



# FUKUCOM COMPANY LTD.

## 福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,  
KWUN TONG, KOWLOON, HONG KONG.

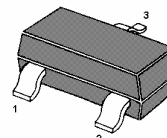
TEL: 852-2790 0314 FAX: 852-2790 0206

### MMBT9014

#### NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications

As complementary types the PNP transistor MMBT9015 is recommended.



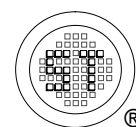
1.BASE 2.EMITTER 3.COLLECTOR  
SOT-23 Plastic Package

#### Absolute Maximum Ratings (T<sub>a</sub> = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V <sub>CB0</sub>	50	V
Collector Emitter Voltage	V <sub>CE0</sub>	45	V
Emitter Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	100	mA
Power Dissipation	P <sub>tot</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>s</sub>	- 55 to + 150	°C

#### Characteristics at T<sub>a</sub> = 25 °C

Parameter	Symbol	Min.	Max.	Unit	
DC Current Gain at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 1 mA	MMBT9014B	h <sub>FE</sub>	110	220	-
	MMBT9014C	h <sub>FE</sub>	200	450	-
	MMBT9014D	h <sub>FE</sub>	420	800	-
Collector Cutoff Current at V <sub>CB</sub> = 50 V	I <sub>CB0</sub>	-	50	nA	
Emitter Cutoff Current at V <sub>EB</sub> = 5 V	I <sub>EBO</sub>	-	50	nA	
Collector Base Breakdown Voltage at I <sub>C</sub> = 100 μA	V <sub>(BR)CB0</sub>	50	-	V	
Collector Emitter Breakdown Voltage at I <sub>C</sub> = 1 mA	V <sub>(BR)CE0</sub>	45	-	V	
Emitter Base Breakdown Voltage at I <sub>E</sub> = 100 μA	V <sub>(BR)EBO</sub>	5	-	V	
Collector Emitter Saturation Voltage at I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA	V <sub>CE(sat)</sub>	-	0.6	V	
Base Emitter Saturation Voltage at I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA	V <sub>BE(sat)</sub>	-	1	V	
Gain Bandwidth Product at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA	f <sub>T</sub>	100	-	MHz	
Output Capacitance at V <sub>CB</sub> = 10 V, f = 1 MHz	C <sub>OB</sub>	-	6	pF	
Noise Figure at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 200 μA, f = 1 KHz, R <sub>G</sub> = 2 KΩ	NF	-	10	dB	



Dated : 13/08/2007



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## MMBT9014

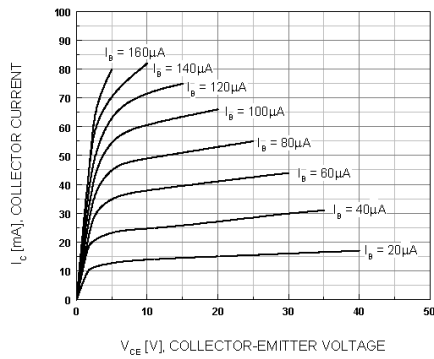


Figure 1. Static Characteristic

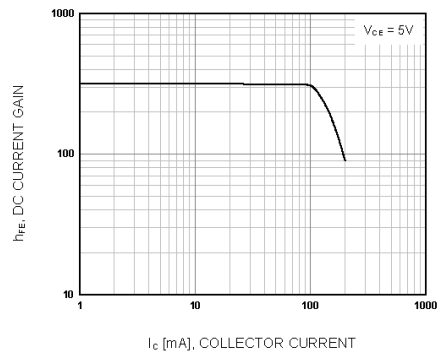


Figure 2. DC current Gain

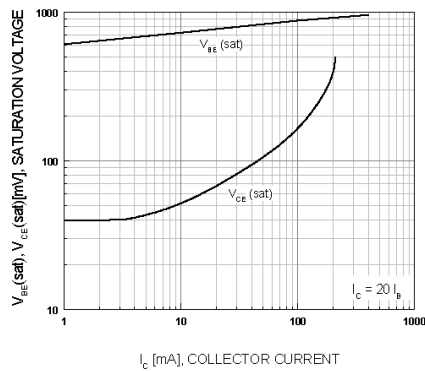


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

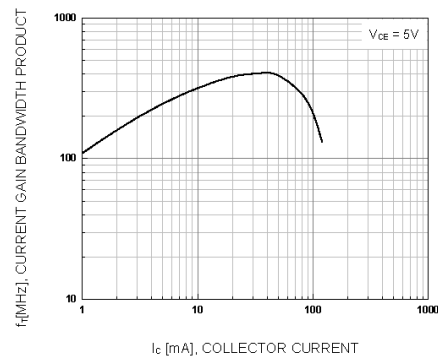


Figure 4. Current Gain Bandwidth Product

