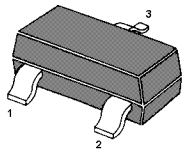
MMBT9014

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_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	50	V
Collector Emitter Voltage	V_{CEO}	45	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{Stg}	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = 5 V, I_C = 1 mA	MMBT9014B	h_{FE}	110	220	-
	MMBT9014C	h_{FE}	200	450	-
	MMBT9014D	h_{FE}	420	800	-
Collector Base Cutoff Current at V_{CB} = 50 V		I_{CBO}	-	50	nA
Emitter Base Cutoff Current at V_{EB} = 5 V		I_{EBO}	-	50	nA
Collector Base Breakdown Voltage at I_C = 100 µA		$V_{(BR)CBO}$	50	-	V
Collector Emitter Breakdown Voltage at I_C = 1 mA		$V_{(BR)CEO}$	45	-	V
Emitter Base Breakdown Voltage at I_E = 100 µA		$V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at I_C = 100 mA, I_B = 5 mA		$V_{CE(sat)}$	-	0.6	V
Base Emitter Saturation Voltage at I_C = 100 mA, I_B = 5 mA		$V_{BE(sat)}$	-	1	V
Gain Bandwidth Product at V_{CE} = 5 V, I_C = 10 mA		f_T	100	-	MHz
Output Capacitance at V_{CB} = 10 V, f = 1 MHz		C_{OB}	-	6	pF
Noise Figure at V_{CE} = 5 V, I_C = 200 µA, f = 1 KHz, R_G = 2 KΩ		NF	-	10	dB

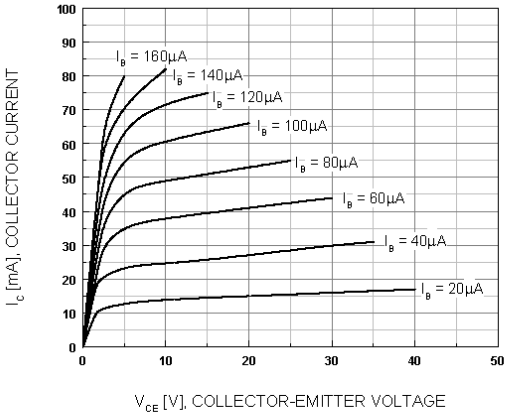


Figure 1. Static Characteristic

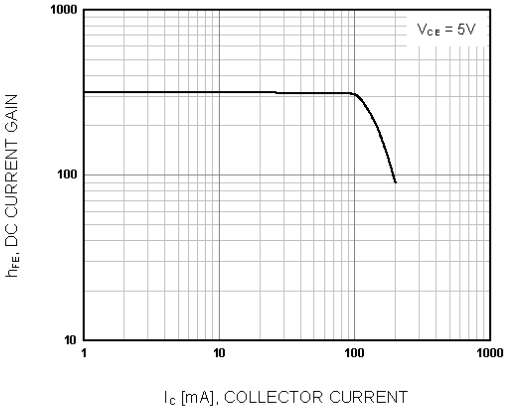


Figure 2. DC current Gain

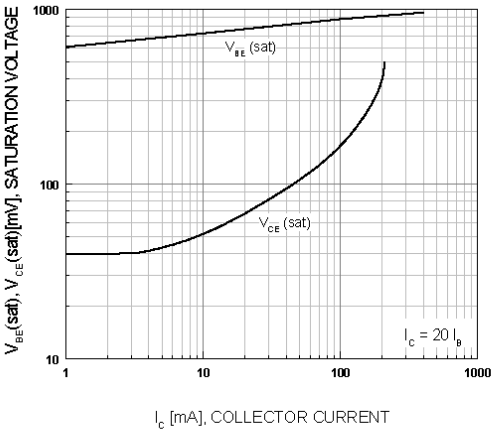


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

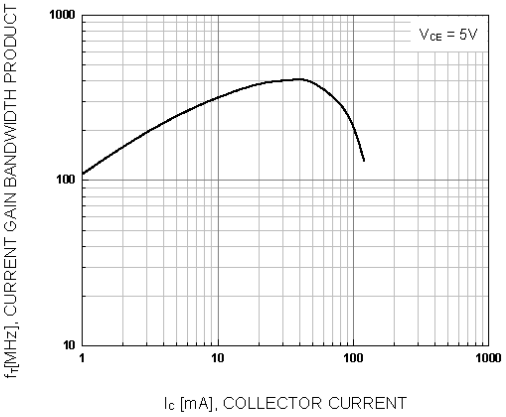


Figure 4. Current Gain Bandwidth Product