

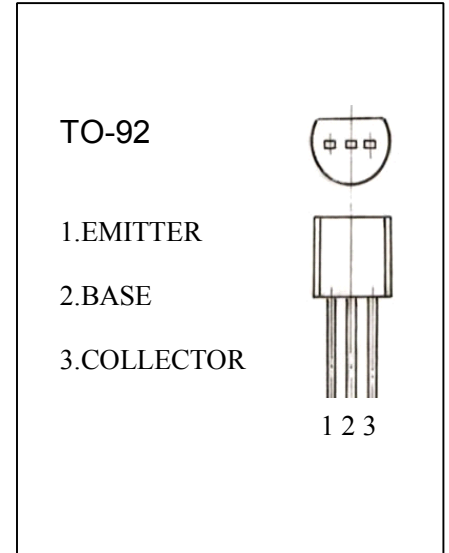
### TO-92 Plastic-Encapsulate Transistors

#### FEATURES

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

**MAXIMUM RATINGS** (TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
<b>VCBO</b>	Collector-Base Voltage	25	V
<b>VCEO</b>	Collector-Emitter Voltage	18	V
<b>VEBO</b>	Emitter-Base Voltage	4	V
<b>IC</b>	Collector Current -Continuous	50	mA
<b>PC</b>	Collector Power Dissipation	0.4	W
<b>Tj</b>	Junction Temperature	150	°C
<b>Tstg</b>	Storage Temperature	-55-150	°C



#### ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

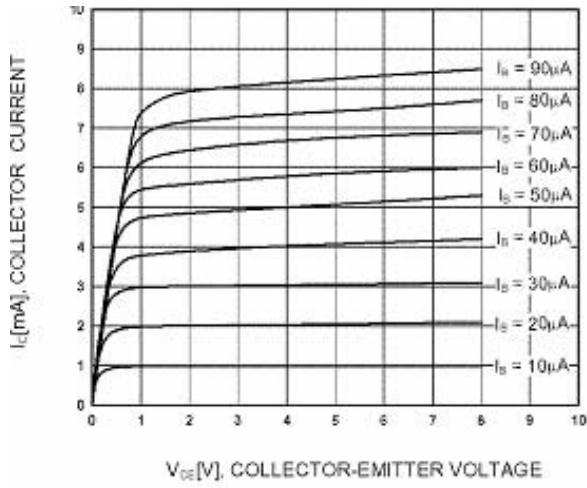
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
<b>Collector-base breakdown voltage</b>	$V_{(BR)CBO}$	$I_c=100\mu A, I_E=0$	25			V
<b>Collector-emitter breakdown voltage</b>	$V_{(BR)CEO}$	$I_c=0.1mA, I_B=0$	18			V
<b>Emitter-base breakdown voltage</b>	$V_{(BR)EBO}$	$I_E=100\mu A, I_c=0$	4			V
<b>Collector cut-off current</b>	$I_{CBO}$	$V_{CB}=20V, I_E=0$			0.1	$\mu A$
<b>Collector cut-off current</b>	$I_{CEO}$	$V_{CE}=15V, I_B=0$			0.1	$\mu A$
<b>Emitter cut-off current</b>	$I_{EBO}$	$V_{EB}=3V, I_c=0$			0.1	$\mu A$
<b>DC current gain</b>	$h_{FE}$	$V_{CE}=5V, I_c=1mA$	28		270	
<b>Collector-emitter saturation voltage</b>	$V_{CE(sat)}$	$I_c=10mA, I_B=1mA$			0.5	V
<b>Base-emitter saturation voltage</b>	$V_{BE(sat)}$	$I_c=10mA, I_B=1mA$			1.42	V
<b>Transition frequency</b>	$f_T$	$V_{CE}=5V, I_c=5mA, f=400MHz$	600			MHz

#### CLASSIFICATION OF $h_{FE}$

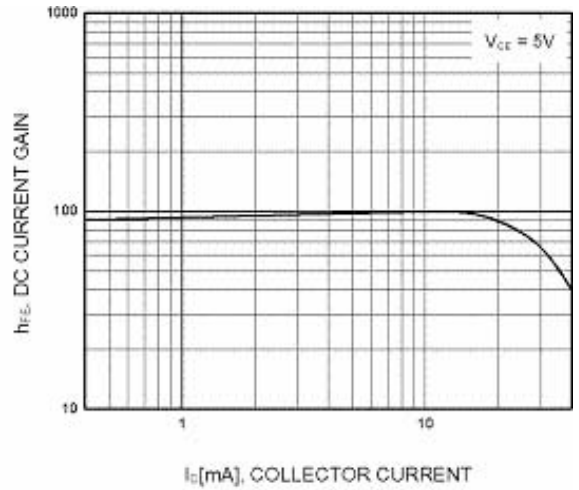
Rank	D	E	F	G	H	I	J
<b>Range</b>	28-45	39-60	54-80	72-108	97-146	132-198	180-270

# Typical Characteristics

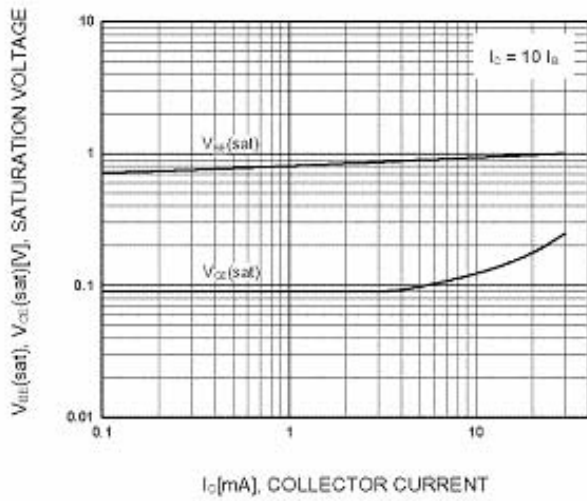
**S9018**



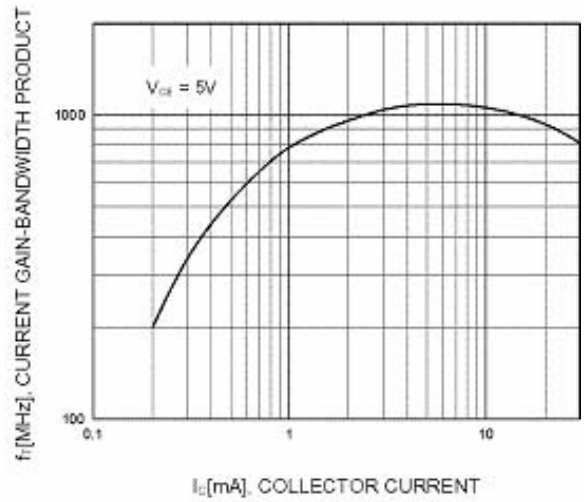
**Static Characteristic**



**DC Current Gain**



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



**Current Gain Bandwidth Product**