



MMBT945

NPN SILICON TRANSISTOR

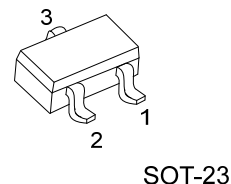
AUDIO FREQUENCY AMPLIFIER HIGH FREQUENCY OSC NPN TRANSISTOR

DESCRIPTION

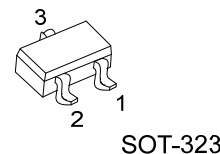
The UTC **MMBT945** is an audio frequency amplifier high frequency OSC NPN transistor.

FEATURES

- * Collector-Emitter Voltage: $BV_{CEO}=50V$
- * Collector Current up to 150mA
- * High h_{FE} Linearity
- * Complimentary to UTC MMBT733



SOT-23



SOT-323

ORDERING INFORMATION

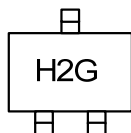
Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
MMBT945G-x-AE3-R	SOT-23	E	B	C	Tape Reel
MMBT945G-x-AL3-R	SOT-323	E	B	C	Tape Reel

MMBT945G-x-AE3-R

- (1) Packing Type
- (2) Package Type
- (3) Rank
- (4) Halogen Free

- (1) R: Tape Reel
- (2) AE3: SOT-23, AL3: SOT-323
- (3) x: refer to Classification of h_{FE}
- (4) G: Halogen Free

MARKING



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

PARAMETER	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Base Current	I_B	50	mA
Collector Dissipation($T_a=25^{\circ}\text{C}$)	P_C	200	mW
Junction Temperature	T_J	125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +125	$^{\circ}\text{C}$

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)

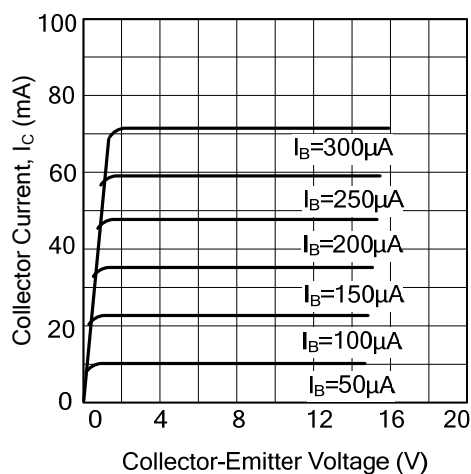
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$, $I_E=0$	60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=10\text{mA}$, $I_B=0$	50			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=40\text{V}$, $I_E=0$			100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=3\text{V}$, $I_C=0$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=6\text{V}$, $I_C=1\text{mA}$	90		600	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=100\text{mA}$, $I_B=10\text{mA}$		0.1	0.3	V
Current Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}$, $I_C=50\text{mA}$	100	190		MHz
Output Capacitance	C_{OB}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		2.0	3.0	pF
Noise Figure	NF	$I_C=-0.1\text{mA}$, $V_{CE}=6\text{V}$ $R_G=10\text{k}\Omega$, $f=100\text{Hz}$		4.0	6.0	dB

■ **CLASSIFICATION OF h_{FE}**

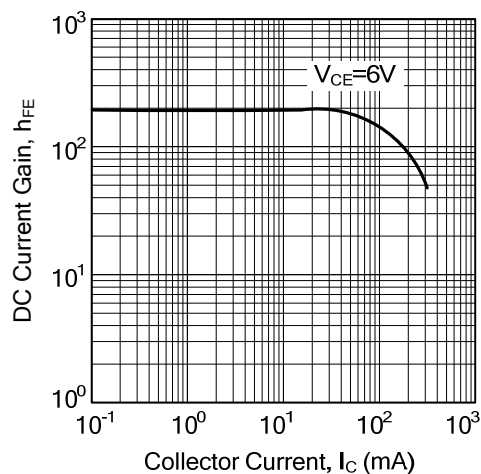
RANK	R	Q	P	K
RANGE	90-180	135-270	200-400	300-600

■ TYPICAL CHARACTERISTICS

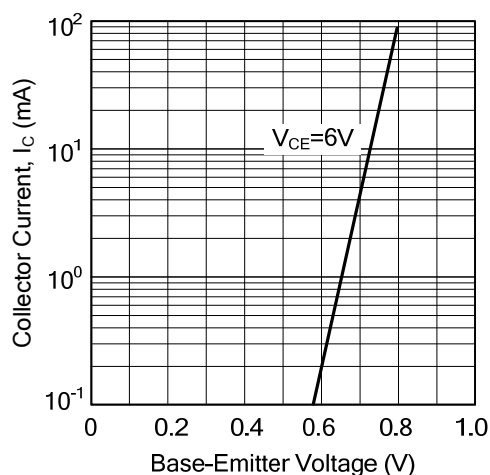
Static Characteristics



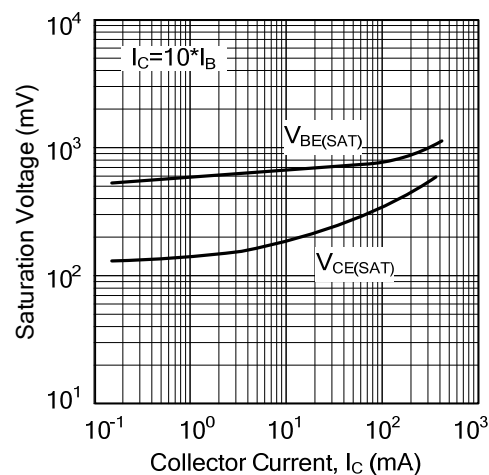
DC Current Gain



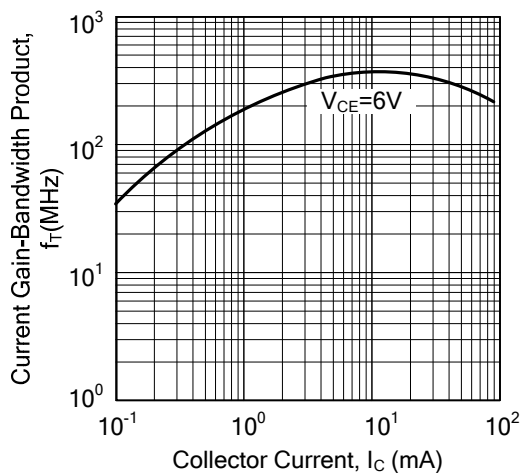
Base-Emitter on Voltage



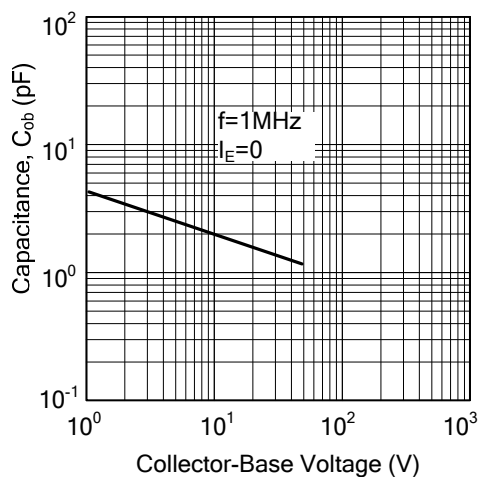
Saturation Voltage



Current Gain-Bandwidth Product



Collector Output Capacitance



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