

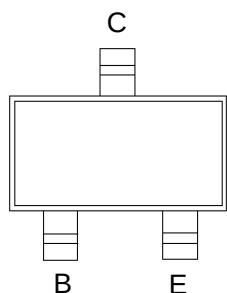
NPN Silicon Epitaxial Planar Transistor

Features

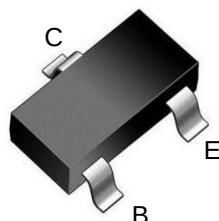
- Low Noise and High Gain
- High Power Gain

Application

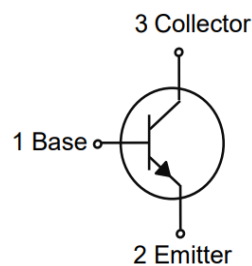
- low noise amplifier at VHF, UHF and CATV band applications



Marking and pin assignment



SOT-323 top view



Schematic diagram



Pb-Free



RoHS



Halogen-Free

Maximum Ratings(Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	12	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	°C/W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-50~+150	°C

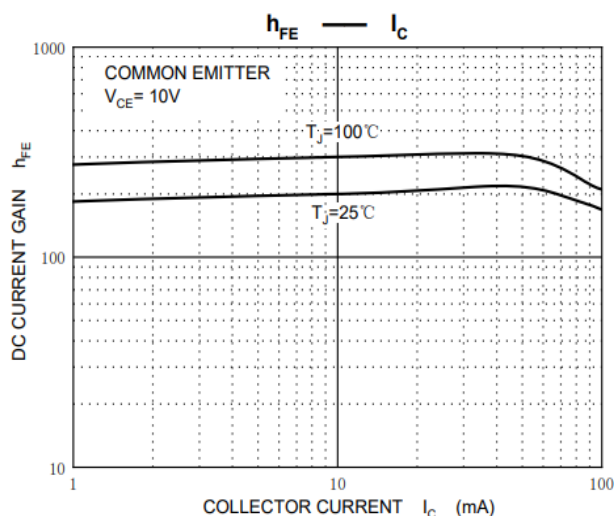
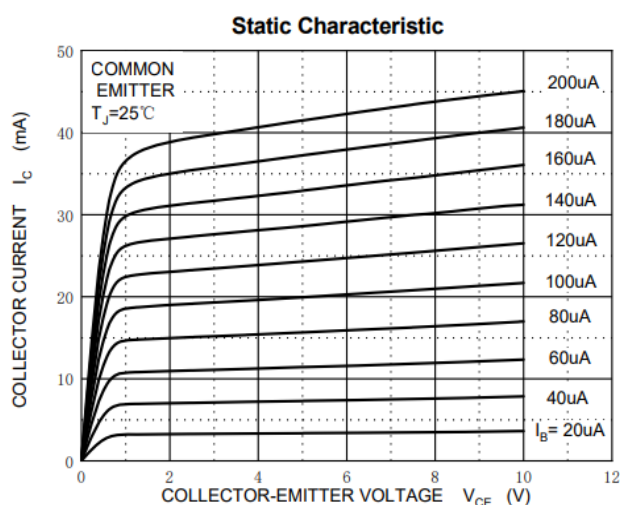
Electrical Characteristics (T_J=25°C unless otherwise noted)

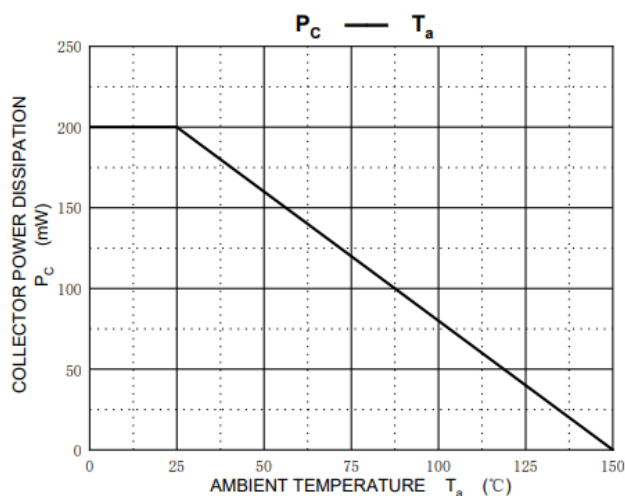
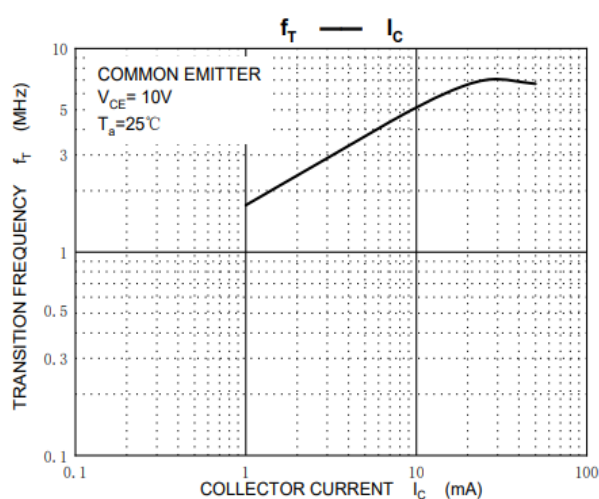
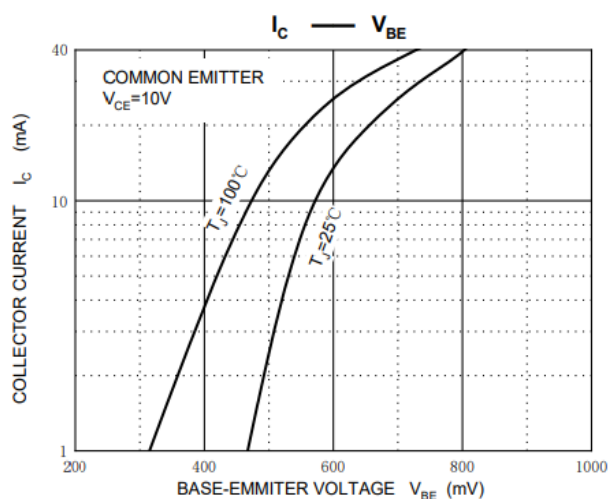
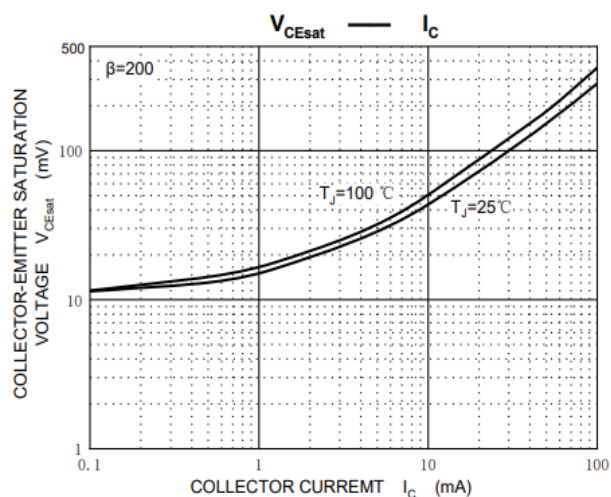
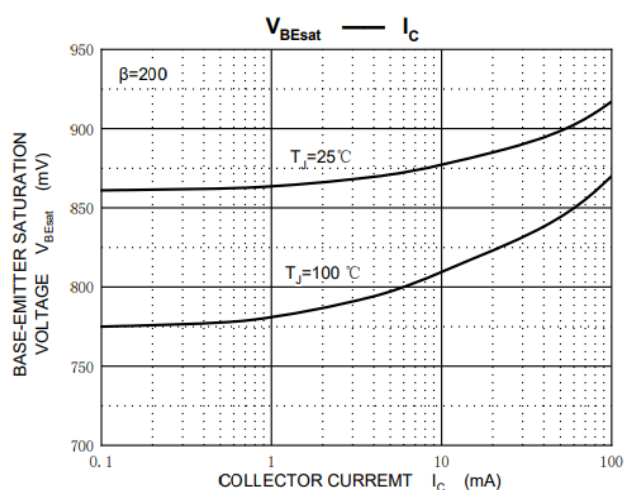
Symbol	Parameter	Condition	Min	Typ	Max	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =100μA, I _E =0	20	--	--	V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =1mA, I _B =0	12	--	--	V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =100μA, I _C =0	3	--	--	V
I _{CBO}	Collector cut-off current	V _{CB} =10 V, I _E =0	--	--	1	μA
I _{EBO}	Emitter cut-off current	V _{EB} = 1V, I _C =0	--	--	1	μA
h _{FE}	DC current gain	V _{CE} =3V, I _C = 7mA	40	--	250	
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =50 mA, I _B = 5mA	--	--	0.3	V
V _{BE(sat)}	Base-emitter saturation voltage	I _C =50 mA, I _B = 5mA	--	--	1.15	V
N _F	Noise Figure	V _{CB} =3V, I _C =7mA, f=1GHz	--	1.2	2.5	dB
C _{ob}	Collector output capacitance	V _{CE} =3V, I _E =7mA, f=1GHz	--	0.7	1.5	pF
f _T	Transition frequency	V _{CE} =3V, I _C = 7mA	--	4.5	--	GHz

Classification of hFE

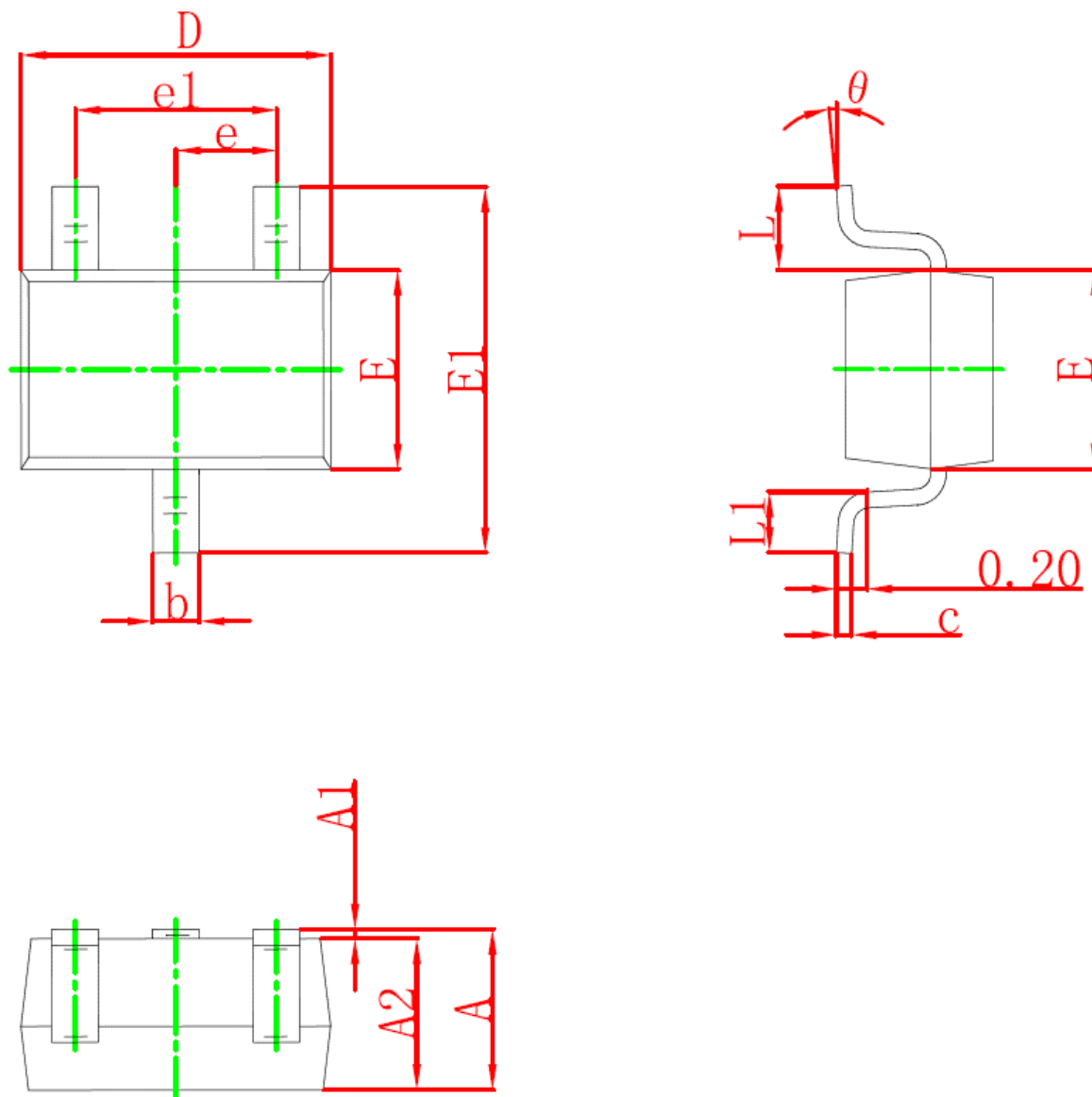
Marking	R23	R24	R25
Range	40-80	70-140	125-250

Typical Operating Characteristics





SOT-323 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°