2SA1201 TRANSISTOR (PNP)

SOT-89

FEATURES

- High voltage
- High transition frequency
- Complementary to 2SC2881

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-120	V
V_{CEO}	Collector-Emitter Voltage	-120	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-0.8	A
P_C	Collector Power Dissipation	0.5	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~150	℃
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	250	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-1mA,I_E=0	-120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-10mA,I_B=0	-120			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-1mA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-120V,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}	V_{CE}=-5V,I_C=-100mA	80		240	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-500mA,I_B=-50mA			-1	V
Base-emitter voltage	V_{BE}	V_{CE}=-5V,I_C=-500mA			-1	V
Transition frequency	f_T	V_{CE}=-5V,I_C=-100mA		120		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MHz			30	pF

CLASSIFICATION OF h_{FE}

Rank	O	Y
Range	80-160	120-240
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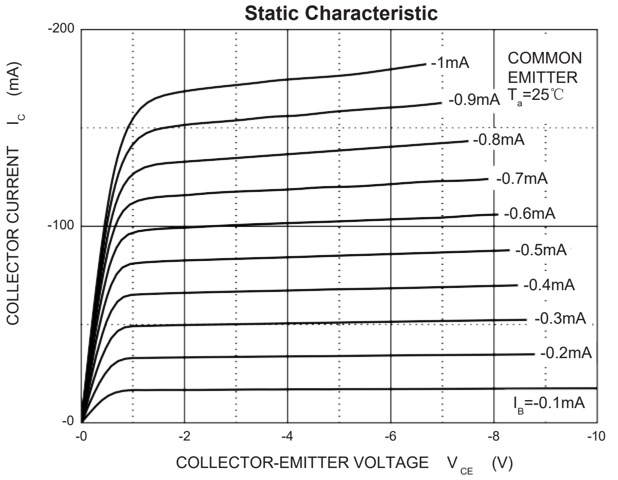
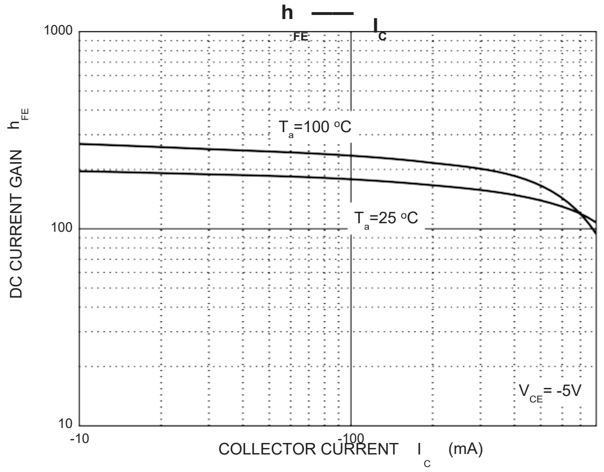
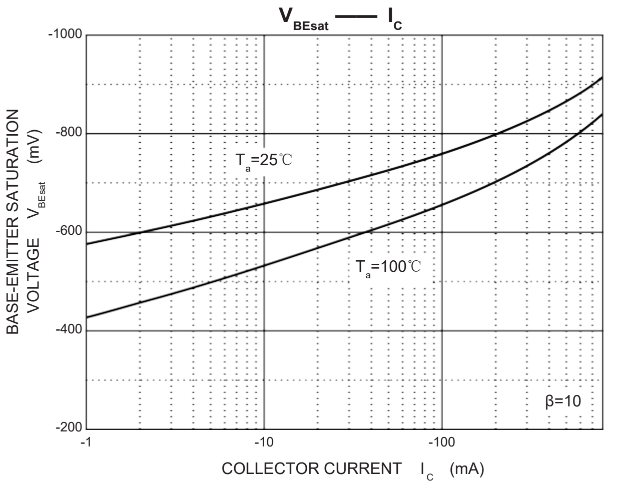
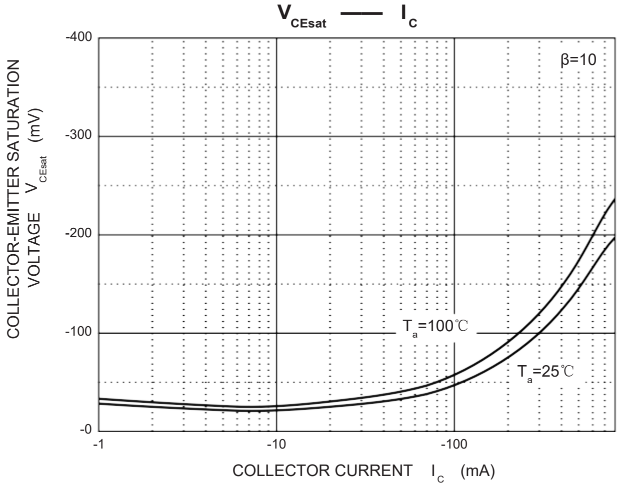
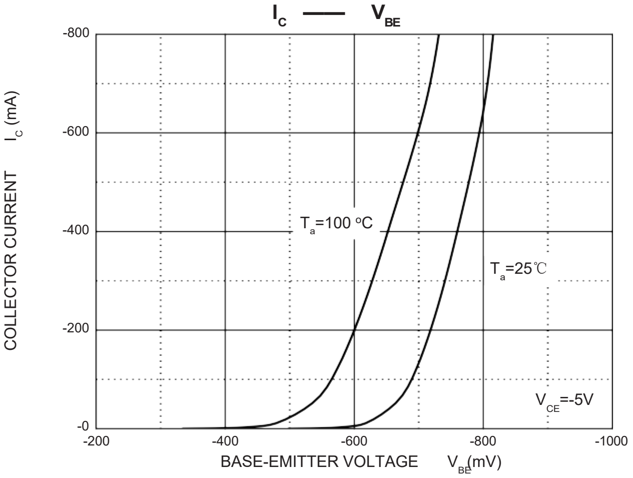
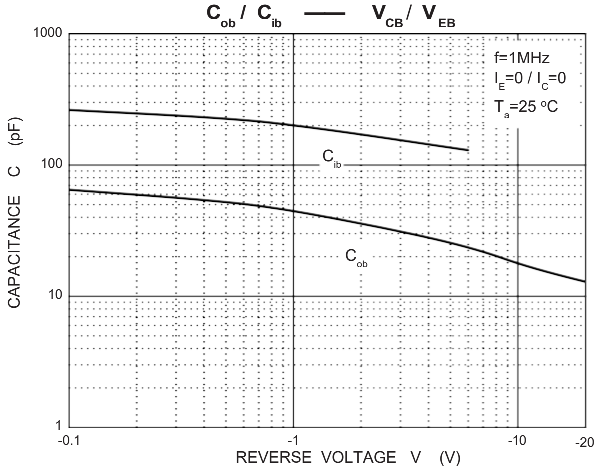

Static Characteristic
COMMON
EMITTER
T_a=25℃
-1mA
-0.9mA
-0.8mA
-0.7mA
-0.6mA
-0.5mA
-0.4mA
-0.3mA
-0.2mA
I_B=-0.1mA
COLLECTOR CURRENT I_C (mA)
-200
-100
-0
-0
-2
-4
-6
-8
-10
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

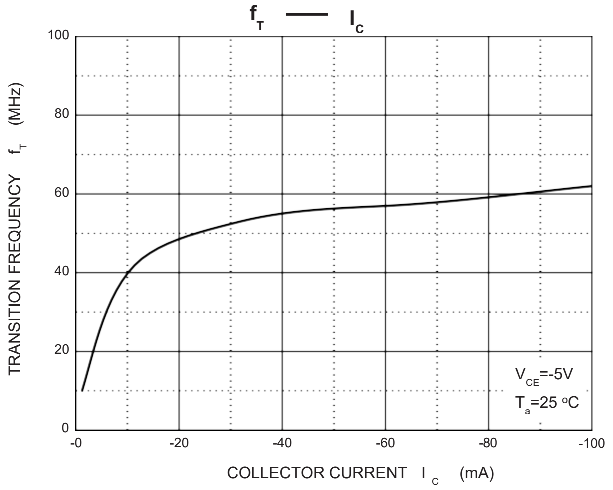

h_{FE} — I_C
DC CURRENT GAIN h_{FE}
1000
100
10
T_a=100 °C
T_a=25 °C
V_{CE}= -5V
-10
-100
COLLECTOR CURRENT I_C (mA)

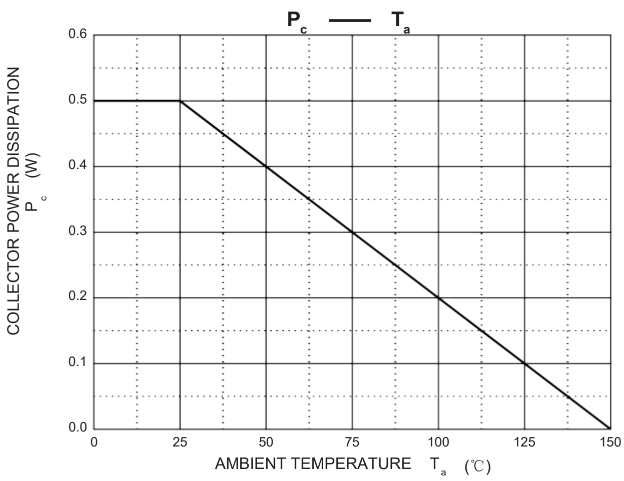

V_{BEsat} — I_C
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
-1000
-800
-600
-400
-200
T_a=25℃
T_a=100℃
β=10
-1
-10
-100
COLLECTOR CURRENT I_C (mA)


V_{CEsat} — I_C
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
-400
-300
-200
-100
-0
β=10
T_a=100℃
T_a=25℃
-1
-10
-100
COLLECTOR CURRENT I_C (mA)


I_C — V_{BE}
COLLECTOR CURRENT I_C (mA)
-800
-600
-400
-200
-0
T_a=100 °C
T_a=25℃
V_{CE}=-5V
-200
-400
-600
-800
-1000
BASE-EMITTER VOLTAGE V_{BE}(mV)


C_{ob} / C_{ib} — V_{CB} / V_{EB}
CAPACITANCE C (pF)
1000
100
10
1
f=1MHz
I_E=0 / I_C=0
T_a=25 °C
C_{ib}
C_{ob}
-0.1
-1
-10
-20
REVERSE VOLTAGE V (V)


f_T — I_C
TRANSITION FREQUENCY f_T (MHz)
100
80
60
40
20
0
V_{CE}=-5V
T_a=25 °C
-0
-20
-40
-60
-80
-100
COLLECTOR CURRENT I_C (mA)


P_c — T_a
COLLECTOR POWER DISSIPATION P_c (W)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)