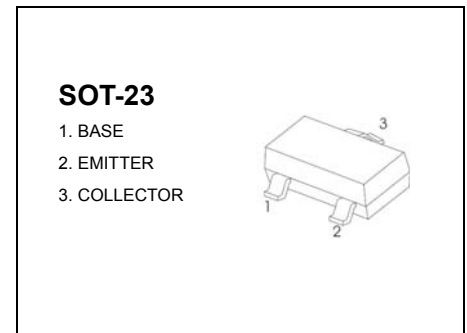


# TRANSISTOR NPN

## FEATURES

- AM/FM Amplifier, Local Oscillator of FM/VHF Tuner
- High Current Gain Bandwidth Product

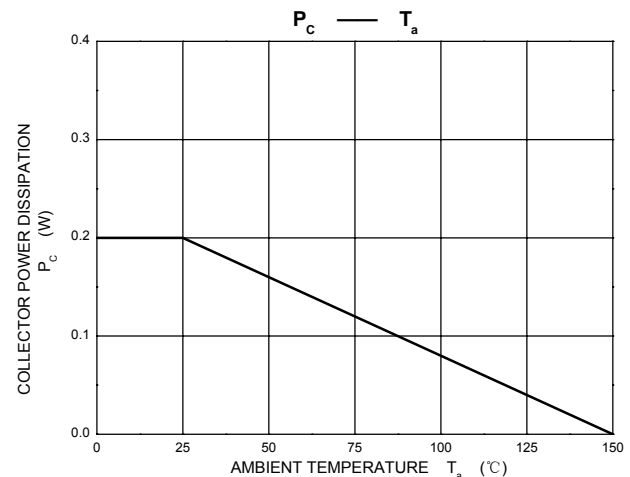
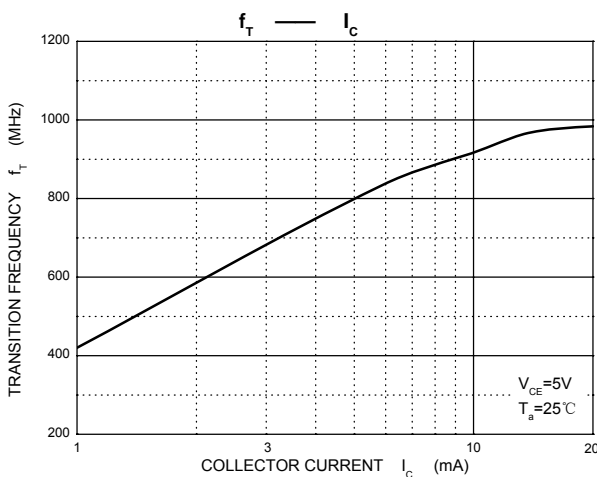
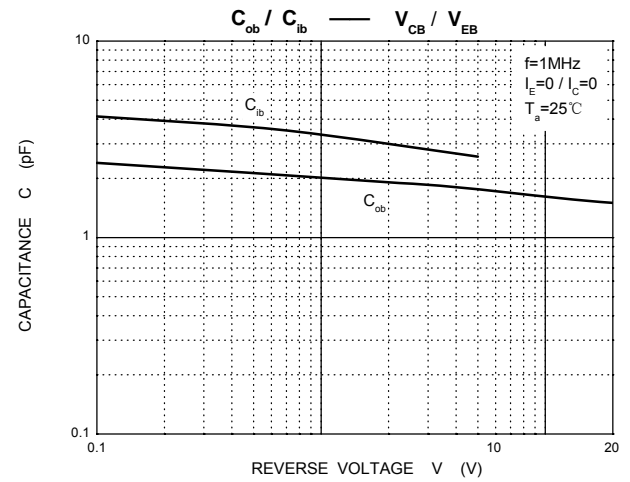
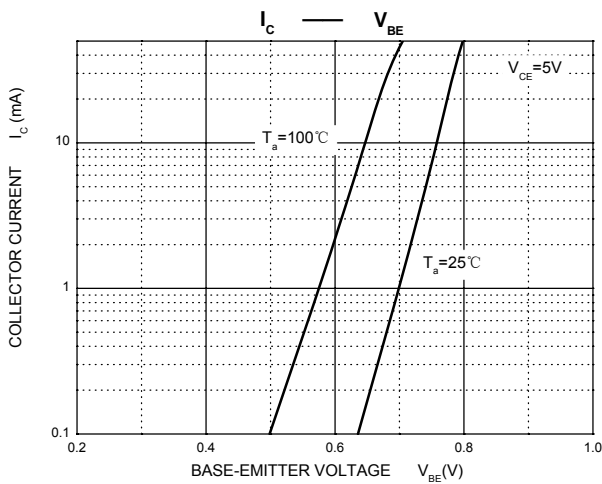
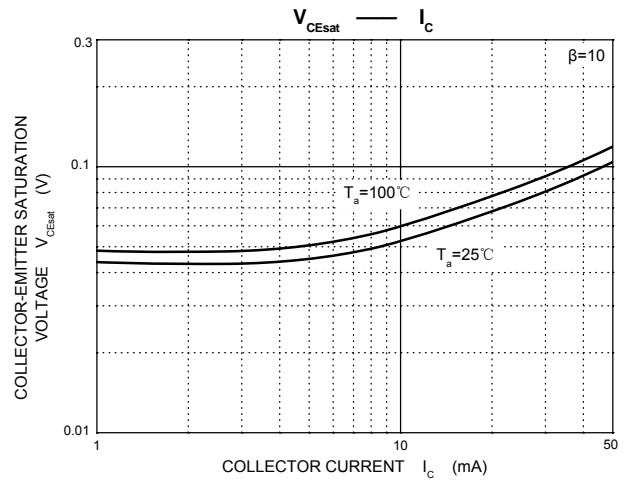
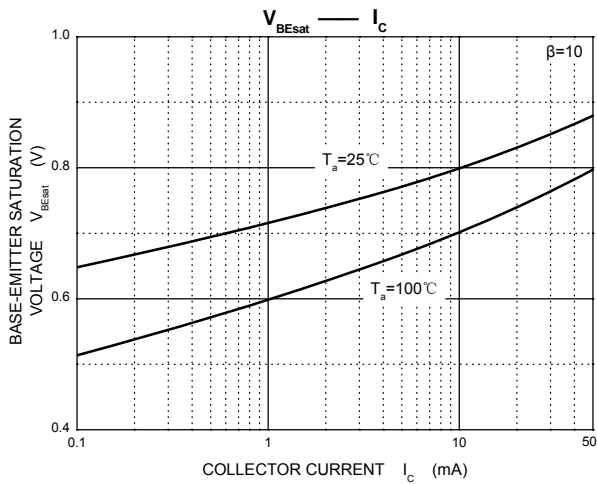
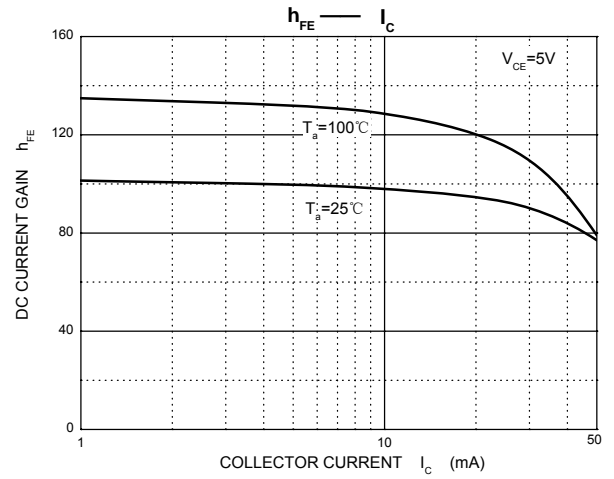
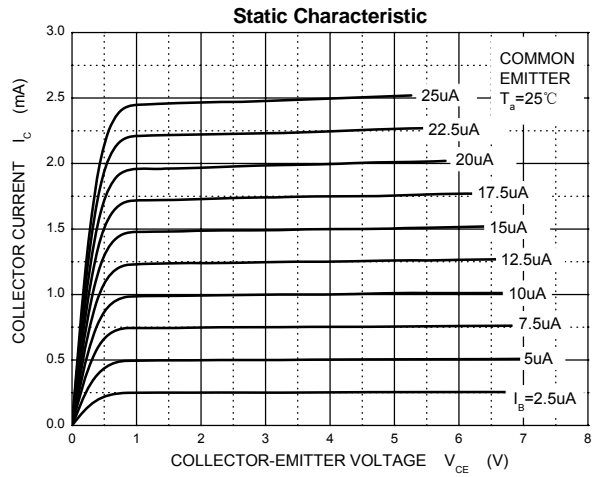


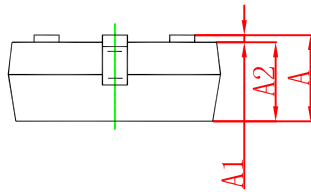
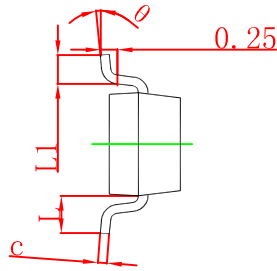
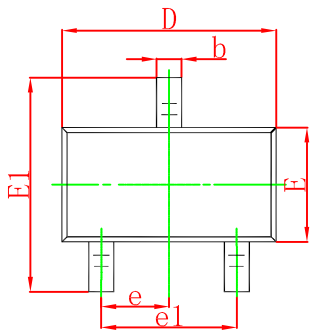
## MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{\text{CBO}}$	Collector-Base Voltage	30	V
$V_{\text{CEO}}$	Collector-Emitter Voltage	15	V
$V_{\text{EBO}}$	Emitter-Base Voltage	5	V
$I_{\text{c}}$	Collector Current -Continuous	50	mA
$P_{\text{c}}$	Collector Power Dissipation	200	mW
$F_{>5}$	Thermal Resistance from Junction to Ambient	625	$^{\circ}\text{C}/\text{W}$
$T_{\text{j}}$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{\text{stg}}$	Storage Temperature	-55-150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{c}}=100\mu\text{A}, I_{\text{E}}=0$	30			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{c}}=1\text{mA}, I_{\text{B}}=0$	15			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=100\mu\text{A}, I_{\text{c}}=0$	5			V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}}=12\text{V}, I_{\text{E}}=0$			0.05	$\mu\text{A}$
Collector cut-off current	$I_{\text{CEO}}$	$V_{\text{CE}}=12\text{V}, I_{\text{B}}=0$			1	$\mu\text{A}$
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}}=3\text{V}, I_{\text{c}}=0$			0.1	$\mu\text{A}$
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=5\text{V}, I_{\text{c}}=1\text{mA}$	70		200	
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	$I_{\text{c}}=10\text{mA}, I_{\text{B}}=1\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{\text{BE}(\text{sat})}$	$I_{\text{c}}=10\text{mA}, I_{\text{B}}=1\text{mA}$			1.4	V
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}}=5\text{V}, I_{\text{c}}=5\text{mA}$ $f=400\text{MHz}$		800		MHz





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°