

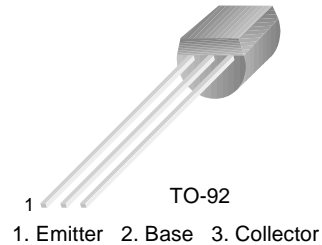


SS9018

SS9018

AM/FM Amplifier, Local Oscillator of FM/VHF Tuner

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



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	50	mA
P_C	Collector Power Dissipation	400	mW
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 noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C=100\mu\text{A}, I_E=0$	30			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=1.0\text{mA}, I_B=0$	15			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=100\mu\text{A}, I_C=0$	5			V
I_{CBO}	Collector Cut-off Current	$V_{CB}=12\text{V}, I_E=0$			50	nA
h_{FE}	Emitter Cut-off Current	$V_{CE}=5\text{V}, I_C=1.0\text{mA}$	28	100	198	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$			0.5	V
C_{ob}	Output Capacitance	$V_{CB}=10\text{V}, I_E=0$ $f=1\text{MHz}$		1.3	1.7	pF
f_T	Current Gain Bandwidth Product	$V_{CE}=5\text{V}, I_C=5\text{mA}$	700	1100		MHz

h_{FE} Classification

Classification	D	E	F	G	H	I
h_{FE}	28 ~ 45	39 ~ 60	54 ~ 80	72 ~ 108	97 ~ 146	132 ~ 198

Typical Characteristics

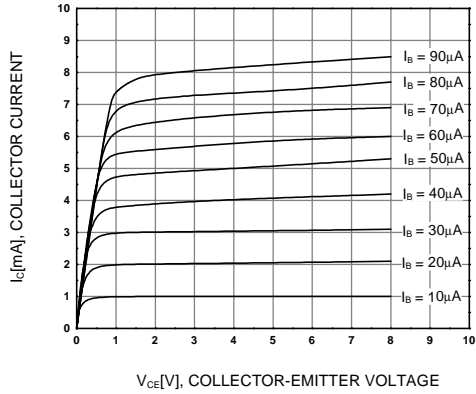


Figure 1. Static Characteristic

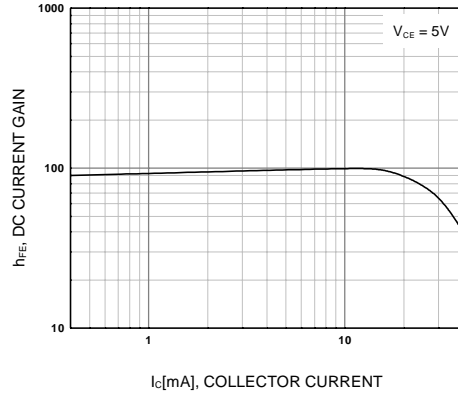


Figure 2. DC current Gain

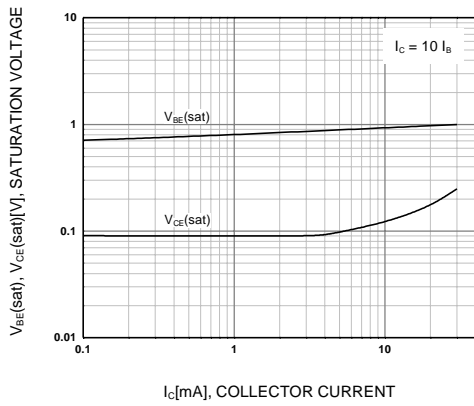


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

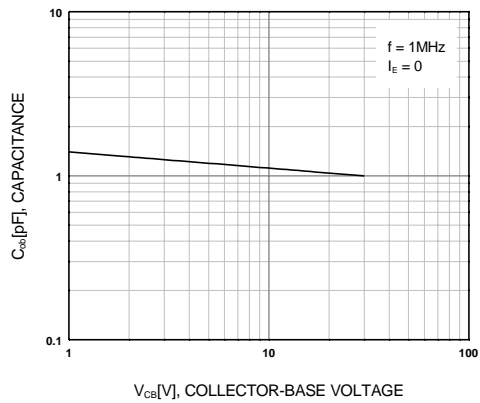


Figure 4. Output Capacitance

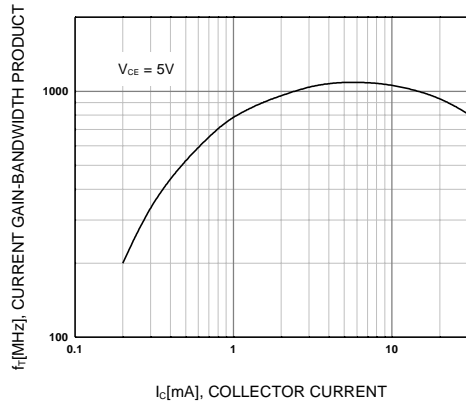
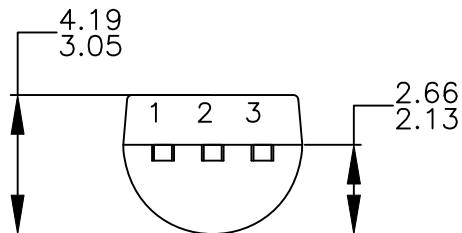
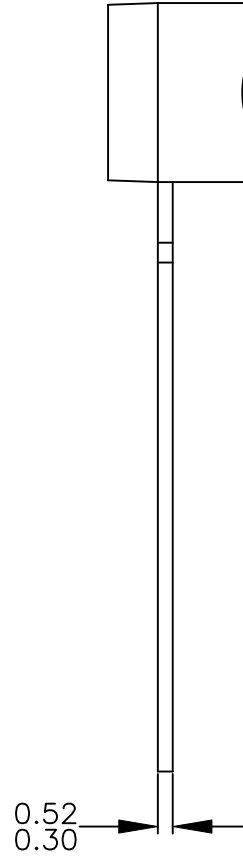
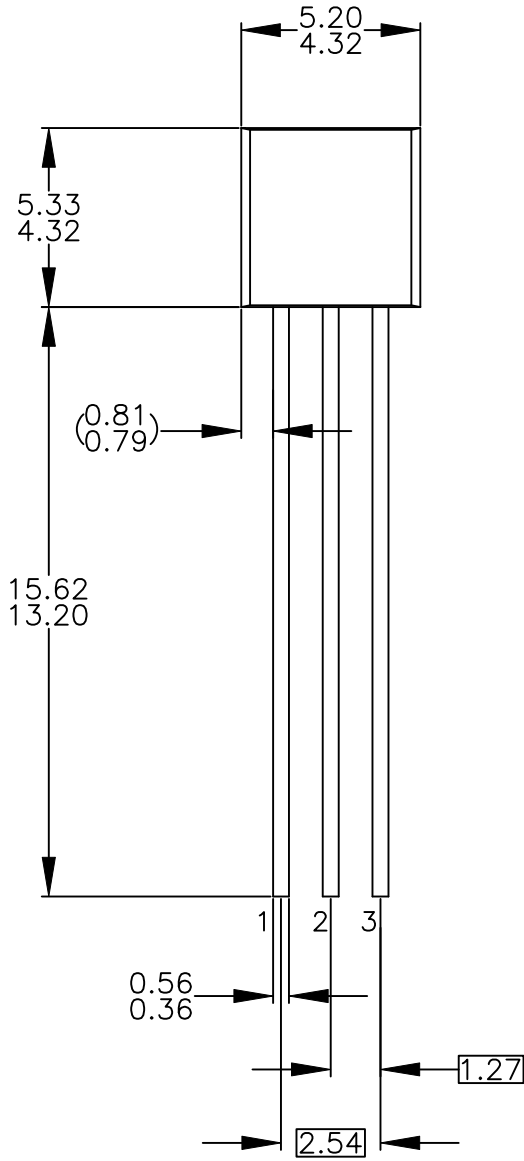


Figure 5. Current Gain Bandwidth Product



NOTES: UNLESS OTHERWISE SPECIFIED

- A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DRAWING CONFORMS TO ASME Y14.5M-2009.
- D) DRAWING FILENAME: MKT-ZA03DREV4.





TO-92 Plastic-Encapsulate Transistors

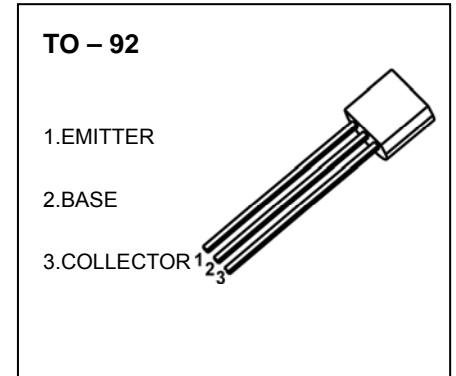
S9018 TRANSISTOR (NPN)

FEATURES

- High Current Gain Bandwidth Product

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

Symbol	Parameter	Value	Unit
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
R _{θJA}	Thermal Resistance From Junction To Ambient	312.5	°C/W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C



ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

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

S9018

