

# TO-92 Plastic-Encapsulate Transistors

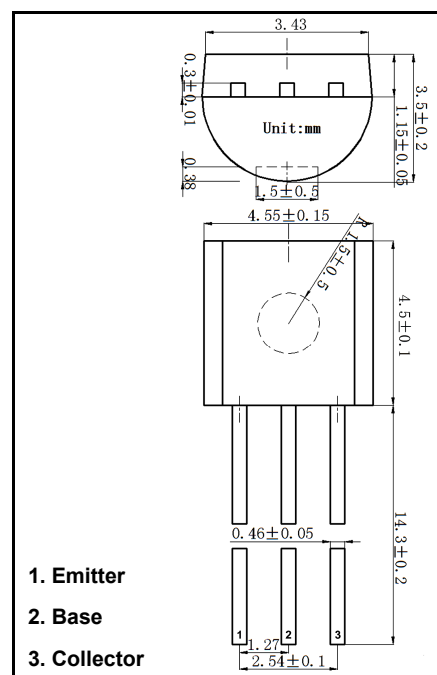
## S9018H331 NPN Transistors

### Features

- High Current Gain Bandwidth Product

### Maximum Ratings (T<sub>a</sub>=25°C unless otherwise noted)

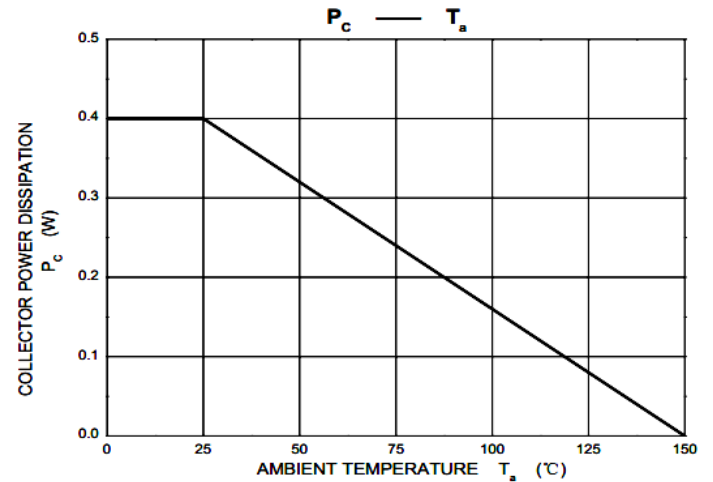
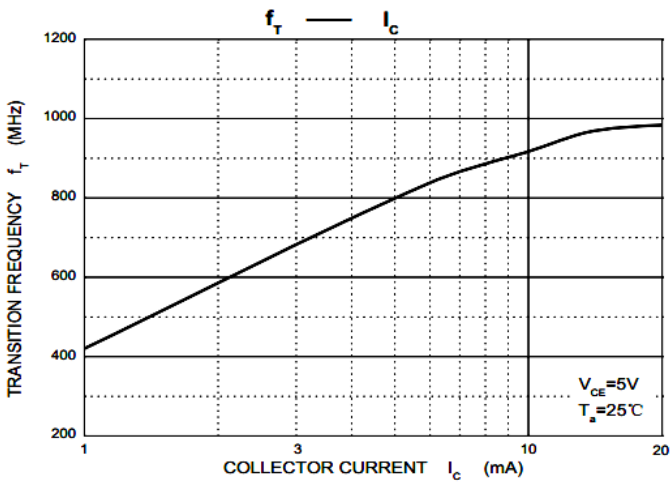
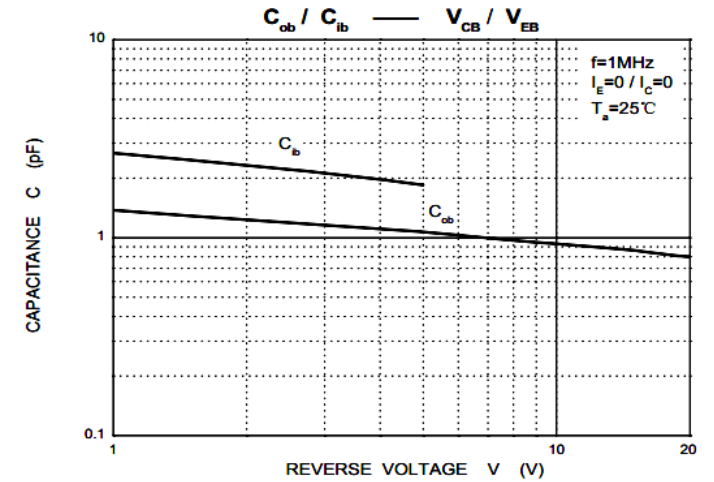
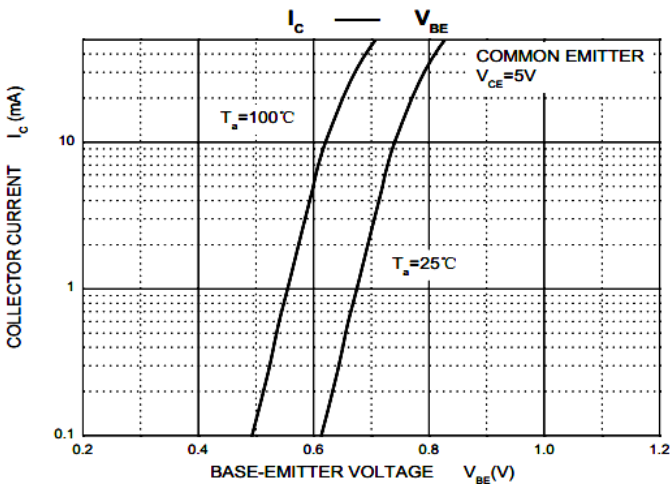
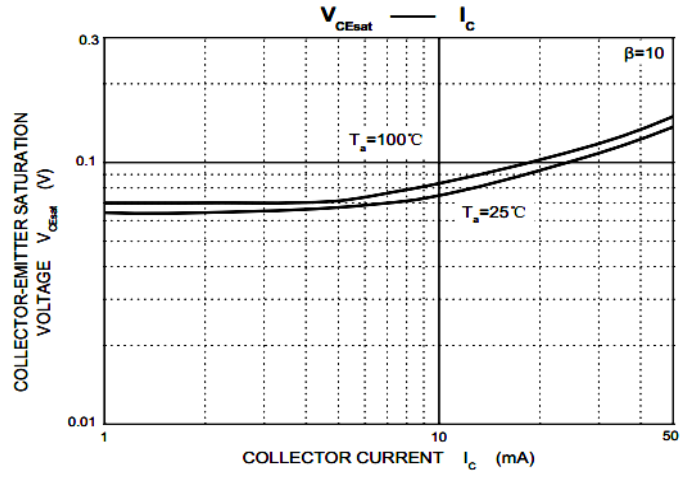
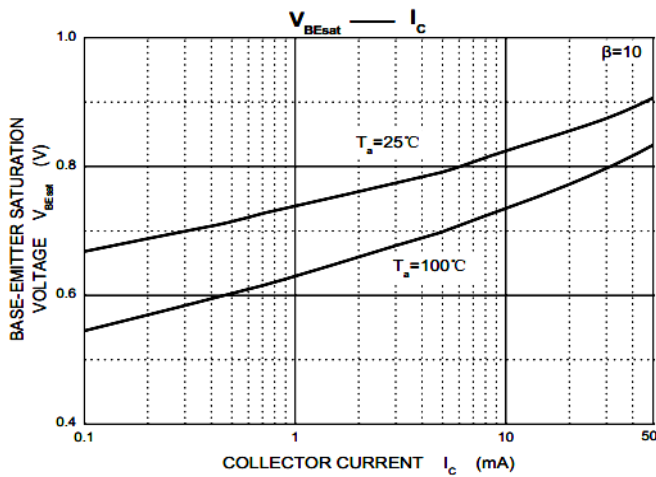
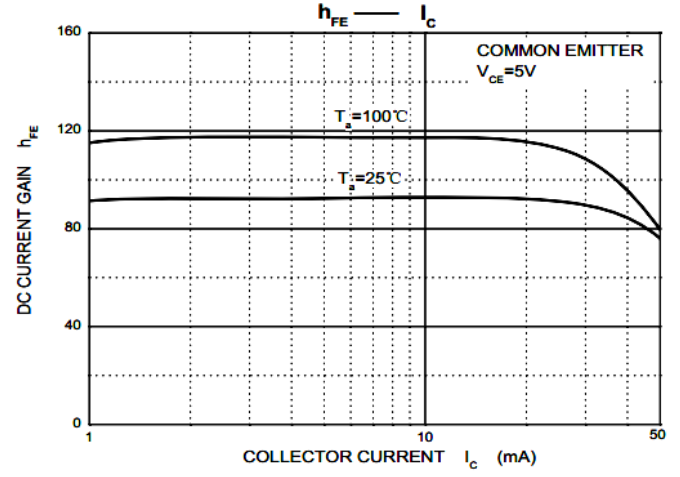
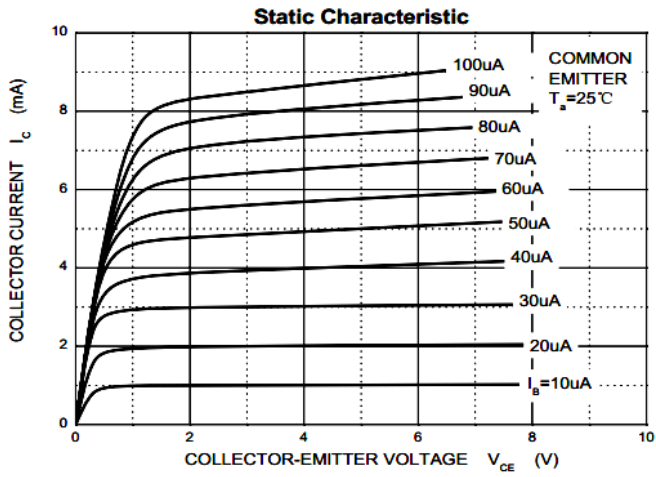
Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector Base Voltage	25	V
V <sub>CE0</sub>	Collector Emitter Voltage	18	V
V <sub>EBO</sub>	Emitter Base Voltage	4	V
I <sub>c</sub>	Collector Current	50	mA
P <sub>c</sub>	Collector Power Dissipation	0.4	W
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	312.5	°C/W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C



### Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>c</sub> = 100μA, I <sub>E</sub> = 0	25			V
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>c</sub> = 0.1mA, I <sub>B</sub> = 0	18			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> = 100μA, I <sub>c</sub> = 0	4			V
I <sub>cBO</sub>	Collector cut-off current	V <sub>CB</sub> = 20V, I <sub>E</sub> = 0			0.1	μA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> = 15V, I <sub>B</sub> = 0			0.1	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> = 3V, I <sub>c</sub> = 0			0.1	μA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = 5V, I <sub>c</sub> = 1mA	100		300	
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>c</sub> = 10mA, I <sub>B</sub> = 1mA			0.5	V
V <sub>BE(sat)</sub>	Base-emitter saturation voltage	I <sub>c</sub> = 10mA, I <sub>B</sub> = 1mA			1.42	V
f <sub>r</sub>	Transition frequency	V <sub>CE</sub> =5V, I <sub>c</sub> =50mA, f=400MHz		800		MHz

# Typical Characteristics



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