

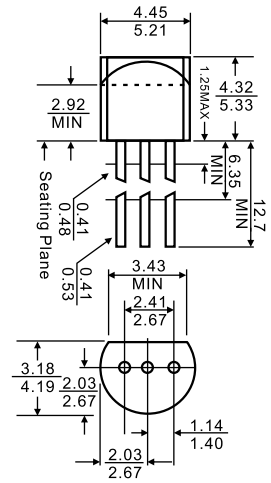
S9018(NPN)

TO-92 Bipolar Transistors



1. EMITTER
2. BASE
3. COLLECTOR

TO-92



Dimensions in inches and (millimeters)

Features

- ✧ High Current Gain Bandwidth Product $f_T=1.1$ GHz (Typ)

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	25	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current -Continuous	50	mA
P_C	Collector Power Dissipation	0.4	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150	$^\circ\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	25			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=0.1\text{mA}, I_B=0$	18			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	4			V
Collector cut-off current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=15\text{V}, I_B=0$			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}	$V_{CE}=5\text{V}, I_C=1\text{mA}$	28		270	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			1.42	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=5\text{mA}$ $f=400\text{MHz}$	600			MHz

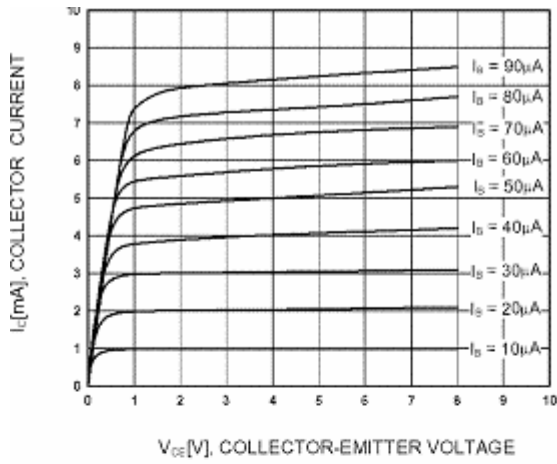
CLASSIFICATION OF h_{FE}

Rank	D	E	F	G	H	I	J
Range	28-45	39-60	54-80	72-108	97-146	132-198	180-270

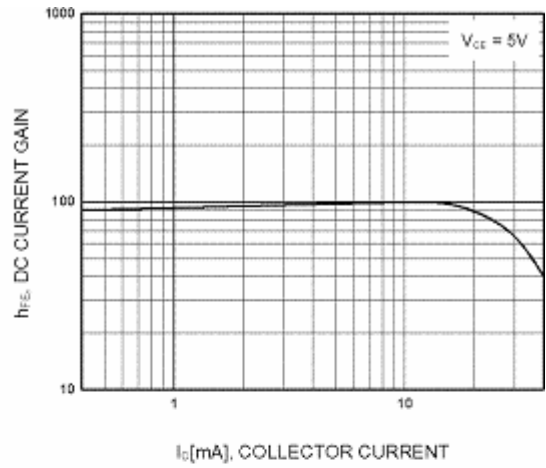
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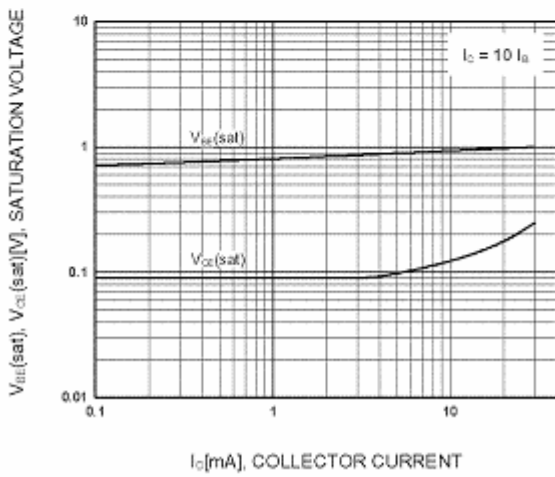
Typical Characteristics



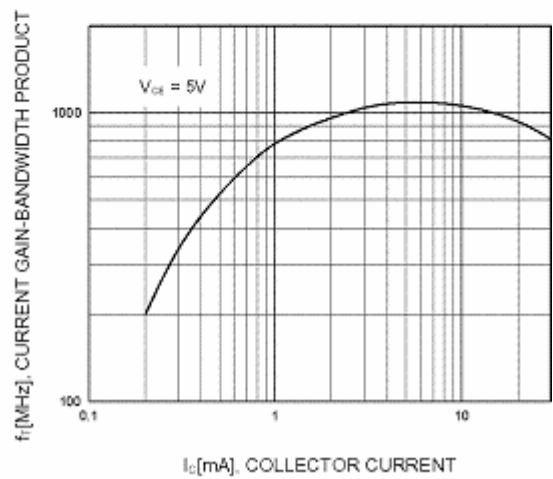
Static Characteristic



DC Current Gain



**Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**



Current Gain Bandwidth Product