



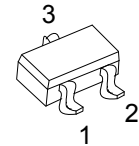
MMBT9014

NPN SILICON TRANSISTOR

PRE-AMPLIFIER, LOW LEVEL & LOW NOISE

■ FEATURES

- * High Total Power Dissipation. (450mW)
- * Excellent h_{FE} Linearity.
- * Complementary to UTC MMBT9015



SOT-23
(JEDEC TO-236)

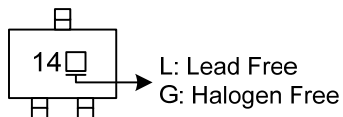
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT9014L-x-AE3-R	MMBT9014G-x-AE3-R	SOT-23	B	E	C	Tape Reel

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

MMBT9014G-x-AE3-R	(1)Packing Type (2)Package Type (3)Rank (4)Green Package	(1) R: Tape Reel (2) AE3: SOT-23 (3) x: refer to Classification of h_{FE} (4) G: Halogen Free and Lead Free, L: Lead Free
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■ MARKING



MMBT9014

NPN SILICON TRANSISTOR

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CEO}	45	V
Collector-Base Voltage	V_{CBO}	50	V
Emitter Base Voltage	V_{EBO}	5	V
Base Current	I_B	100	mA
Collector Current	I_C	100	mA
Collector dissipation	P_C	225	mW
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
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.

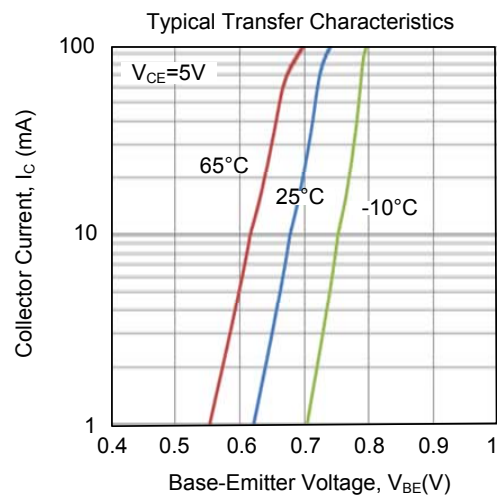
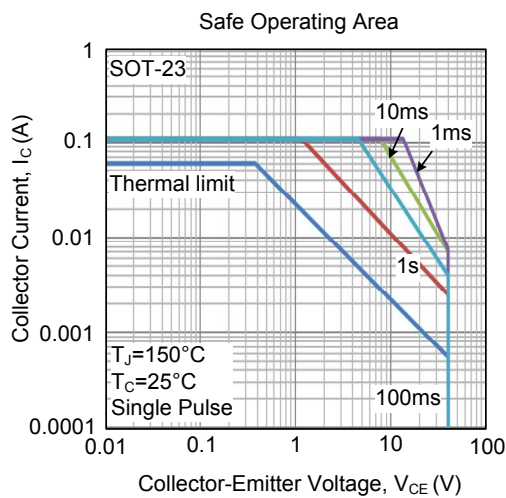
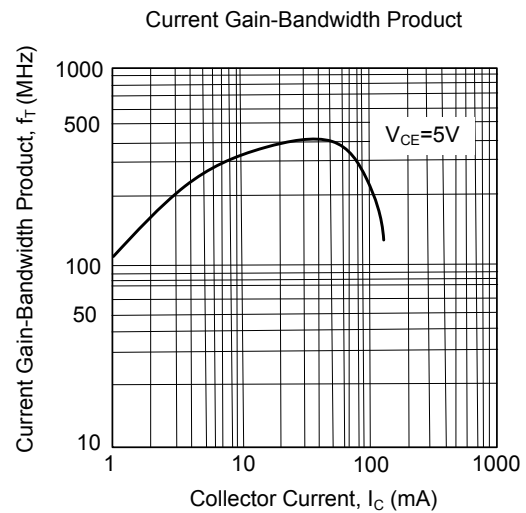
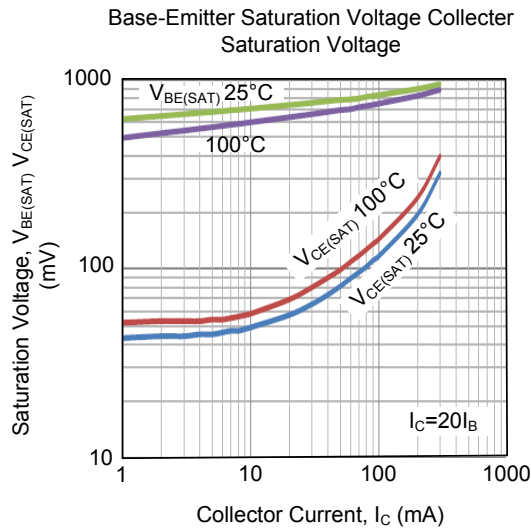
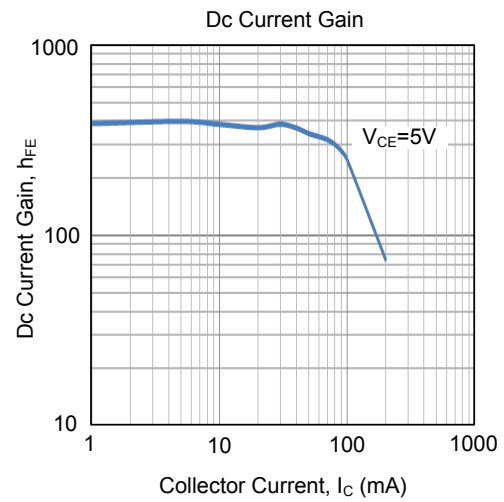
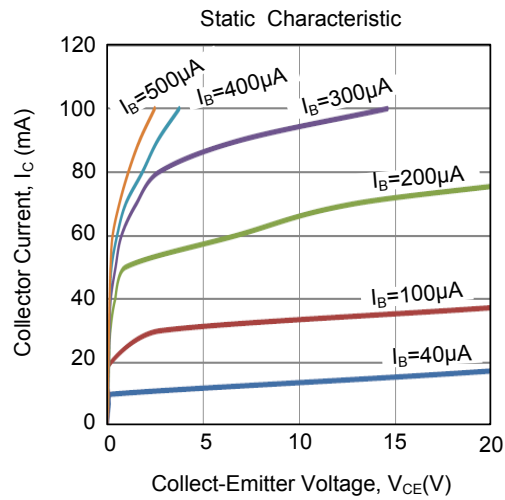
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Voltage	V_{CEO}	$I_C=100\mu\text{A}$, $I_E=0$	50			V
Collector-Base Voltage	V_{CBO}	$I_C=1\text{mA}$, $I_B=0$	45			V
Emitter Base Voltage	V_{EBO}	$I_E=100\mu\text{A}$, $I_C=0$	5			V
Collector cutoff current	I_{CBO}	$V_{CB}=50\text{V}$, $I_E=0$			50	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}$, $I_C=1\text{mA}$	60	280	1000	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=100\text{mA}$, $I_B=5\text{mA}$		0.14	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=100\text{mA}$, $I_B=5\text{mA}$		0.84	1.0	V
Base-emitter on voltage	$V_{BE(ON)}$	$V_{CE}=5\text{V}$, $I_C=2\text{mA}$	0.58	0.63	0.7	V
Current-Gain-Bandwidth Product	f_T	$V_{CE}=5\text{V}$, $I_C=10\text{mA}$	150	270		MHz
Output Capacitance	C_{OB}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		2.2	3.5	pF
Noise Figure	NF	$V_{CE}=5\text{V}$, $I_C=0.2\text{mA}$, $f=1\text{KHz}$, $R_S=2\text{K}\Omega$		0.9	10	dB

■ CLASSIFICATION OF h_{FE}

RANK	A	B	C	D
RANGE	60-150	100-300	200-600	400-1000

TYPICAL CHARACTERISTICS



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