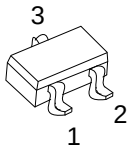
MMBT9014

NPN SILICON TRANSISTOR

PRE-AMPLIFIER, LOW LEVEL & LOW NOISE



SOT-23
(JEDEC TO-236)

■ FEATURES

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

■ ORDERING INFORMATION

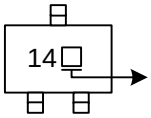
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT9014L-x-AE3-R	MMBT9014G-x-AE3-R	SOT-23	B	E	C	Tape Reel

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

MMBT9014G-x-AE3-R

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

■ MARKING



L: Lead Free
G: Halogen Free

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°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	°C
Storage Temperature	T_{STG}	-55 ~ +150	°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°C, unless otherwise specified)

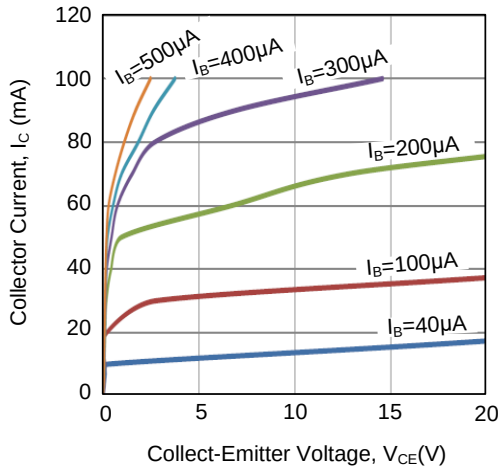
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Voltage	V_{CEO}	I_C=100μA, I_E=0	50			V
Collector-Base Voltage	V_{CBO}	I_C=1mA, I_B=0	45			V
Emitter Base Voltage	V_{EBO}	I_E=100μA, I_C=0	5			V
Collector cutoff current	I_{CBO}	V_{CB}=50V, I_E=0			50	nA
Emitter Cutoff Current	I_{EBO}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

■ CLASSIFICATION OF h_{FE}

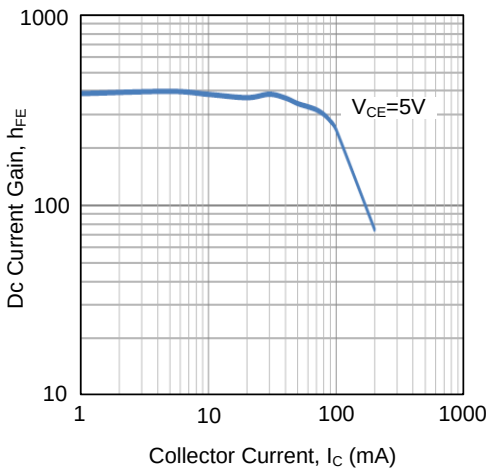
RANK	A	B	C	D
RANGE	60-150	100-300	200-600	400-1000

■ TYPICAL CHARACTERISTICS

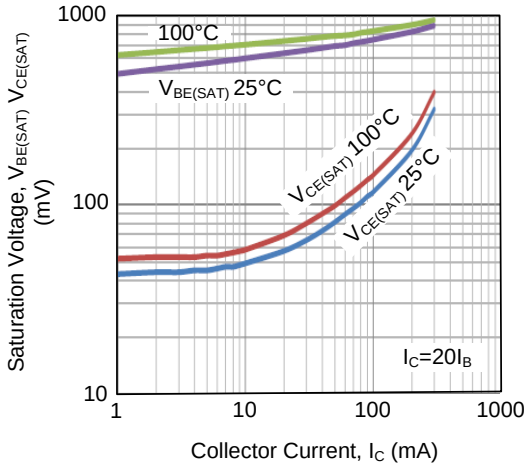
Static Characteristic



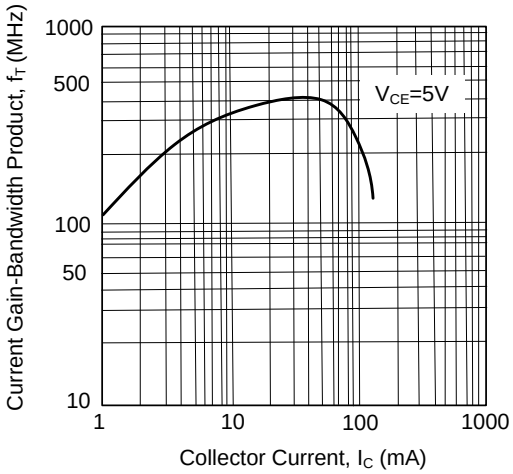
Dc Current Gain



Base-Emitter Saturation Voltage Collecter Saturation Voltage



Current Gain-Bandwidth Product



Safe Operating Area