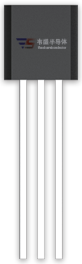
2SA950 TRANSISTOR (PNP)



FEATURES

- 1W Output Applications
- Complementary to 2SC2120

ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2SA950	TO-92	Bul	1000pcs/Bag
2SA950-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

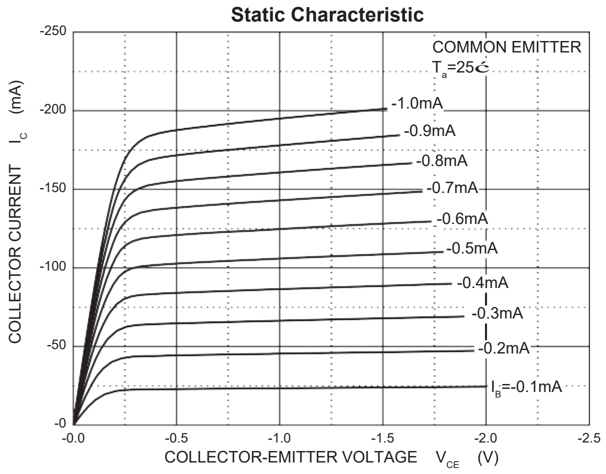
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-35	V
V_{CEO}	Collector-Emitter Voltage	-30	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-0.8	A
P_D	Collector Power Dissipation	600	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	208	℃ /W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

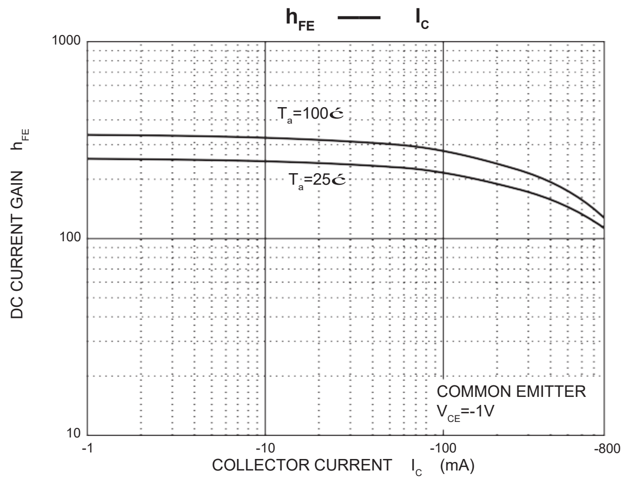
T_a=25℃ unless otherwise specified

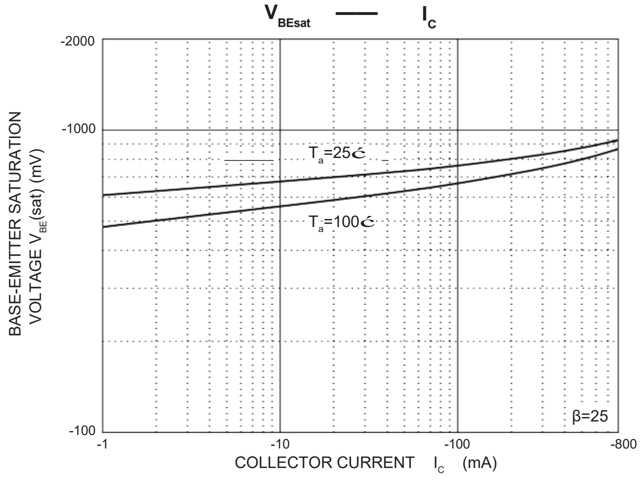
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= -0.1mA , I_E=0	-35			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= -10mA , I_B=0	-30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= -0.1mA, I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}= -35V, I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}= -5V, I_C=0			-0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=-1V, I_C=-100mA	100		320	
	$h_{FE(2)}$	V_{CE}=-1V, I_C= -700mA	35			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C= -500mA, I_B= -20mA			-0.7	V
Emitter-base voltage	V_{BE}	V_{CE}=-1V, I_C=-10mA	-0.5		-0.8	V
Collector Output Capacitance	C_{ob}	VCB=-10V,IE=0 f=1MHz		19		pF
Transition frequency	f_T	V_{CE}=-5V,I_C=-10mA		120		MHz

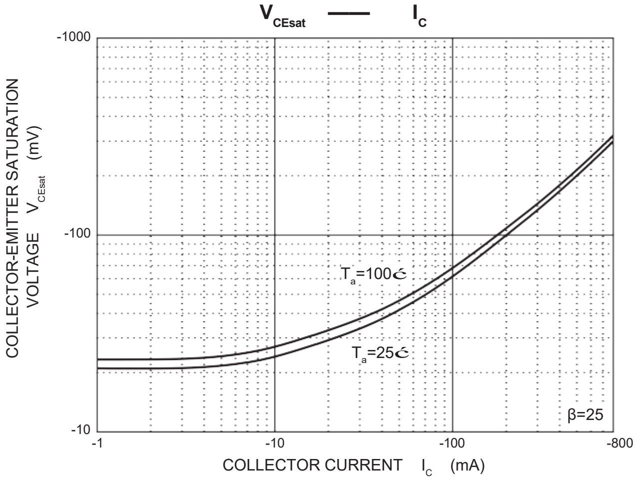
CLASSIFICATION OF $h_{FE(1)}$

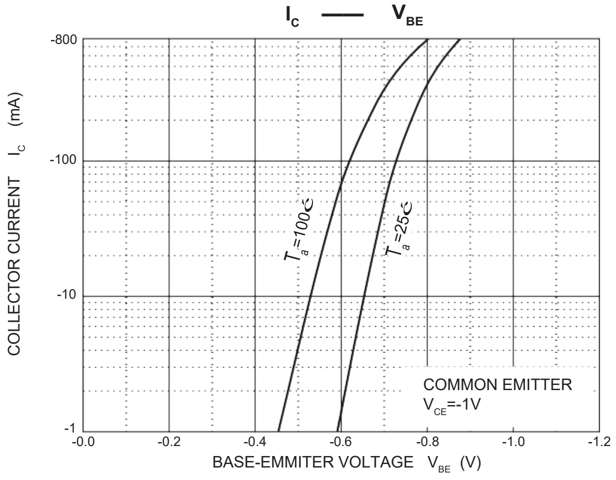
Rank	O	Y
Range	100-200	160-320

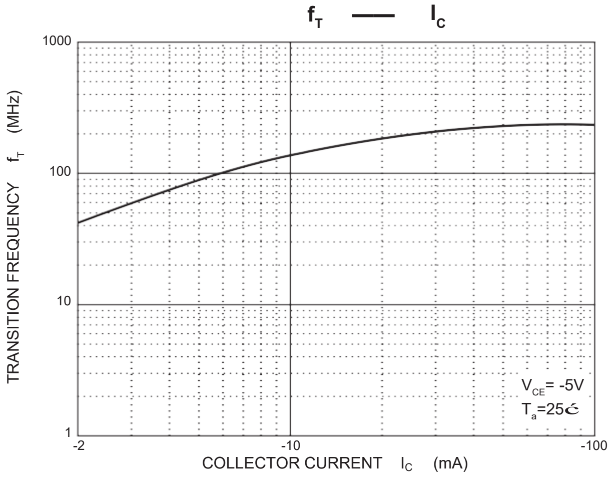

Static Characteristic
COMMON EMITTER
T_a=25℃
-1.0mA
-0.9mA
-0.8mA
-0.7mA
-0.6mA
-0.5mA
-0.4mA
-0.3mA
-0.2mA
I_B=-0.1mA
COLLECTOR CURRENT I_C (mA)
-250
-200
-150
-100
-50
-0
-0.0
-0.5
-1.0
-1.5
-2.0
-2.5
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

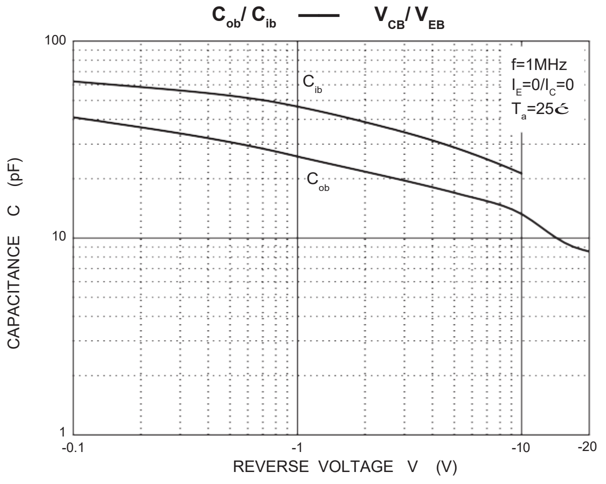

h_{FE} — I_C
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=-1V
DC CURRENT GAIN h_{FE}
1000
100
10
-1
-10
-100
-800
COLLECTOR CURRENT I_C (mA)

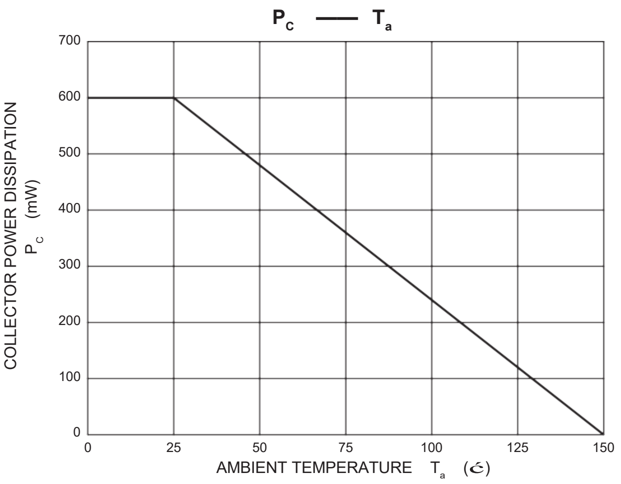

V_{BEsat} — I_C
T_a=25℃
T_a=100℃
β=25
BASE-EMITTER SATURATION VOLTAGE V_{BE}(sat) (mV)
-2000
-1000
-100
-1
-10
-100
-800
COLLECTOR CURRENT I_C (mA)


V_{CEsat} — I_C
T_a=100℃
T_a=25℃
β=25
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
-1000
-100
-10
-1
-10
-100
-800
COLLECTOR CURRENT I_C (mA)


I_C — V_{BE}
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=-1V
COLLECTOR CURRENT I_C (mA)
-800
-100
-10
-1
-0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
BASE-EMMITER VOLTAGE V_{BE} (V)


f_T — I_C
V_{CE}= -5V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
1000
100
10
1
-2
-10
-100
COLLECTOR CURRENT I_C (mA)


C_{ob}/ C_{ib} — V_{CB}/ V_{EB}
C_{ib}
C_{ob}
f=1MHz
I_E=0/I_C=0
T_a=25℃
CAPACITANCE C (pF)
100
10
1
-0.1
-1
-10
-20
REVERSE VOLTAGE V (V)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
700
600
500
400
300
200
100
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)