

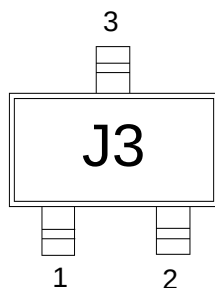
General Purpose Transistors NPN Silicon

Features

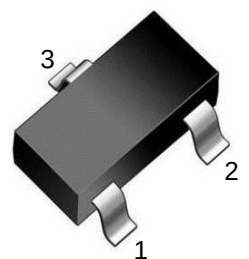
- High Collector Current
- Complementary To S9012
- Excellent h_{FE} Linearity

Application

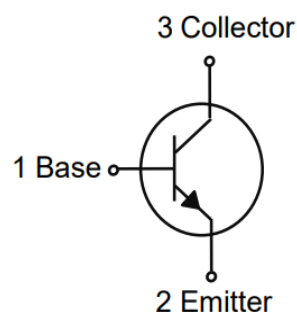
- High Collector Current



Marking and pin assignment



SOT-323 top view



Schematic diagram



Halogen-Free

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

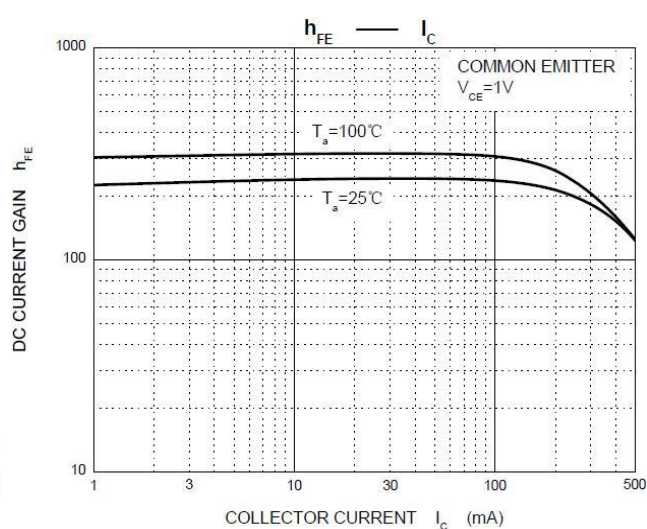
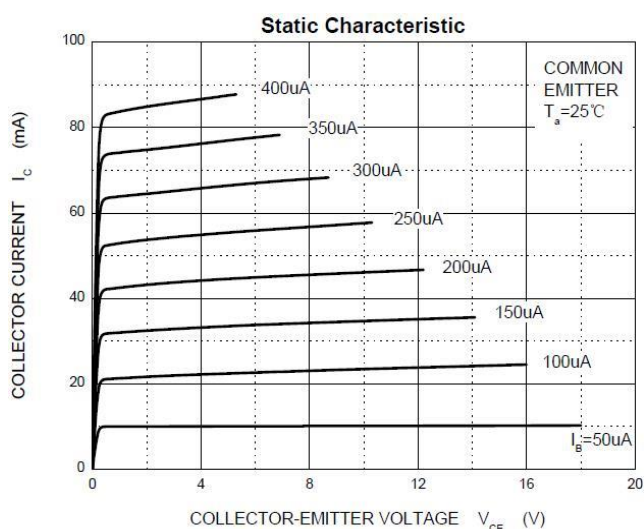
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

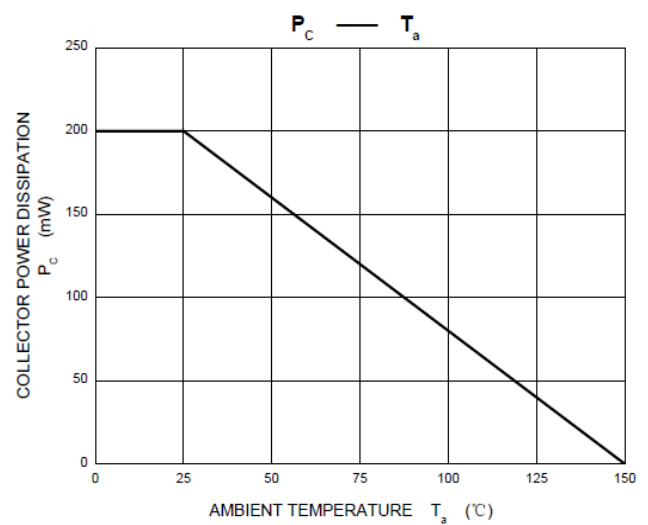
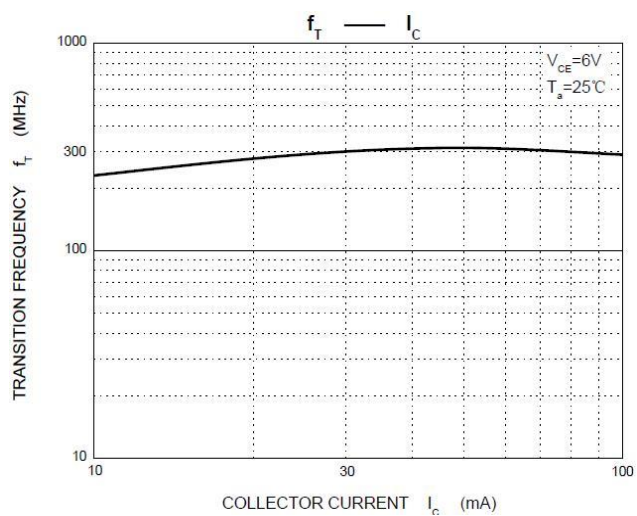
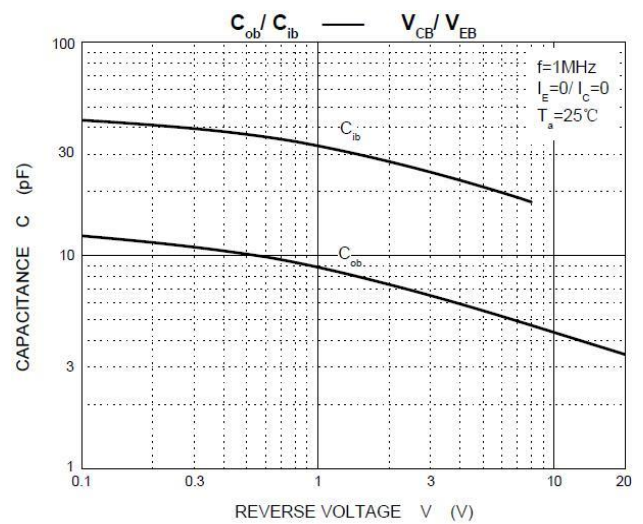
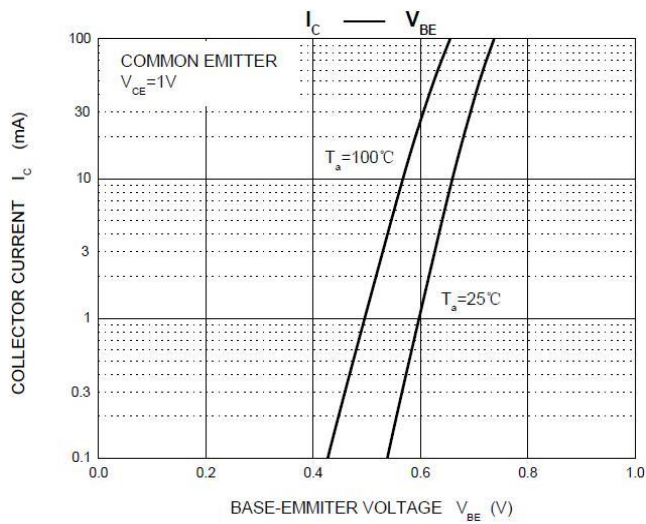
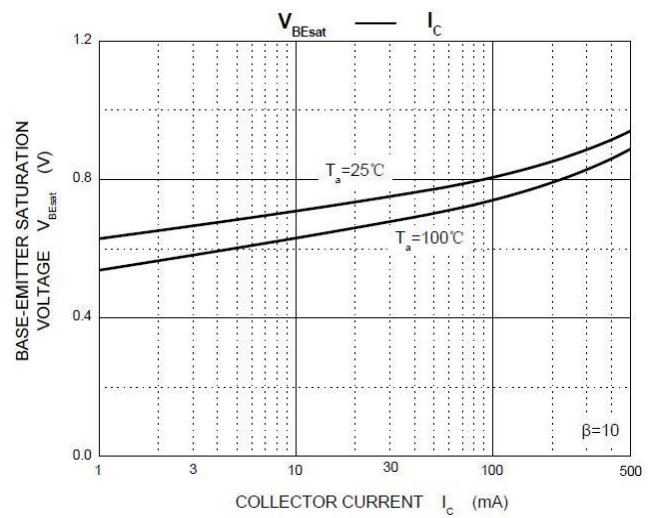
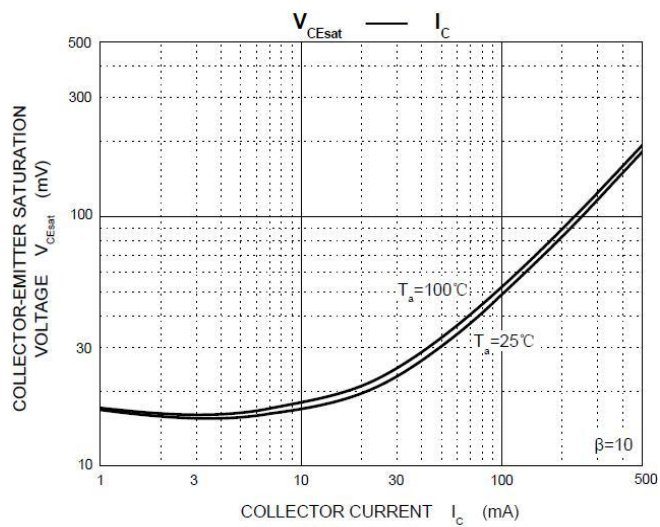
Electrical Characteristics (T_J=25°C unless otherwise noted)

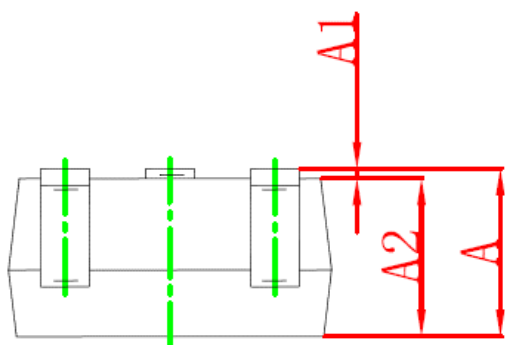
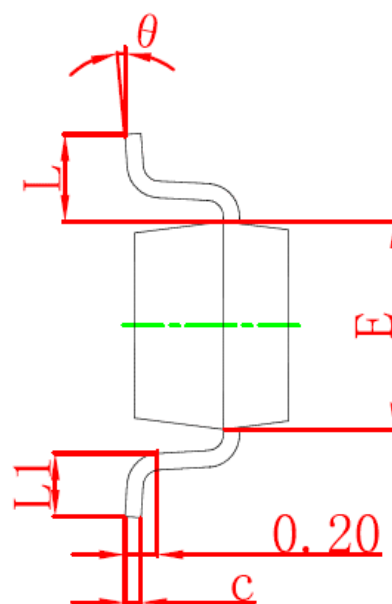
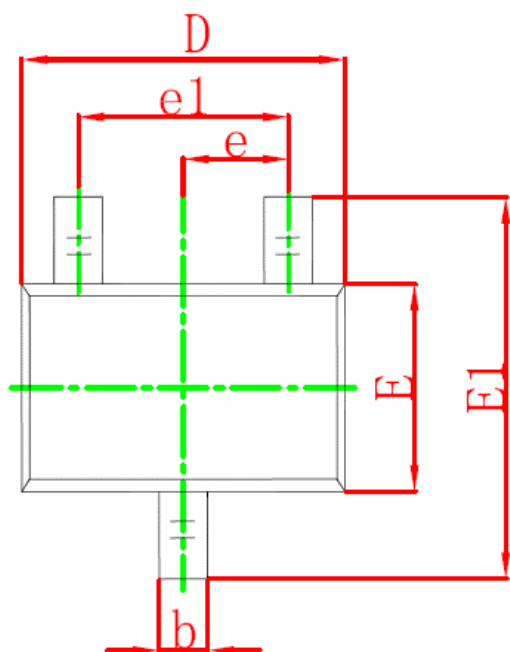
Symbol	Parameter	Condition	Min	Typ	Max	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =0.1mA, I _E =0	40	--	--	V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =1mA, I _B =0	25	--	--	V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =0.1mA, I _C =0	5	--	--	V
I _{CBO}	Collector cut-off current	V _{CB} =40 V, I _E =0	--	--	0.1	μA
I _{CEO}	Collector cut-off current	V _{CE} =20V, I _B =0	--	--	0.1	μA
I _{EBO}	Emitter cut-off current	V _{EB} =5V, I _C =0	--	--	0.1	μA
h _{FE}	DC current gain	V _{CE} =1V, I _C =50mA	120	--	400	
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =500mA, I _B =50mA	--	--	0.6	V
V _{BE(sat)}	Base-emitter saturation voltage	I _C =500mA, I _B =50mA	--	--	1.2	V
V _{BE}	Base-emitter voltage	V _{CE} =1V, I _C =10mA	--	--	0.7	V
C _{ob}	Collector output capacitance	V _{CB} =6V, I _E =0, f=1MHz	--	--	8	pF
f _T	Transition frequency	V _{CE} =6V, I _C =20mA, f=30MHz	150	--	--	MHz

Classification of h_{FE}

Rank	L	H	J
Range	120-200	200-350	300-400

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°