

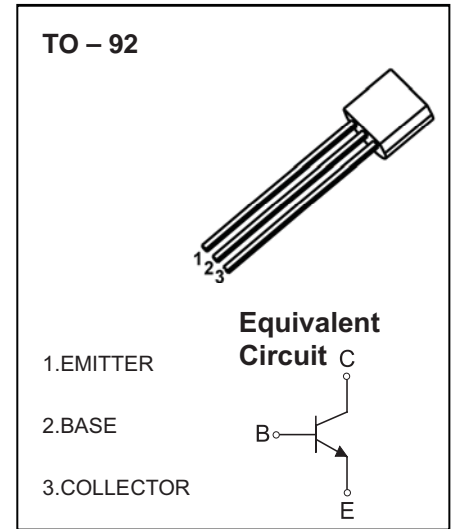


TO-92 Plastic-Encapsulate Transistors

S9018G331 TRANSISTOR (NPN)

FEATURES

- High Current Gain Bandwidth Product



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	25	V
V _{CEO}	Collector-Emitter Voltage	18	V
V _{EBO}	Emitter-Base Voltage	4	V
I _C	Collector Current -Continuous	0.05	A
P _D	Collector Power Dissipation	400	mW
R _{θJA}	Thermal Resistance from Junction to Ambient	312.5	°C /W
T _J ,T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

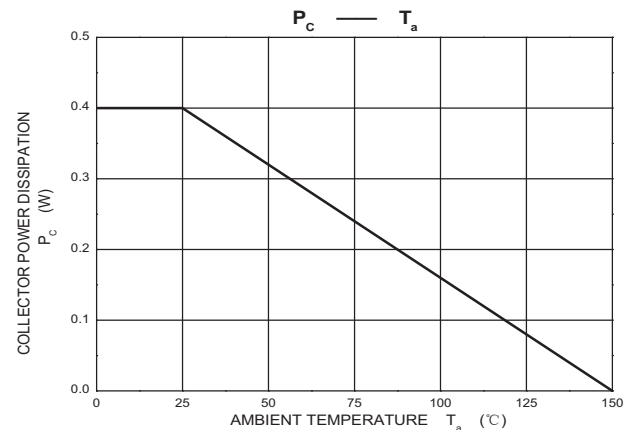
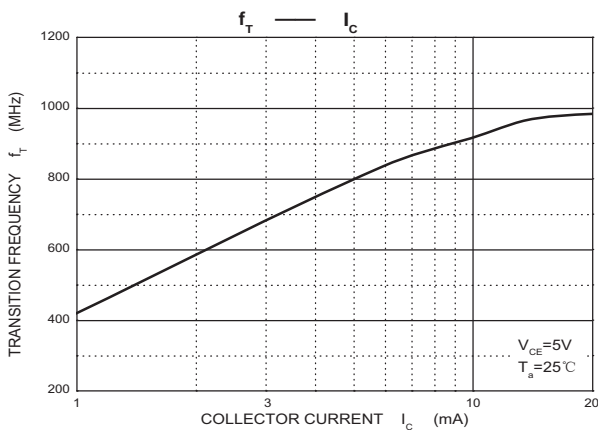
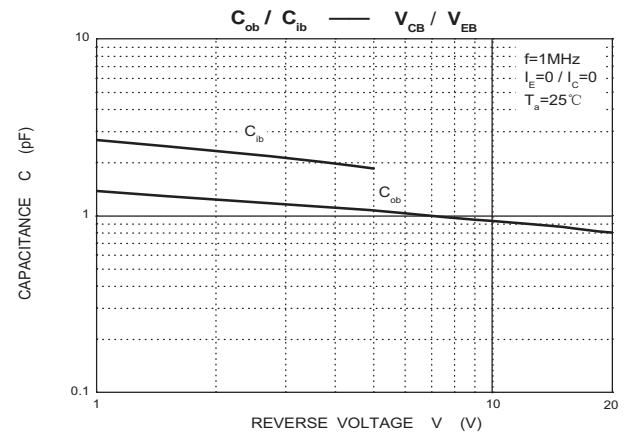
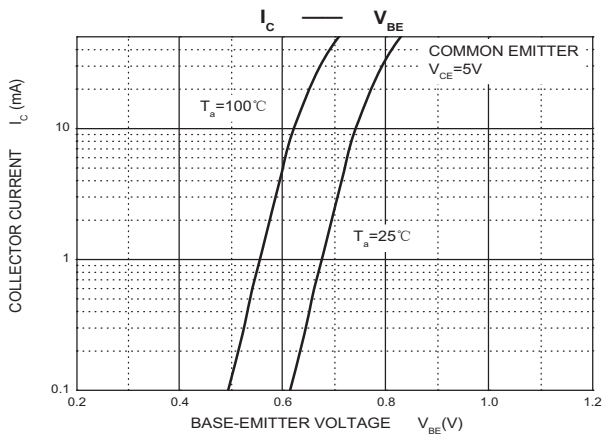
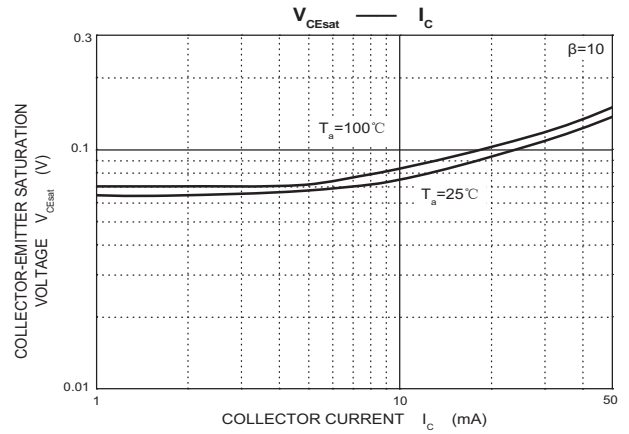
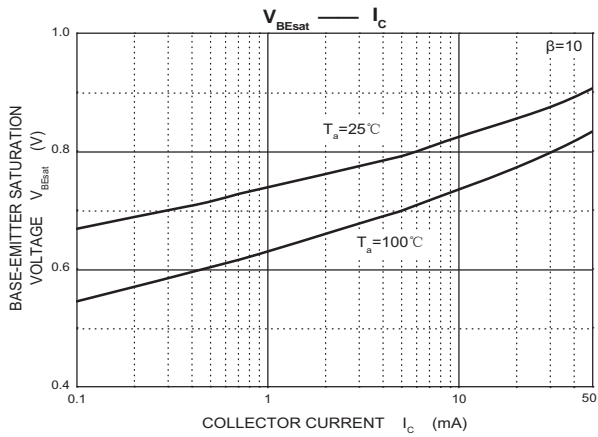
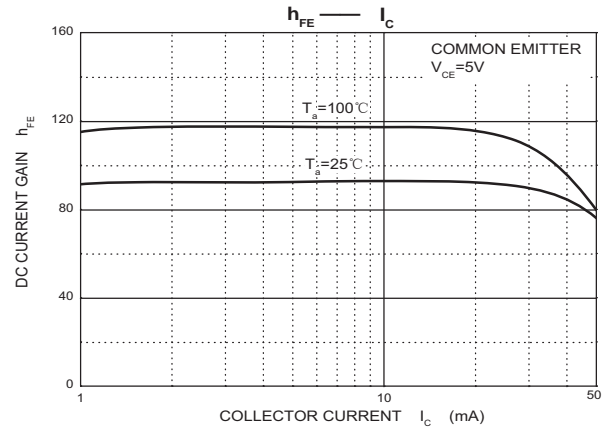
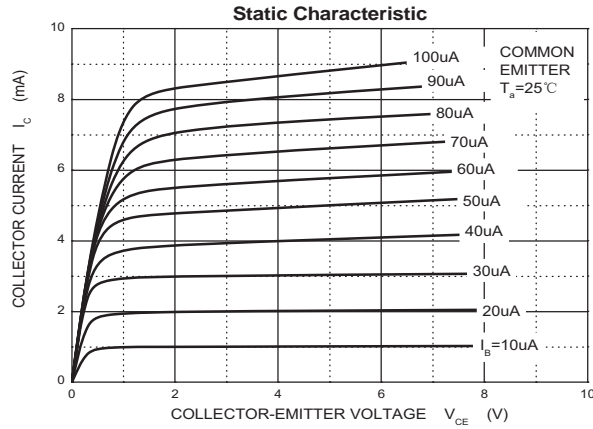
ELECTRICAL CHARACTERISTICS T_a =25 °C unless otherwise specified

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =100μA,I _E =0	25			V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =0.1mA,I _B =0	18			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =100μA,I _C =0	4			V
I _{CBO}	Collector cut-off current	V _{CB} =20V,I _E =0			0.1	nA
I _{CEO}	Collector cut-off current	V _{CE} =15V,I _B =0			0.1	μA
I _{EBO}	Emitter cut-off current	V _{EB} =3V,I _C =0			0.1	μA
h _{FE}	DC current gain	V _{CE} =5V, I _C =1mA	28		270	
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =10mA,I _B =1mA			0.5	V
V _{BE(sat)}	Base-emitter saturation voltage	I _C =10mA,I _B =1mA			1.42	V
f _T	Transition frequency	V _{CE} =5V,I _C =50mA,f=400MHZ		800		MHz

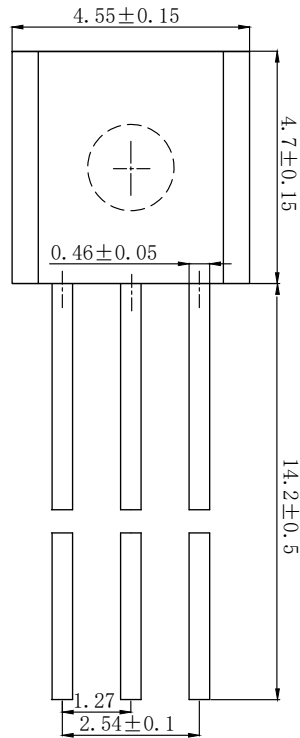
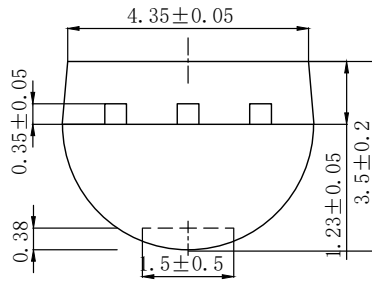
CLASSIFICATION OF h_{FE}

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

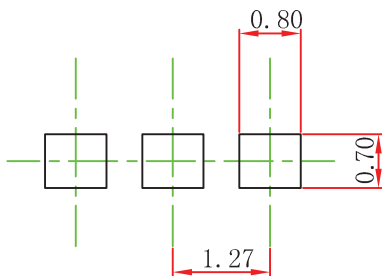
Typical Characteristics



TO-92 Package Outline Dimensions



TO-92 Suggested Pad Layout



Note:

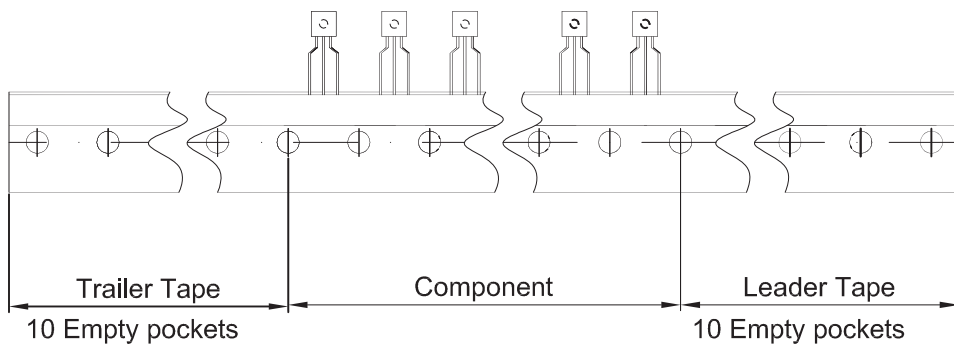
1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

TO-92 Tape and Reel



Dimiensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250

X-ON Electronics

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