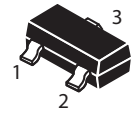
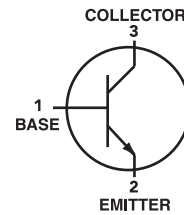


NPN General Purpose Transistors

 Lead(Pb)-Free



SOT-23

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	45	Vdc
Collector-Base Voltage	V_{CBO}	50	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current-Continuous	I_C	100	mA

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) $T_A=25^{\circ}\text{C}$	P_D	200	mW
Derate above 25°C		1.6	mW/ $^{\circ}\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Junction and Storage, Temperature	T_J, T_{stg}	-55 to +150	$^{\circ}\text{C}$

DEVICE MARKING

S9014=J6

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
-----------------	--------	-----	-----	------

OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C=0.1\text{mA}, I_B=0$)	$V_{(BR)CEO}$	45	-	Vdc
Collector-Base Breakdown Voltage ($I_C=100\mu\text{A}, I_E=0$)	$V_{(BR)CBO}$	50	-	Vdc
Emitter-Base Breakdown Voltage ($I_E=100\mu\text{A}, I_C=0$)	$V_{(BR)EBO}$	5.0	-	Vdc
Collector Cutoff Current ($V_{CE}=45\text{Vdc}, I_E=0$)	I_{CEO}	-	0.1	μA
Collector Cutoff Current ($V_{CB}=50\text{Vdc}, I_E=0$)	I_{CBO}	-	0.1	μA
Emitter Cutoff Current ($V_{EB}=5.0\text{Vdc}, I_C=0$)	I_{EBO}	-	0.1	μA

1.FR-5=1.0 x 0.75 x 0.062 in

S9014**ELECTRICAL CHARACTERISTICS** ($T_A=25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristics	Symbol	Min	Max	Unit
-----------------	--------	-----	-----	------

DC CHARACTERISTICS

DC Current Gain ($I_C=1.0\text{ mA}$, $V_{CE}=5.0\text{ V}$)	h_{FE}	200	1000	-
Collector-Emitter Saturation Voltage ($I_C=100\text{ mA}$, $I_B=5.0\text{ mA}$)	$V_{CE(sat)}$	-	0.3	Vdc
Base-Emitter Saturation Voltage ($I_C=100\text{ mA}$, $I_B=5.0\text{ mA}$)	$V_{BE(sat)}$	-	1.0	Vdc
Current-Gain-Bandwidth Product ($I_C=10\text{ mA}$, $V_{CE}=5.0\text{ V}$, $f=30\text{ MHz}$)	f_T	150	-	MHz

CLASSIFICATION OF h_{FE}

Rank	L	H
Range	200-450	450-1000

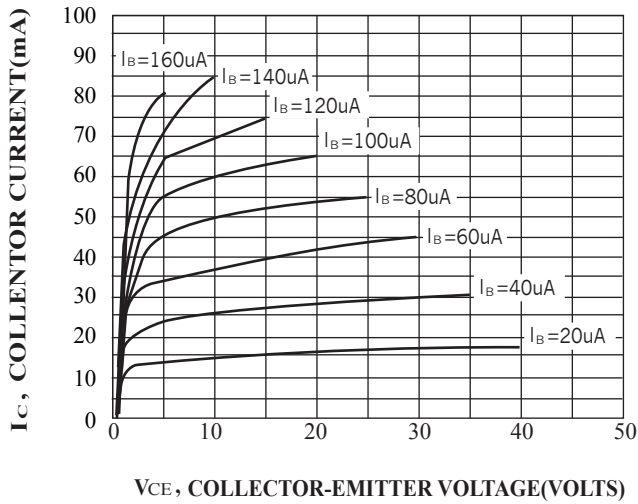


Figure1. Static Characteristic

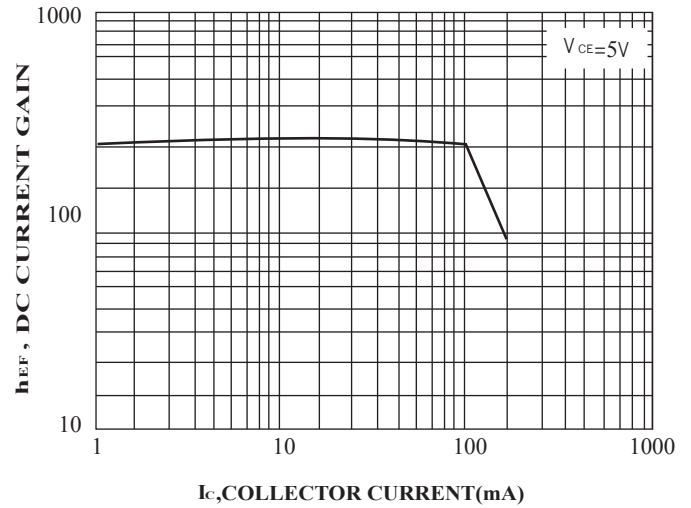


Figure2. DC current Gain

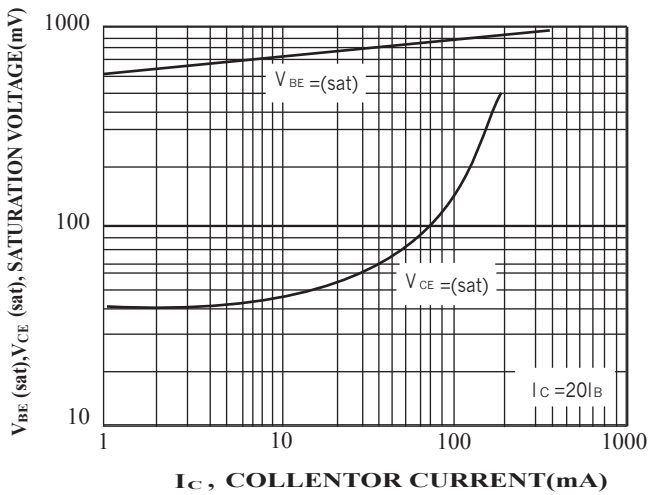


Figure3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

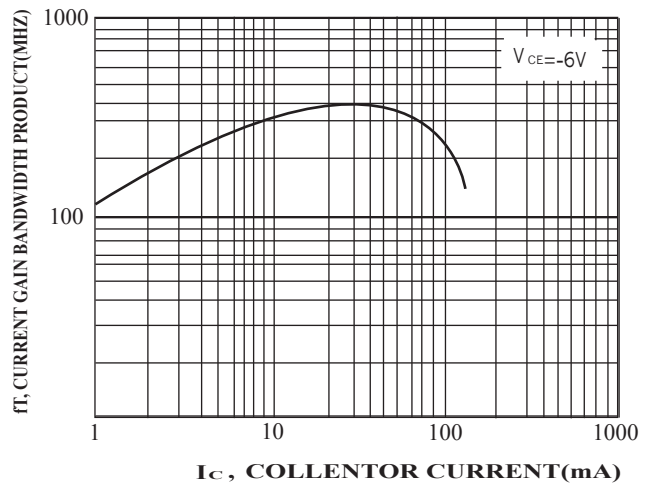


Figure4. Current Gain Bandwidth Product