2SA1235A TRANSISTOR (PNP)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-23-3

FEATURES

- Low Collector Current
- Low Collector Power Dissipation

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

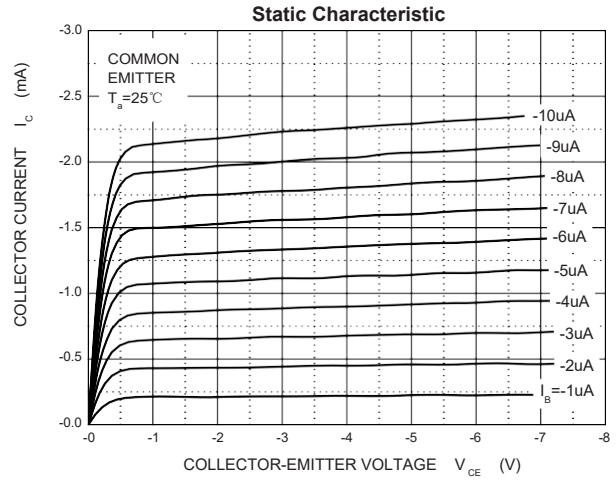
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current	-200	mA
P_C	Collector Power Dissipation	400	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	312.5	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

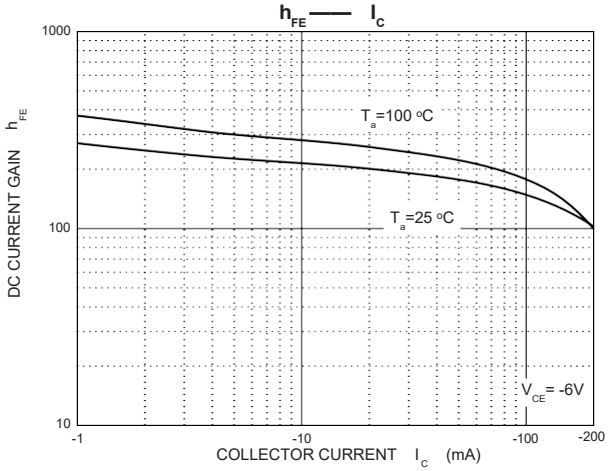
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

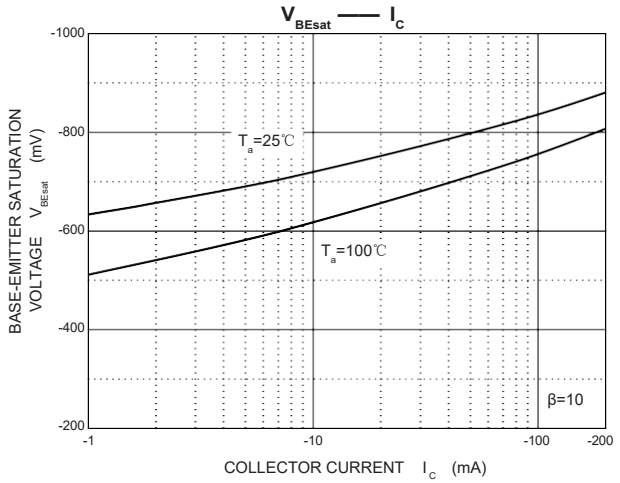
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA, I_E=0	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-0.1mA, I_B=0	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA, I_C=0	-6			V
Collector cut-off current	I_{CBO}	V_{CB}=-60V, I_E=0			-100	nA
Emitter cut-off current	I_{EBO}	V_{EB}=-6V, I_C=0			-100	nA
DC current gain	$h_{FE(1)}$	V_{CE}=-6V, I_C=-1mA	150		500	
	$h_{FE(2)}$	V_{CE}=-6V, I_C=-0.1mA	90			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-100mA, I_B=-10mA			-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-100mA, I_B=-10mA			-1	V
Transition frequency	f_T	V_{CE}=-6V,I_C=-10mA		200		MHz
Collector output capacitance	C_{ob}	V_{CB}=-6V, I_E=0, f=1MHz		4		pF

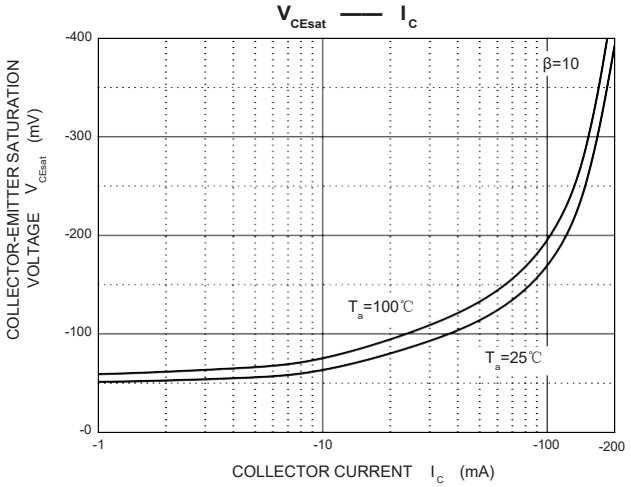
CLASSIFICATION OF $h_{FE(1)}$

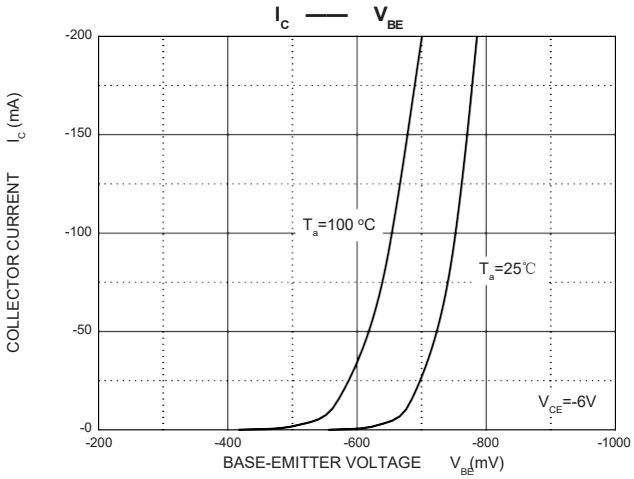
RANK	M·E	M·F
RANGE	150–300	250–500
MARKING	M·E	M·F

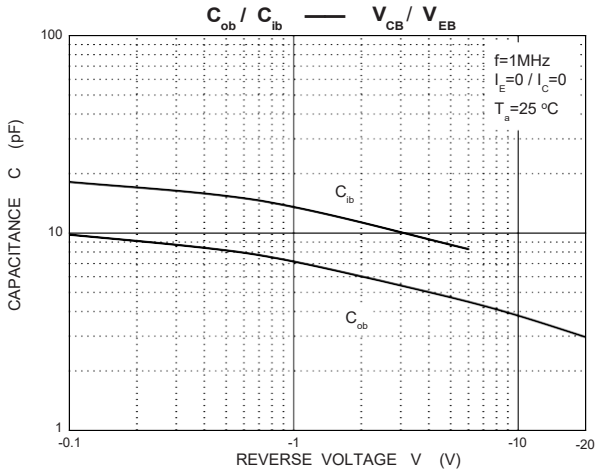

Static Characteristic
COMMON
EMITTER
Ta=25℃
-10uA
-9uA
-8uA
-7uA
-6uA
-5uA
-4uA
-3uA
-2uA
IB=-1uA
COLLECTOR CURRENT IC (mA)
COLLECTOR-EMITTER VOLTAGE VCE (V)

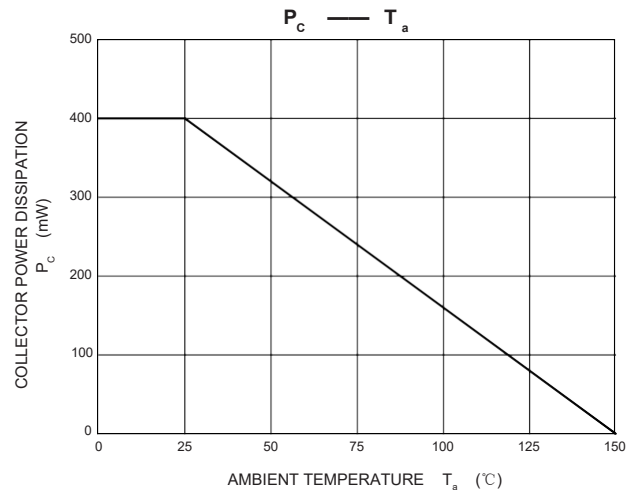

hFE —— IC
Ta=100 °C
Ta=25 °C
VCE= -6V
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (mA)


VBEsat —— IC
Ta=25℃
Ta=100℃
β=10
BASE-EMITTER SATURATION VOLTAGE VBEsat (mV)
COLLECTOR CURRENT IC (mA)


VCEsat —— IC
β=10
Ta=100℃
Ta=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE VCEsat (mV)
COLLECTOR CURRENT IC (mA)


IC —— VBE
Ta=100 °C
Ta=25℃
VCE=-6V
COLLECTOR CURRENT IC (mA)
BASE-EMITTER VOLTAGE VBE(mV)


Cob / Cib —— VCB / VEB
f=1MHz
IE=0 / IC=0
Ta=25 °C
Cib
Cob
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


PC —— Ta
COLLECTOR POWER DISSIPATION PC (mW)
AMBIENT TEMPERATURE Ta (℃)