

SOT-23 Plastic-Encapsulate Transistors

S9014 TRANSISTOR (NPN)

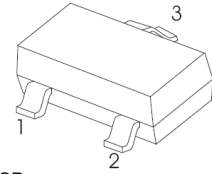
FEATURES

- Complementary to S9015

MARKING: J6

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR



MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^\circ\text{C}/\text{W}$
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^\circ\text{C}$

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

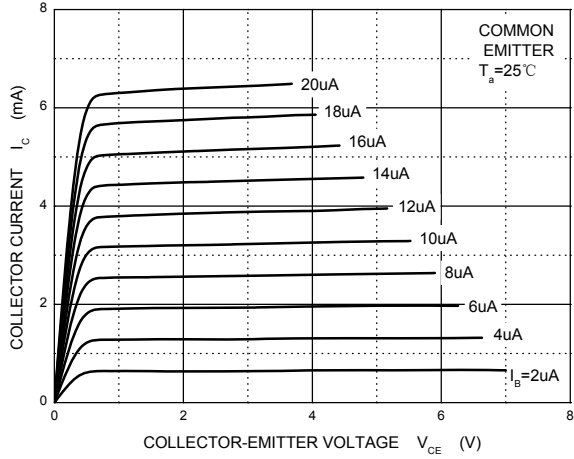
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$, $I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=0.1\text{mA}$, $I_B=0$	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$, $I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=50\text{V}$, $I_E=0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=35\text{V}$, $I_B=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=3\text{V}$, $I_C=0$			0.1	μA
DC current gain	h_{FE}	$V_{CE}=5\text{V}$, $I_C=1\text{mA}$	200		1000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}$, $I_B=5\text{mA}$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100\text{mA}$, $I_B=5\text{mA}$			1	V
Transition frequency	f_T	$V_{CE}=5\text{V}$, $I_C=10\text{mA}$ $f=30\text{MHz}$	150			MHz

CLASSIFICATION OF h_{FE}

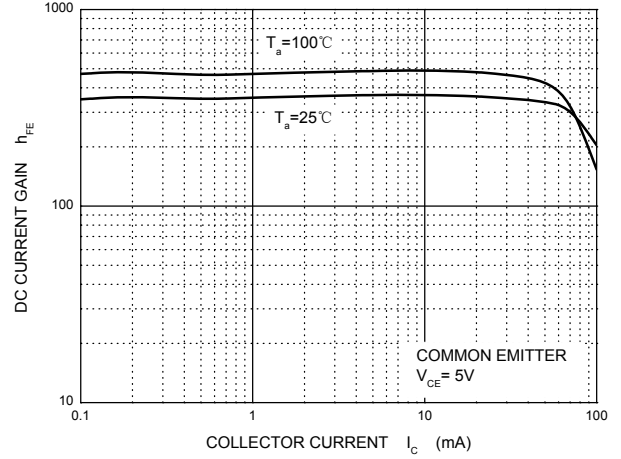
Rank	L	H
Range	300-400	450-1000

Typical Characteristics

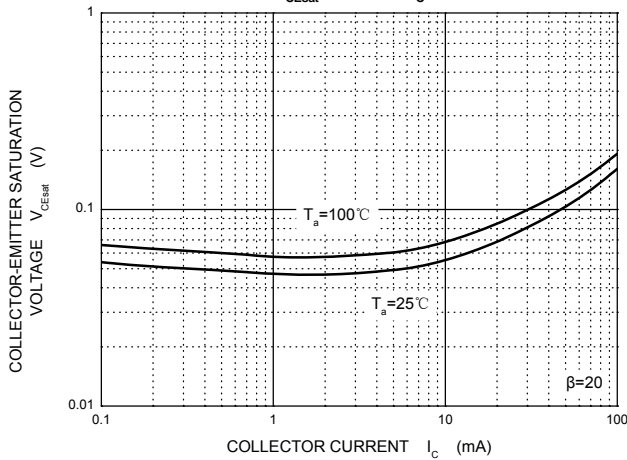
Static Characteristic



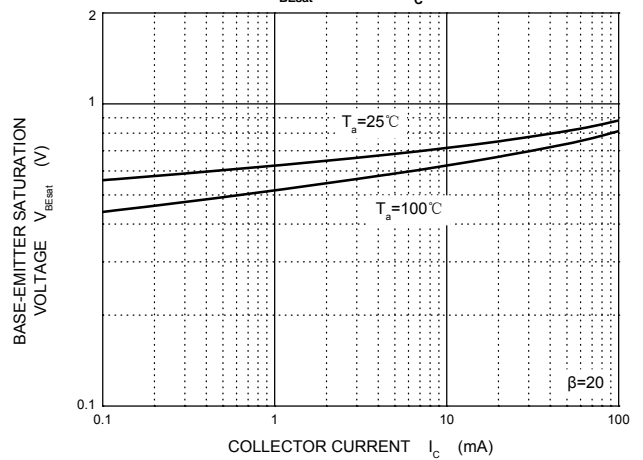
h_{FE} — I_c



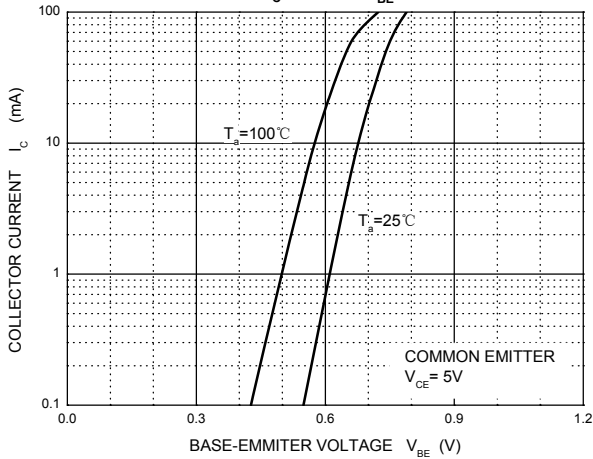
V_{CEsat} — I_c



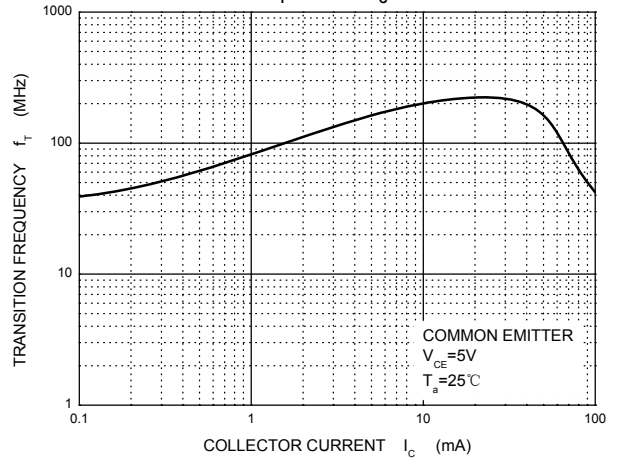
V_{BEsat} — I_c



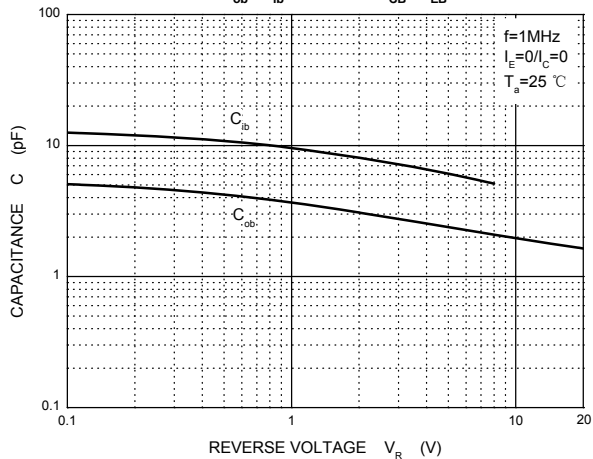
I_c — V_{BE}



f_T — I_c



C_{ob}/C_{ib} — V_{CB}/V_{EB}



P_c — T_a

