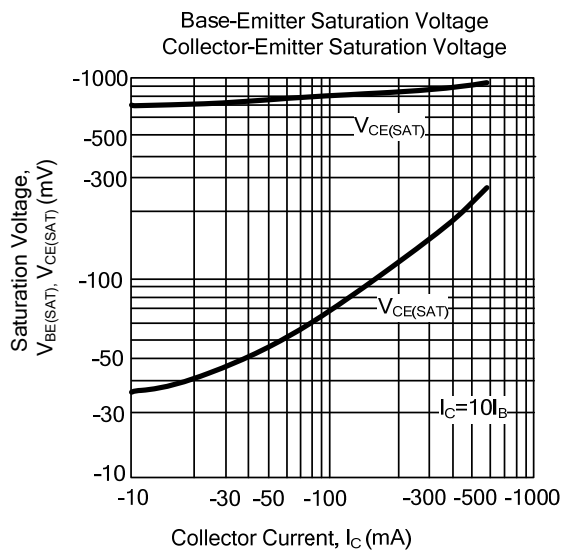
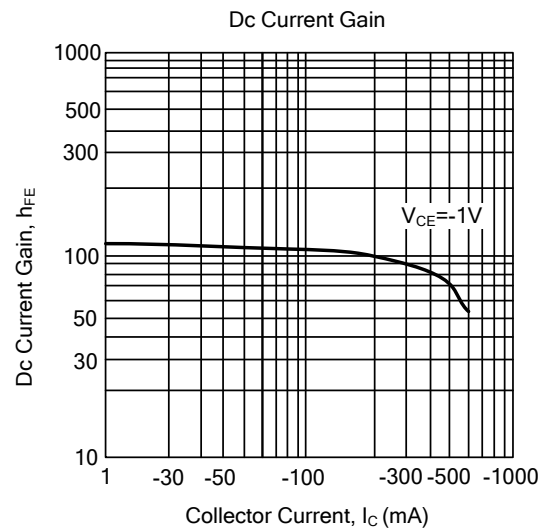
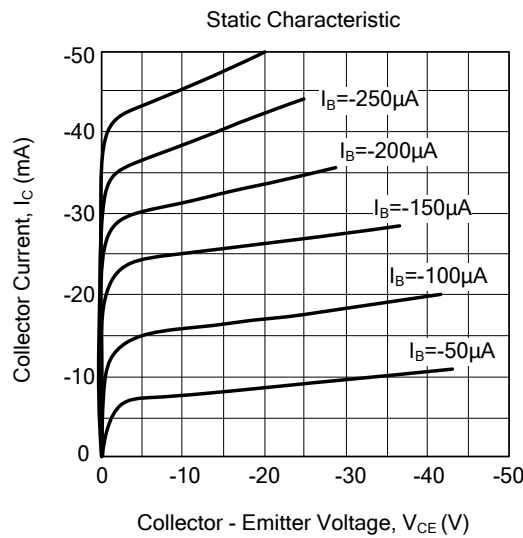
■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

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	90		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$		-0.18	-0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$		-0.95	-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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